UNIVERSITIY OF LJUBLJANA
FACULTY OF ECONOMICS

MASTER’S THESIS

UNIVERSITY EDUCATION BRANDING: THE CASE OF UNIVERSITY OF NOVI SAD, FACULTY OF SCIENCE

Ljubljana, January 2011 OLIVERA KRKLJEŠ

STATEMENT

I, Olivera Krklješ, hereby certify to be the author of this Master's thesis, that was written under mentorship of prof. Vesna Žabkar, Ph.D. In compliance with the Act of Author's and Related Rights - Para 1, Article 21, I hereby agree this thesis to be published on the website pages of the Faculty of Economics, University of Ljubljana, Slovenia.

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INTRODUCTION

The key concern of the thesis is low recognition of the University of Novi Sad in domestic and foreign environment. Majority of literature states that the higher education market is becoming more competitive. In these terms, Aaker (1991) recommends working on branding, suggesting brand as a unique feature of the product and the most effective method to fight the competition. Private Universities have been working on creating a brand name well recognized in the public, therefore, even though state Universities still enjoy great advantage above private ones, they need to work on their recognition as well. Kraft and Vodopivec (2003) claim that state Universities are often reluctant to change, especially in transitional economies, such as Serbia. The additional problem with developing countries is funding, since the government does not have enough resources to invest in higher education. Therefore, it is a challenge to analyze university branding.

The first part of the thesis refers to relevant knowledge from the literature about higher education sector. The importance of education is stressed, followed by the explanation of the relevance of marketing activities within this sector. As an important set of interdependent characteristics which determine organization, more focus is put on creation of a corporate identity (Mointgeon & Ramanantsoa, 1997). It is explicated through corporate identity model by Melewar and Jenkins (2002). All relevant aspects which this model incorporates are explained. Firstly, there is a description of visual identity and corporate communication that create better understanding of an organization (Balmer, 2001). Secondly, the employees' aspect, which is becoming increasingly important in higher education sector, is outlined (Wilson, 2001). The analysis of their behavior encompasses its impact on interrelationships between employees, but also on students' perception (Melewar & Akel, 2005). Moreover, Bailey, Chaw and Hadded (1999) suggest that for Faculty progress, commitment from educational staff is vital in terms of their self-development in professional sense. Thirdly, elements and influence of corporate culture is put in context of higher education. Both visible aspects of organizational culture such as different behavior patterns, environment and the written and spoken language used, and the deeper level of organization in terms of its values and goals are presented (Smart & St. John, 1996). Final element of corporate identity model are market conditions, which are described in terms of general issues which higher education is facing, such as low cooperation between business leaders and educators, accessibility of higher education, unfavorable demographic trends, etc. (Al-Hawaj, Elali & Twizell, 2007).

Argenti (2000) suggests that the external and internal environment of the institution ought to be analyzed. Therefore, the second part of thesis focuses on situation in Serbia in the past decade, explaining relevant external factors that influence University of Novi Sad, but, as well as providing information concerning internal environment of the University, in terms of its facilities, staff, students, etc.

With regards to the Faculty of Sciences, the problem is not only that, current students do not, or rarely, see their individual progress and prosperity linked to this institution, but also the Faculty does not fulfill its maximum capacity when it comes to new students' enrolment. Halbesleben, Becker and Buckley (2003) claim that quality of higher education institutions depends to great extent on the students' involvement. With regards to this, the thesis intends to overcome low satisfaction of students and increase their motivation so that both parties would benefit. The research at the Faculty of Sciences refers to secondary data, which represent the starting point for primary research. Primary data gathering includes two students' questionnaires and interviews with teaching staff. The first questionnaire examines students' profile which is relevant in terms of promotional activities, while the second refers to present students' satisfaction. As Mai (2005) suggests, students' satisfaction depends on whether students' perception of school services matches their previous expectations. Therefore, the present students' satisfaction questionnaire records their opinion regarding different quality issues of the Faculty of Sciences and identifies the gap, i.e. that their expectations are not fulfilled. Interviews with teaching staff, as qualitative part of the research, comprehend different points of view on the same quality issues. The research results identify where the key problems at the Faculty of Sciences lie. As Gibbs and Knapps (2002) claim it took a long time for higher education institutions to realize the importance of applying marketing skills and knowledge. On the one hand, certain limitations, as Nicolescu (2009) claims, exist when applying marketing concepts to higher education sector. On the other hand, bearing in mind the market specificities, by using a wide scope of marketing theories, concepts and tools, this thesis aims to overcome these issues and recommend adequate solutions.

1 MARKETING IN HIGHER EDUCATION

1.1 Role of Education in the society

"We must try, through education, to realize something new in the world - by persuasion rather than by force, cooperatively rather than competitively, not for the purpose of gaining dominance for a nation or an ideology but for the purpose of helping every society to develop its own concept of public decency and individual fulfillment."

Sen. J. William Fulbright
(cited in Spanier, 2008)

What role does education play in our lives? Is it something that we should earn, or is it a birth right? How big is its importance to society?

Many questions are being raised regarding education which surely is evolving and as everything else, is forced to adapt to dynamic technological developments. On the one hand, education is setting higher and higher expectations, appreciating flexibility and knowledge and forcing students to differentiate on a very competitive labor market. Peter

Drucker said at the turn of the 21st century, that in USA the number of knowledge workers, those who obtain college degree, was higher than that of physical workers (Pawlovski, 2004, p. 12). Additionally, the situation is similar when it comes to European Higher Education, which within 4.000 Higher Education institutions counts 19 million students. Furthermore, Higher Education in Europe is increasing in importance since the number of students in 2009 has doubled in Armenia, Lithuania, Montenegro and Romania. Italy, Malta and Slovenia also report a significant increase for 2009, while the only country with decreased the number of students is Spain (Mahon, 2010). Therefore, since the demand for higher education is extremely high, students need to be more ambitious than ever. For each student individually, the most important issue is what he or she will gain from education. Often a diploma is not enough, so there is an increasing number of young people pursuing two or even three degrees simultaneously, aiming at easing their professional career and providing themselves a better future. On the other hand, market of higher education is more competitive than ever, forcing educational institutions to fight for their share of the market and every single student.

It is believed that education plays a key role in strengthening a society. Going from one culture to another, differences between educational systems and the way it satisfies the needs of specific country are striking. However, its importance is quite well understood worldwide. It is generally agreed upon that proper education enables society to be more productive. People become more socially aware, thus, more prepared to take responsibility for their own actions, and for well-being of others and the preservation of their country's environment and natural resources. The more educated the citizen is, the greater sense for personal and national identity he or she has. Well educated society helps to create positive cultural values by developing students' ability to gain historical understanding and communicate moral and ethical values that specific society chooses to promote (Smitherman, 2009).

Nevertheless, in terms of the business world, if the country wants to sustain its competitiveness on the global market, it is of greatest relevance to have well educated and skilled people, who will be able to follow all the trends and changes on the market, as well as overcome the challenges, which nowadays, all economies are facing. When talking about higher education, the term which is increasingly emerging is "the education industry". This term clearly underlines the role that education has in the economy, but also illustrating the sums of money that are annually spent on education by governments and individuals. For every country it has become essential to think about citizen education and scientific research, where universities play a fundamental role, in order to improve economic status and acquire significant power on the global scene (University of Strathclyde, 2006, p. 12).

In 21st century the contribution that higher education can give to development of national economies is significant. Higher education institutions are seen as independent business entities which with the economic activity generated by institutional expenditure are becoming substantial for every country. In order to emphasize the above said importance of higher education institutions the example of UK case study is suitable. The research shows that with revenue of £16,9 billion, the higher education sector is a significant UK industry and can be compared in these terms with financial services revenue (University of Strathclyde, 2006, p. 11). Additionally, higher education in 21st century has become increasingly important in terms of how many people it employs. It is evident that higher education institutions are very large and significant employers. Not only do they employ academics but also provide jobs for a rather wide range of staff.

Apart from their own output and employment, higher education institutions' expenditure generates additional output and employment in other sectors of the economy through secondary or "knock-on" multiplier effects. Two types of these effects are present: indirect and induced effects. Firstly, indirect effects refer to the purchase of goods and services higher education institutions' make from other sectors in order to support their own activity. In such manner they stimulate activities from other industries, which in turn make purchases from other suppliers in order to fulfill higher education's order, creating a rippling-out effect. Secondly, induced effects refer to higher education institutions' employer characteristic where it pays wages and salaries to employees, who spend this income on consuming goods and services. Further, this creates wage income for employees in other industries, who also spend their income, creating a virtuous circle from which economy as a whole benefits (University of Strathclyde, 2006, p. 19).

1.2 Key issues in higher education today

In the past century enormous growth and expansion of higher education has been noted. In 1900, roughly 500,000 students were enrolled in higher education institutions worldwide, while by 2000, the number of tertiary students had grown to approximately 100 million people and it is believed that student number will reach 160 million by 2025 (Friga, Bettis & Sullivan, 2003, p. 233; Klemencic & Fried, 2007). One of the countries where the increase is highly impressive is Poland, a country of under 40 million people, where in 2004 the dramatic increase from 400,000 to 1,8 million students occurred in a period of just 15 years. Tremendous growth, but also other factors which are present in today's world brought the higher education market to the point when it has serious issues to deal with. There are no exceptions, thus in each part of the globe higher education is facing certain constraints. If we analyze and compare the state of higher education in different countries, on different continents it can be concluded that the key problems in higher education across the world to some extent can be generalized. The literature highlights the most relevant global issues of higher education market. The world is becoming more and more dynamic so adaptation to changes has to be instant. Since globalization is one of the biggest phenomena of today, the discussion about higher education ought to be held on the global level, which will bring benefits to each country in terms of sharing and learning from one another's experience. The most relevant problems identified are (Al-Hawaj et al., 2007, p. 57):

- Low cooperation between business leaders and educators;
- Accessibility of higher education;
- Unfavorable demographic trends;
- Fast pace of technology;
- Crisis in the academic profession.

The first problem to be recognized is very low cooperation between business leaders and educators. People from business world and educating personnel hardly ever discuss or agree upon a set of skills which students should obtain during their education in order to make their employment less stressful experience. Such situation results in low lecture attendance and lack of motivation among students (Higher Education in the 21st Century: Global Challenge and National response, 1999, p. 13).

An additional problem, posing further difficulties for young job-seekers, is the accessibility of higher education. The value and appreciation of the college degree has deteriorated, as a consequence of ever-increasing supply of work force, which is in turn causing a rise of unemployment.

Demographic trends are another issue which higher education in 21st century is facing. Namely, demographic trends are rather diverse in different parts of the world, carrying different implications for higher education. In Asia, where there is a simultaneous growth in population and in socioeconomic conditions, the demand for higher education is rising as well. On the other hand, the situation in Europe is reverse. The birthrates are in decline which in combination with stable socioeconomic situation may result in higher education supply surplus in terms of domestic demand. Therefore, while some regions will struggle to provide quality education for all prospective individuals, others will have to "battle for brainpower" (Klemencic & Fried, 2007). Such situation is causing migration of students to Europe. Accordingly, in 2007 more than 350,000 Chinese students were studying at overseas universities and the predictions are that this number will rise to 645,000 within 20 years. Additionally, it is believed that by 2025, when India is expected to become the most populous nation, about 300,000 Indian students will be going abroad to gain their degree. The third place in terms of the number of students studying abroad within 20 years is likely to be taken by South Korea with 127,000 students, while Morocco will follow with 106,000 students enrolled in overseas universities. Finally, Turkey expected to come fifth, with 104,000 of its young people studying abroad. Above mentioned demographic trends will definitely force the higher education system to change, although differently across the world. As far as Europe is concerned, in order to overcome or at least lessen the effects of such trends, it will have to adjust the university programs and organizational structure, put social selectivity aside and create an environment which will match more diverse student profile (University World News, 2007).

Additionally, technological developments influence higher education as every other segment of people' lives. In terms of higher education and education in general, it has brought about a revolution in distance learning, which has become an important indicator for quality of an educational institution and necessary due to the above mentioned demographic trends. Generally, for universities it is relevant to keep up with the world developments if they want to achieve or sustain quality. Yet, such requirements are costly and thus, especially problematic for developing countries.

Finally, the academic profession is facing a serious crisis. In the process of transition of higher education professors are required to adjust to new circumstances but they are given few resources to cope with those changes. Student-teacher ratios and academic salaries have deteriorated, which has resulted in much less commitment on the part of the academic profession. The importance of employees' commitment will be discussed in the following chapter of the thesis, however, here it is relevant to mention that in order to achieve compactness of an organization, commitment and loyalty from employees' side have to exist. Additionally, in the context of universities it is clear that learning environment where lecturers are committed and enthusiastic will ease and additionally motivate students to embrace as much knowledge as possible. From the above mentioned reasons unfavorable conditions of teaching profession represent a danger for universities' effectiveness, in terms of the students' studying period and their success, thus damaging institutions' reputation. Moreover, declining birthrates in Europe will jeopardize academic profession as well, since the retirements of academics, if not followed by solid supply of young researchers, will cause a shrinking pool in knowledge producers and a stagnation of knowledge societies (Klemencic & Fried, 2007).

1.3 Higher education from marketing perspective

Undoubtedly, higher education offers many benefits in many different forms. However, the question that arises refers to the matter of who enjoys those benefits. In customer driven approach, different authors identify different categories of higher education customers. Weaver (cited in Conway, Mackay & Yorke, 1994, p. 31) sees four parties as potential ones: the Government, its administrators, teachers or academics and the actual consumers, i.e. the learners, their families, employers and society as a whole. Alternatively, Robinson and Long (cited in Conway, Mackay & Yorke, 1994, p. 31) distinguish primary, secondary and tertiary customers. Students are defined as primary ones; secondary customers are the paymasters, meaning local education authorities, employers, etc., while tertiary ones are validating bodies, ex-students, employers, parents, etc. The awareness of the customer of higher education institutions is essential since strategies of customer driven approach depend on understanding the needs and wants of customers in the market in order to deliver the right goods and services effectively and efficiently.

It is relevant to mention that there are authors who find the notion of students as customer unacceptable. They believe that marketing strategies which are directly borrowed from business world are not applicable nor welcome in higher education institutions. Even though the market is getting more competitive and the universities have to work hard on attracting students and keeping their share of the market, certain limitations to customer driven approach do exist (Hemsley-Brown & Goonawardana, 2007). While there is a consensus that marketing strategies are inevitable, there is still an open discussion on the notion to what extent the higher education market should be aligned with commercial industry where students are treated as customers and education as a product.

Those who believe that customer driven approach in higher education can represent a possible danger argue that institutions of higher education are increasingly operating as regular businesses competing for sales, which is not an acceptable mission of higher education institutions. By creating a perception in the minds of students that they are customers, students behave as if they had the same rights they have in everyday market place. Therefore, universities can put themselves in the position where students complain about the grades, methods of testing their knowledge, etc. Consequently, there is a possible threat to the quality of the programs. Fiske (cited in Driscoll & Wicks, 1998, p. 59) said that by adjusting programs to fit students' needs exclusively, the institution will not enjoy long term benefits. Additionally, he states that certain standards have to exist in order to maintain the high quality and believes that students do not have necessary expertise to evaluate university programs realistically, even after the purchase, which means program design must not be based on students' desires solely. The concern is that, by accepting every student's complain or every request, without careful consideration, serious damage can be done to higher education institutions' quality. The criticism directed at customer oriented approach claims that even though satisfying latent student need is in fashion at the moment, institutions of higher education ought to aim at teaching students how to think, solve problems creatively, adapt to change and understand the social dynamics of the environment in which the graduate will eventually work. Choy Cong (1996, p. 10) said that school leadership means preparing students for living and working in a future knowledge-based society and preparing teachers for new ways of teaching and learning, so that is the main principle which education institutions ought to be guided by.

Even though commercial exchange must not be taken as a basis of student-school relationship, according to Ivy (2008) there is nothing wrong with adopting a marketing focus as long as the university, in its promotional strategies, is aware of what a university education really requires. Therefore, there is no discussion about the inevitable adjustments which Universities have to make in terms of environmental changes. Many universities have to change class formats or even degree programs in order to meet the needs of new students groups (Driscoll & Wicks, 1998). Additionally, a range marketing strategies are used and this needs to continue.

Despite the fact that the discussion about the consumers and the right proportion of marketing implementation to higher education services is ongoing and still inconclusive, the thesis will focus on students as main actors.

West (cited in Socci, 2000, p. 7) summarizes the specificity of higher education market saying that higher education industry is the one in which those who consume the product do not purchase it, those who produce it do not sell it, and those who finance it do not control it.

1.4 Marketing from higher education perspective

"Thirty years from now the big university campuses will be relics. Universities won't survive."

Peter Drucker (1997)
(cited in Friga, Bettis & Sullivan, 2003, p. 233)

Many share the view of universities' unfavorable situation in the 21st century unless drastic changes to their strategies and structures are made in order to accommodate the needs of a changing world. In many countries higher education moved from niche service market consumed by small elite to mass market. As the higher education market matures, the need for applying different marketing strategies becomes more apparent (Friga, Bettis & Sullivan, 2003; O'Neil & Palmer, 2004).

Gibbs and Knapp (2002, p. 2) state that marketing is a process that can make a positive contribution to both social and economic capital. They believe that it is not just about turnover or profit, but that the necessary experience and skills ought to be applied where decisions on resources and on communications need to be made and implemented.

Over the past decades marketing has evolved steadily from product oriented through services marketing to the role that marketing can play in not for profit sector. In a study carried out in the USA over a decade ago, 300 educational institution administrators, whose institutions were facing declining student enrolments, increasing costs and rising tuition fees were asked the question what marketing is. The results were the following: 61 percent viewed marketing as a combination of selling, advertising, and public relations, while 21 percent stated only one of these three activities. Only a small percent knew that marketing is far more complex than that. With the years the importance of marketing skills is realized, however, the actual undertaking of marketing activities still has a lot of space to develop. The increasing need for implementation of marketing activities is derived from the fact that the range of education providers is wider than ever (Mai, 2005).

From a marketing perspective, higher education belongs to services and can be differentiated from 'goods' on the basis of service product characteristics which are intangibility, heterogeneity, perishability and inseparability.

It is believed that there are varying degrees of intangibility. Education is thought to be right at the intangible end of the spectrum, with very few tangible products normally provided as part of the service. As a consequence of intangibility, it is rather hard for potential clients to assess the quality of a service, except by looking at the tangible elements of it. Furthermore, heterogeneity of the education services refers to the fact that each individual provider, as well as the client, is different. Teaching is dependent on teacher's personal skills and social interaction. In addition to this, each student will perceive and respond to the service differently, contributing to the statement of heterogeneity of services in this industry. Educational institutions, like other services, provide something which is perishable. The perishability is explained by the fact that the services of educational institutions, at least partially are consumed at the point of delivery. Finally, linked to perishability is inseparability, in the sense that teaching and learning intertwine (Harvey & Busher, 1996, p. 27).

With regards to challenges which higher education market is setting to its competitors marketing strategies are supposed to help in overcoming the obstacles and constrains of this market. It is generally believed that promotion is the key area that university marketers need to be address when building and implementing strategies. Especially in terms of intangibility, it is important that educational institutions present the opportunities which they offer to students in a clear manner in order to ease their decision making process and decrease the risk of making wrong decisions. Schools, for example, can explain what opportunities are offered to students, such as how and what they are going to be taught. Careful preparation and promotion of an institution in terms of its mission statement, the use of logo, but also public relations can assist students in identifying particular services (Harvey & Busher, 1996, p. 28).

1.5 Marketing strategies and marketing mix of higher education

It was already mentioned that the higher education market is more competitive than ever, which is forcing higher education institutions to differentiate themselves and find best possible means to attain that. Hence, it is suggested that educational institutions should aim to develop solid marketing strategies. The process of implementing marketing strategies first of all includes thorough analysis of internal and external environment, so that institutions could identify major marketing opportunities which they could then seize with limited resources. It is believed that after careful analysis of the environment three essential methods ought to be used for designing a successful marketing strategy. Those are: market segmentation, target market selection and product positioning (Ho & Hung, 2008, p. 329).

At its most basic level, the term market segmentation refers to subdividing a market along some commonality or similarity. It separates a market into groups of customers who have same needs and purchasing patterns.

It is believed that there are two types of segmentation: one based on benefits sought by customers, and the other one based on observable characteristics of customers. Most literature suggests that marketers when segmenting the market should focus on benefits and needs of their customers, since only by designing the products to match those customer expectations can they serve a particular market in the most effective and efficient manner (Ho & Hung, 2008).

Target market selection is used in order to select one or more different segments so that the benefits of the institution could be maximized.

Finally, positioning is closely related to the associations and concepts that customers have about a certain brand, as well as articulating the location of one organization relative to others. It is believed that brand positioning better fulfills consumer needs because it not only addresses the specific meaning of a brand in consumers' minds, but also articulates the goal that consumers will achieve (Ho & Hung, 2008).

Furthermore, important strategic tool, marketing mix of higher education, follows the same idea of marketing mix of four "P"s, while adding extra criteria which should be considered when it comes to higher education. Product, by definition, is what is being sold. However, in higher education this opens another debate. Two polarized theories claim, on the one hand, that students are the products. On the other hand, another perspective is that degrees for which students are registering are the products. Even though there is no clear consensus about this issue, there are still more arguments on the claim that degrees are the products, therefore, in the thesis, with regards to previous chapters, students will be taken as primary customers and degree programs or education will be considered as products. In the context of product, the design of the degree is central to product element of marketing mix. Gibbs and Knapp (2002, p. 58) have suggested the following stages when designing a program: consumer need analysis, idea generation, preliminary analysis, pre-positioning concept, field study and consumer evaluation.

As a first step in process of product design, the identification of customers' needs has to be done. By understanding their reasons and motives to choose certain higher education institution, a new area of content can be delivered to them and the benefits will follow. Secondly, idea generation is a way to classify different ideas and notions on how a program should be designed. As a first categorization division according to the source of idea can be used as criteria. Therefore, the ideas can be divided into ones coming from within the institution and those that come from outside. Internal ideas can be generated through student questionnaires, complaints, environmental changes, post project evaluations, etc., while other ideas come from overseas visits or foreign exchanges, partners of the institution, etc. The following step is preliminary analysis. At this stage it is essential to consider all ideas and choose only those which add value to the institution's brand and enhance the relationship with the target group. This analysis should address the needs of both the institution and the potential consumers. Pre-positioning concept represents the next stage. The emphasis here is on reconsidering the programs and adjusting them to what is know about the current situation on the market. With this analysis, particular aspects of the program are studied, such as the length of the period of study, the level of the program, where it will be taught and how much work experience will be present (Ivy, 2008).

Additionally, field study is needed in the case where it is estimated that the costs of failure could be higher than the costs of piloting. Finally, evaluation of the program's success is important. It is relevant to evaluate the program even if the success has been lacking, since it is equally or even more relevant to realize the errors in order to prevent their repetition. (Gibbs & Knapp, 2002, p. 61)

Tuition fees or what is being charged in order to get specific degree define price as an element of marketing mix. Price is important for universities since it sets institution's revenues, but also has a part in students' perceptions about the institution quality. In most cases it is set by the Government.

Place is the distribution method of necessary material and information that students need to gain in order to successfully complete their courses. Students are no longer confined to the classroom. Therefore, there is increasing access to lecture and supporting materials through other methods than physical presence in the classroom, which are virtual learning media.

Promotion encompasses all the tools that university may use in order to distribute relevant information on their offerings to the market: advertising, publicity, public relations and other promotional efforts. Since universities need to communicate with diverse groups it is apparent that they need to have a variety of communication means. If we focus on students, to be more specific on prospective students, there is a need to activate number of promotional tools in order to target them. For example, open days, international higher education exhibitions, conventions, direct mail and advertising are a few of the tools that universities employ in order to inform, remind and persuade prospective students to select their institution. Additionally, it is suggested that most salient promotional features are reputation, academic instruction, which refers to quality of teaching, campus life, meaning added features and guidance about how to access services. Therefore, educational institutions should have this in mind when targeting the market (Gray, Fam & Llanes, 2003, p. 110).

The need to add people element to marketing mix concept is derived from the intangibility of higher education. This element includes all the staff of the university that interacts with both prospective and present students. The staff consists of academic, administrative and support staff. If we observe the importance of academic staff, it may be concluded that their image and status do not have a significant impact on prospective students, however, this element is highly important on graduate level, when students have clear perceptions of staff reputation which greatly influences their decision about their further education. The impact of support and administrative staff is rather explicit and it is considered to have great relevance. Ivy (2008) states that the simple process of how a telephone enquiry is handled may have a greater impact on whether or not a prospective student is going to keep that university in their range of options than an eminent professor's publications or research record.

The most recent additions are physical facilities and processes. The physical facilities are included in tangible elements of an institution which are all evaluated by prospective students. Processes cover all the administrative and bureaucratic functions of the university, such as handling of registration enquiries, from course evaluation to examinations, from result dissemination to graduation, etc. Since a university education requires payment before "consumption" it is important to ensure that student registers for the correct courses, has marks or grades correctly calculated and entered against the student's name, is awarded the correct qualification, as well as implementing all the other processes needed in order to keep the students' satisfaction at the highest possible level.

One of the marketing strategic tools which is gaining emphasis is branding.

2 ROLE OF BRANDING IN HIGHER EDUCATION

Fisk (cited in Jennings, 2009, p. 1) says that a great brand is one you want to live your life by, one you trust and hang on to while everything around you is changing, one that articulates the type of person you are or want to be, one that enables you to do what you couldn't otherwise achieve. Another definition of branding provided by Aaker (1991, p. 7) is that brand refers to a name, term, sign, symbol or design, or combination of them, intended to identify goods or services of one seller or group of sellers but also to differentiate them from those of competitors. The brand emphasizes the distinctive dimensions of one product or service in comparison to other product and services which satisfy the same need. These differences may be rational and tangible, but also symbolic, emotional and intangible. Brand communicates on both emotional and physical level, acknowledging that consumers purchase brands and not products.

The word brand comes from the Old Norse word brandr, meaning literally to burn, and is of Anglo-Saxon origin. Branding has been around for centuries. There is evidence that in ancient history names were put on bricks for the purpose of identifying their maker. Furthermore, it is known that in medieval Europe trade organizations used trademarks to assure the customer of the quality, and provide legal protection to the producer. Other evidence of branding originates from the Etruscans, Romans and Greeks who used to put the symbols of fish, star or cross on the pottery in order to claim their ownership. As can be seen brands have had a role in commerce for quite some time. However, it was only in twentieth century that branding and brand associations became so central to competitors (Aaker, 1991; Jenning, 2009).

On the one hand, the role of brands with regards to a customer is to ensure the same quality each time they purchase a certain brand, to simplify the decision making process and to reduce the risk of making a wrong decision or purchase. On the other hand, brands represent particularly valuable property of firms that influence consumer behavior and provide the security of sustained future revenue to these firms, which is reflected in brand equity.

According to Kotler and Keller (1997) branding is all about creating differences between products. Marketers have to inform and teach the consumer about the product or service and what it stands for. They suggest that branding creates mental structures that help consumers organize their knowledge about the products and services in a way that clarifies their decision making, and, in the process, provides value to the firm. For branding to be effective the consumers must be persuaded that there are meaningful benefits which one specific brand brings to them and which some other brand does not provide.

Branding in higher education is a strategic tool which enables easier identification and measure of the quality of certain university. Additionally, since it has been noted that the greater the congruence between the student's values, goals and attitudes and those of the institution, the less likely a student is to drop out, the concept of branding has become more significant to the field of higher education. University branding and reputation management are gaining on the importance since a university brand assists potential students in making right decisions and guarantees that their values and norms will match the institution ones (Jevons, 2006, p. 466).

Additionally, with successful branding the institution is able to better attract students, recruit and retain quality staff, improve the relationship with community and above all gain sustainable competitive advantage.

2.1 Brand equity definition

Brand equity represents a set of brand assets and liabilities linked to a brand. It adds or subtracts the value to customers depending on their associations and perceptions of a certain brand name. Brand equity model suggested by Aaker (1991, p. 15) claims that consumer-brand equity presents the combination of consumer perceptions, which are brand awareness, perceived quality and brand associations and brand loyalty that add or subtract value from the value provided by a product or a service.

2.1.1 Importance of consumer perceptions in branding

According to Aaker (1991, p. 61) awareness represents the strength of the brand's presence in target's mind. Brand awareness can also be seen as a continuum ranging from a feeling of uncertainty that a brand is recognized to a belief that it is the only possible and true choice in particular product or service class.

When a certain brand is well known, it has high brand awareness, therefore, it is easily recognized in the marketplace and easily recalled when a customer is faced with a brand-related need. The importance of awareness from the target market perspective is a necessity in order to have a strong brand.

Furthermore, the target must perceive the quality of the offer so that the brand equity would be attained. Therefore, perceived quality can be defined relatively to an intended purpose and a set of alternatives. The association and perception of good quality has to be created by the brand in order to succeed.

What drives and maintains loyalty is defined as brand associations. It is anything linked in memory to a brand (Aaker, 1991, p. 109).

2.1.2 From satisfaction to loyalty

Loyalty towards a certain brand puts that brand into a position where it is largely protected from the competition. It represents a continuous repurchase, conscious or unconscious, of a certain brand. It is hard to achieve, since it is considered to be one of the most powerful strategic assets.

Brand loyalty of the customer is considered to be the core of a brand’s equity. It occurs when positive attitudes and beliefs towards certain brand are manifested in repeated buying behavior (Keller, 1993, p. 9). It is believed that there are two different types of loyalty. One is true and the other one is spurious. The basic distinction between these two categories is that the first one is based on true commitment towards a brand, while the other one is a function of inertia. What precedes brand commitment is surely customer satisfaction, which can be described as the degree to which expectations match the actual performance. Additionally, consumer has to be able to evaluate his or her purchase relatively to other possible solutions to satisfaction of a certain need. Therefore, his or her ignorance and lack of knowledge towards specific brand might be hardening the evaluation of the brand, and consequently emergence of true commitment (Morgan & Hunt, 2004, p. 23).

As it was already mentioned above, if the true commitment does not occur we are dealing with spurious loyalty. In such situation the customer can easily be won over by some other brand. Even though the repurchase of the same brand may occur, the reasoning behind it is in most cases, the comfort of not having to make a new choice, feeling of indifference, reduction of risk, etc., in other words, everything but true commitment. Apart from the distinction between true and spurious loyalty, Aaker (1991, p. 40) suggests five different levels of loyalty: The first level belongs to the disloyal buyer who is ignorant towards a brand. Each brand is considered as adequate and a brand name does not have any role in making purchasing decision. The second level is a buyer who is satisfied with the purchase of a certain brand, or at least not dissatisfied. At this point there is no need to change the brand. Moreover, the change will not occur if it demands effort. These customers are termed as habitual ones. The third level includes customers who are satisfied with the product or a service. Additionally they have switching costs, which can be cost in time, money or performance risk associated with switching, which contributes to repeating a purchase of the brand. On the fourth level of a pyramid are those who truly like the band. However, on this level it is possible that customers still are not able to evaluate and identify why they like the brand. It is important to stress that at this level there is an emotional feeling towards specific brand, which is why this level is termed as friends of the brand. Finally, the top level, as the one which an institution is aiming for, represents committed customers. As it was already mentioned above, commitment implies that brand is very important to the customer and they considered it as an expression of who they are. The purpose of the pyramid is to provide an insight of different forms of loyalty. Surely, depending on the type of a product or service, competition on the market, profile of the customer, etc., these five levels do not necessarily appear in such clear forms (Aaker, 1991).

There are many factors influencing brand loyalty. One of them is experience, which loyalty is closely tied to, meaning that in order to attain brand loyalty it is necessary to experience the brand. Additionally, awareness, perceived quality and brand association influence brand loyalty. However, the influence can be left out. For instance, very often customers are loyal to a certain brand even though it is widely perceived as bad quality, such as McDonalds, or dislike something which is considered to be of a good quality (Aaker, 1995).

In terms of higher education, loyalty slightly differs from the loyalty towards a certain product. Unlike commercial products and services, loyalty is less an issue in higher education in terms of repeated purchases. Loyalty towards a certain educational institution is expressed through personal recommendations and dropping out rates.

The most important measure of loyalty is satisfaction. In order to achieve satisfaction it is important to understand consumer behavior. In terms of satisfaction, Gibbs and Knapps (2002, p. 107) suggest two critical elements that need to be addressed: information and degree of involvement in the decision making process.

The relevance of information is quite explicit. In terms of higher education institutions, the more information student gathers the more knowledge he or she has about the institution. It is not rare that students make their decisions with incomplete information, which undoubtedly adds to their dissatisfaction. The more informed the consumer is the lesser the chance that he or she will make a wrong decision. Therefore, the most desired consumer from higher education institutions should be an informed student. Luckily, educational institutions themselves can influence this matter to a great extent. The more accessible the information is to the potential or present student, the more likely it is that he will be satisfied with the choice, with the quality provided and with the after experience. The student’s satisfaction and favorable perception of the institution after he or she has completed the studies are of vital importance to the institution and by all means can contribute greatly to the prosperity of the same.

The second critical element suggested is the degree of involvement, which preferably is high when it comes to selection of the Faculty, since above mentioned two elements complement each another. If there is no interest in investing the resources, where the most relevant one is time, it is probable that the decisions made by students will not be appropriate ones.

The groups which influence student’s decisions are friends, alumni, parents, academic and support staff, existing students and course team. Having a positive cooperation with each of these groups creates a virtuous circle and the institution can enjoy benefits for a long period of time. Many believe that satisfaction of students is to be achieved by providing desirable quality, since the quality is considered as the main differentiator between competing businesses (Parasuraman, Zeithaml & Berry, 1988). Correlation between quality perceptions and loyalty can be derived from a claim that perceptions of quality influence students’ post-enrolment word-of-mouth communication, which if favorable, is one important way of students expressing their loyalty towards higher education institution (Athiyaman, 1997; Wetzels, De Ruyter & Van Birgelen, 1998).

In terms of education quality evaluation, there are two approaches to assess education quality: mechanistic and humanistic. The mechanistic approach refers to research conducted by experts and agencies during exercises such as the Research Assessment Exercise and the Quality Assurance Assessment, while the humanistic approach is based on the views of students. The intense discussion on the quality evaluation issues came to the conclusion that it is based on perceptions. Since satisfaction is measured by observing the gap of students’ perceptions and expectations, many institutions measure the quality internally by providing students with different quality and feedback questionnaires in order to asses the quality delivery and determine to what extent their expectations match the actual service. Questions posed to students concern service outcome issues, such as the efficiency of course administration, performance and punctuality of lecturers, and the adequacy of library materials. Moreover, Athiyaman (1997) states eight dimensions for examining university education services, which are emphasis on teaching students well, availability of staff for student consultation, library services, computing facilities, recreational facilities, class sizes, level and difficulty of subject content and student workload. Furthermore, it has to be noted that main limitation in terms of measuring the perception of education quality is that the results from the research may only apply to the time of the study. Limitations exist also when it comes to teaching evaluations. Even though it is a common praxis to offer a chance to students to anonymously evaluate their instructors, the reasons for skepticism exist and are the following (Chonko, Tanner & Davis, 2002, p. 272):

- Bureaucrats with no teaching experience use teaching evaluations.
- Teaching evaluations are too often the only criterion used in evaluating teaching performance.
- Students who do not want to work hard penalize instructors who challenge them.
- Students use teaching evaluations to seek revenge on instructors.
- Students view the teaching evaluation process as a chore and do not take it seriously.
- Faculty members view teaching evaluations as little more than a popularity contest.
- Instructors feel that teaching evaluations are of little value in assessing teacher knowledge.
- Instructors feel that students do not have the knowledge base to provide an objective and accurate evaluation of teaching.

As a consequence of students' dissatisfaction, higher education institutions have to deal with the serious issue of students leaving colleges. The statistic revealed that 26.4 percent of freshmen do not return for the following fall semester. Therefore, it is relevant for institutions to have retention strategies. In these terms it is of the greatest relevance to manage college enrolments, from the very beginning of the student's introduction to the Faculty to the point of graduation. Additionally, to overcoming this problem it is essential to identify causes of dissatisfaction. Earlier studies of this matter have mainly focused on academic ability. However, the results reported that this reasoning can only be applied to half of those who dropped out of college. More recent research showed that relevant factor which might influence students giving up is social adjustment. This research identified as the crucial element of commitment to an institution the feeling of belonging, or the degree of integration to the social environment of the institution. It is believed that institutions should aim at providing students with a feeling of "having a home away from home", which contributes greatly to a sense of belonging in students' minds (Misra & McMahon, 2006). Additionally, it is believed that quality which a student will obtain at the Faculty does not depend solely on the institution, but it depends also on how willing a student is to put as much effort as possible in order to maximize the value of the service which he is being provided with (Halbesleben, Becker & Buckley, 2003). In terms of students' commitment towards higher education institution there are two types which are described as crucial in order to maintain enrollment at the institution. The first one is a commitment to the goal that student sets - obtaining a college degree. The other one is obtaining a college degree at the selected institution. Therefore, a perfect match between student's academic ability, motivation and institution's ability to meet his or her expectations has to exist in order to retain enrolled student. What is generally agreed upon is that satisfaction influences the retention of the students and it is determined by perception of the service performance, in this case Faculties' performance and students' expectations (DeShields, Kara & Kaynak, 2005).

It is believed that treating students as partners is most important in order to optimize students' experience from enrollment to graduation. Person to person approach is of great relevance (DeShields, Kara & Kaynak, 2005). Therefore, the following chapter will discuss the issue of relationship marketing.

2.2 Relationship marketing in higher education branding

De Chernatony and Dall'Olmo Riley (1998) say that the more favorably consumers perceive the brand, the more likely it is that a trusting relationship will grow, further reinforcing positive attitudes, which should consequently enhance the value of the brand to all stakeholders. As previously mentioned, increasing emphasis is put on person to person approach in order to attain students' retention, satisfaction and loyalty. Thus relationship marketing has become a necessary tool in this field.

In marketing it is generally agreed that it costs more to attract a new customer than to keep an existing one. This has put a new emphasis on relationship between producer and consumer, thus developing a concept of relationship marketing. The goal of relationship marketing can be defined as maintaining consumer satisfaction over time. It is supposed to attract, maintain and enhance customer relationship (Stern, 1997, p. 7). It focuses on close interaction with consumer in order to tailor the offerings so that they would fit consumer need in the best possible manner. Additionally, relationship marketing intends to create a dialogue with customers, and create a two way communication thus giving the relationship a chance to develop.

In context of higher education, by developing a strong and positive relationship university can be ensured that not only will it manage to retain students, who are taken here as primary consumers, but it will also achieve a long-term student commitment towards the institution. In the higher education market the increasing importance of relationship marketing can be drawn from the fact that most universities have standardized the programs, which allows students to easily transfer course credits from one institution to another. Students' mobility is eased and consequently, the potential costs of leaving one institution are lowered. This is forcing higher education institutions to create more intimate relationships in order to remain effective and keep their share of the market.

When applying relationship marketing there are several factors that are believed to be influential on creating a strong relationship between a student and a university. First of all there is participation. Participation implies that students who are more involved in different university activities are more likely to be loyal to the university, and it is more likely that beneficial relationship for both parties will be achieved. Those activities can include student bodies, sports, other competitions, etc. As people participate in such activities they identify themselves much more with the institution. Callero (cited in Arnett, German & Hunt, 2003, p. 93) says that through action role identities are realized and validated. Students, by getting involved in many university activities, provide themselves with many positive experiences which will enforce their connection to the university. For example, the membership in a student organization is usually promoted by organizing social event which would make visitors feel positive and encourage them to become a part of such an activity.

Furthermore, reciprocity is something that has proved to be relevant in relationship between students and institution, meaning that the benefits from the relationship ought to be mutual. Therefore, both sides need to have a perception that they will enjoy benefits from establishing close relationship with one another so that relationship marketing would be effective. Furthermore, it is believed that organizational prestige is related positively to organizational identification, and many educational institutions use this to gain advantage. The positional aspect is not the only consideration in the minds of prospective students, but in their decision making process it is considered to be more important than teaching quality since institutional reputation is explicit and easier to measure than teaching quality. Finally, what has been stressed repeatedly as of greatest relevance is satisfaction. Satisfaction is considered to be crucial for those organizations which aim at long term relationships with their customers. With regards to higher education, satisfaction impacts positively on loyalty of students whose relevancy to branding was already mentioned (Tapp, Hicks & Stone, 2004).

2.3 Corporate branding of higher education institutions

Aaker (1995) believes that brand management should start with creation of brand identity, which he defines as a brand image that depicts what the brand stands for and what its promises to the customers are. He claims that an organization's identity is a summation of tangible and intangible elements that make any corporate entity distinct. It is shaped by the actions of corporate founders and leaders, by tradition and the environment. The core of organization represents the mix of employees' values which are expressed in terms of their affinities to corporate, professional, national and other identities. It is manifested through diverse communication channels summarizing product and organizational performance, employee communication and behavior, controlled communication and stakeholder and network discourse. Figure 1 depicts which the main stakeholders that influence and communicate corporate identity are. Since the market of higher education is more competitive than ever higher education institutions have to be aware of their stakeholders. Moreover, universities have to compete with other institutions in order to attract the high-calibre students and academic staff. Such situation is forcing universities to put greater emphasis on corporate image.

Figure 1: Corporate Identity Stakeholders

Source: T. Melewar and S. Akel, The role of corporate identity in the higher education sector, 2005, p. 42.

2.4 Corporate Identity of higher education institutions

The reasoning behind the increased need for universities to attain competitive advantage was previously described. With regards to this, one of the most effective tools to achieve this is strong corporate identity. The identity of a corporation is increasingly recognized as a highly valuable source of competitive advantage. Therefore, it is not surprising that different organizations are intensively working on developing and maintaining their corporate identity. Even so, in literature and praxis there is still no consensus on specific definition of corporate identity. The practitioners emphasize more tangible elements of corporate identity. They pay more attention to visual factors while others are neglected. Olins (cited in Melewar & Jenkins, 2002, p. 77) defined corporate identity as the explicit management of all the ways in which organization presents itself through experiences and perceptions to all the audiences. Additionally, corporate identity is defined as a set of interdependent characteristics that give organization specificity, stability and coherence and thus make it identifiable (Mointgeon & Ramanantsoa, 1997, p. 385). Accordingly, there are various opinions about the elements which corporate identity mix contains.

In the following chapter the corporate identity model by Melewar and Jenkins (2002, p. 81), will be presented. Authors identified the following elements of the corporate identity model:

- Corporate visual identity and corporate communication;
- Employees' behavior;
- Corporate culture;
- Market conditions.

In terms of market conditions of higher education sector it is relevant to mention that higher education in most countries does not see profit as a primary goal, thus, it is a non-profit sector. Consequently, marketing concepts applied to the sector do not function in the same manner as in the case of the business sector. Secondly, we consider higher education as a service, which is why most of the characteristics, as well as limitations, applicable to the marketing of services can be related to higher education too. Additionally, it is relevant that the sector of higher education has multiple clients. Furthermore, market conditions of current higher education market are already depicted in subchapter 1.2, which is why here they will not be elaborated on in more details.

2.4.1 Corporate visual identity in context of universities

Corporate visual identity (hereinafter: CVI) of the organization is determined by (Melewar & Akel, 2005, p. 44):

- Corporate name;
- Symbol and/or logotype;
- Typography;
- Color;
- Slogan.

According to Olins (cited in Melewar & Akel, 2005, p. 44) these components are believed to present the central idea of the organization with impact, brevity and immediacy. There are many examples of logos and symbols which go back to the roots of the organization. It is of crucial importance that correspondence between the CVI design and the organization exists. The story behind the development of CVI has to have a firm link to the authentic elements of the organization, which represents a great communicative value. It serves employees to understand and enhance values of their organization and thus demonstrate that authenticity to the external stakeholders (Balmer, 2001).

Logo is influential factor for any corporate identity and important differentiator of a brand. With effective logo a lot can be achieved. It can create awareness, associations, liking or feelings which can affect loyalty and perceived quality. Additionally, it is known that it is easier to learn, remember and recall visual images than words. Logos communicate associations. In addition to this, they are often an indicator of a brand. When University of Warwick was aiming towards new visual identity to maintain the “strong centre, strong department” structure of the university it allowed departments to retain their own visual identity as long as it was consistent with the style of University of Warwick. Each logo had its own characteristic, but also all of them had to contain a certain commonality which would be recognized as University of Warwick (Melewar & Akel, 2005, p. 44).

Furthermore, in an increasing need for advertising, Universities have found valuable slogans to be highly effective. Some examples of slogans at universities world wide are:

“University for the real world” (Queensland University of Technology), “Why bother with a course that won’t get you a job? We don’t.” (North East Surrey College of Technology), “A university of applied learning” (Leeds Metropolitan University), “After all, it’s your choice.” (Cheltenham and Gloucester College of higher Education), “Preparation for life” (De Montfort University), “With the right education you can do anything” (Napier University) (Gibbs & Knapp, 2002, p. 74). As can be seen the above messages have different contexts. Therefore, there are certain motives in messages that universities generally focus on: those that challenge students to apply, those that emphasize the customer service nature of the university or college, supporting aspirations of the student (“Relax we have everything you need”, Teesside University), those that are offering new, innovative awards (“What would you do with £50 million”, University of Luton), those which stress not education but social life and comfortable atmosphere, and those that put emphasis on the immediate link with employment perspective (“At Nottingham Trent we’re constructing careers”, Nottingham Trent Univerity), etc. (Gibbs & Knapp, 2002, p. 82).

Interesting part of corporate visual identity is color. Many authors state that color has a major impact on associations and perceptions of a certain brand. For example, Warwick University decided to move from the previous black and red as dominant corporate colors to blue and white. This decision was derived from the belief that blue as the dominant corporate color awakens positive associations such as intelligence, communication, trust, efficiency, serenity, duty, logic, coolness, reflection and calm, which all are the attributes that Warwick staff wants to be associated with this institution (Melewar & Akel, 2005, p. 44).

2.4.2 Corporate communication in higher education institutions

According to Melewar and Jenkins (2002, p. 81) corporate communication is an instrument of management by means of which all consciously used forms of internal and external communications are harmonized as effectively and efficiently as possible, so as to create a favorable basis for relationships upon which the company is dependent. It includes all the ways in which organization communicates to its stakeholders. Therefore, all the organization’s messages and activities will be directed to shape stakeholders’ perceptions (Melewar & Karaosmanoglu, 2006, p. 850).

First of all, corporate communication can be divided into controlled and uncontrolled communication. Controlled communication is every communication that management does in order to improve the relationship with stakeholders. It is divided into management, organizational and marketing communications. Of all three, management communication is considered to be the most important. It encompasses communicating the vision and mission of the company in order to establish a favorable image and good reputation amongst its internal and external stakeholders. In terms of university, the external stakeholders are opinion leaders, such as media, government, business, alumni and teachers. Internal stakeholders are students, academic staff and non-academic staff. Furthermore, the greatest attention is given to marketing communication, which mostly refers to marketing mix. Organizational communication has undergone certain degree of fragmentation. Investors' relations and labor relations are part of this communication category. The integration of corporate communication is rather important, however, not as a goal itself but as a means to find a solution to the organizational problems. Additionally, communication towards external stakeholder has a primary role in developing the desired corporate image and in gaining a competitive advantage on the market (Melewar & Jenkins, 2002, p. 81).

Uncontrollable communication refers to the unauthorized and unplanned communication of organization's employees with outsiders. Some examples of uncontrollable communication are whistle-blowers, word-of-mouth, etc. Unexpected situations develop in which behavior is beyond control of an organization. In addition to this, since in today's world organizations are under media scrutiny, it is evident that such uncontrollable communication has a significant role in forming corporate identity. There are ways to overcome unintended consequences of uncontrolled communication. One method of influencing is to ensure that employees are highly motivated and that their objectives and goals are in line with organizational ones. In addition to this, an internal culture of integrity and honesty has to be developed. However, the benefits from uncontrollable communication can also occur, if there is a positive image and if the organization has loyal consumers. In the case of university it is even more important to pay attention to these types of communication since potential students to a great extent collect information about the institution from their family and friends (Melewar & Akel, 2005, p. 48).

Even though there are no uncertainties in terms of communication importance in creating corporate identity, it is relevant to acknowledge that if messages communicated to environment are not supported by organization's performances, the effectiveness of the communication will not be on a desirable level.

Additionally, many authors believe that architecture and location have an impact on corporate visual identity. In terms of location, many companies when changing their location noticed its influence on how organization is perceived and the switch in its identity. It is believed that architecture is an important part of visual identity and that buildings can communicate values of an organization. He finds appropriate and necessary to exploit architecture as a medium of communication. For Universities it is rather hard to ensure that the architecture of campus is consistent with the university values. However, the conveniences of the architecture are surely a great advantage in competitive environment (Melewar & Akel, 2005, p. 48).

2.4.3 Influence of employees' behavior on service quality

Behavior represents another intangible aspect of corporate identity. The important aspects of behavior are management behavior and employee behavior. Management behavior is increasingly influencing the overall perception of the organization and its values. It is considered that people from top management level are role models to the lower levels of the organization which reinforces the importance of management behavior. As was already mentioned, institutions of higher education are increasingly recognizing the need to implement marketing strategies in order to gain advantage on the highly competitive market. Given the increased focus on consumer choice, in order to maintain the quality of a service the relationships between administrative staff and academics and administrative staff and students have become more structured and of greater relevance. In these terms, the task of management behavior at universities more closely resembles a commercial company.

Balmer and Wilson (1998, p. 15) define corporate identity as an organization's unique characteristics which are rooted in the behavior of employees. This aspect of behavior has become increasingly important in the sector of higher education, repeatedly as a consequence of greater social focus on consumer choice. Since universities spotted the need to concentrate more on students' needs and wants when designing courses, the need to review the relationship between the customers and university employees has evolved (Wilson, 2001).

As mentioned earlier, in the context of a university, the identification of the customer and the employee is not an easy task, primarily, because of the already mentioned limitation of identifying student as a customer. Even though the customer oriented approach is increasingly accepted at universities worldwide, the student-university relationship is not a typical customer-employee relationship (Svensson & Wood, 2007). Sirvanci (1996, p. 100) suggests that the university student differs from a "conventional" customer in the sense that the university student does not have full freedom of choice with the product, meaning knowledge or education, responsibility for paying the price and might not even qualify to purchase the product.

Secondly, another challenging aspect of employees' behavior in this area is the relevance of academic staff and administrative staff. Namely, the motives for working at university within these two groups are rather different. Consequently, this could be an area of potential conflict, since each group has its own value system. Therefore, in order to gain loyalty and make students feel that they belong to the institution, universities need to have a wider focus than just teaching and research, since many other factors, administration and its staff being one of them, influence the students' perception about the institution (Melewar & Akel, 2005).

2.4.4 Benefits of understanding corporate culture of higher education institutions

It is believed that culture is essential in the attempt to improve managerial and organizational performance. According to Haggett (cited in Wilson, 2001, p. 354) culture describes patterns of behavior that form a durable template whereby ideas and images can be transferred from one generation to another or from one group to another. It is an idea in the field of organizational studies and management which describes the psychology, attitudes, experiences, beliefs and values of an organization. Strong-culture proponents suggest that the mere presence of a shared system of beliefs, values, and symbols is not sufficient to enhance organizational performance. Rather, they claim that those beliefs and values which represent the core of an organization must be directly aligned with actual policies and practices in order to obtain a high degree of integration and coordination within the organization. Culture is a learned product of group experience and hence exists only where there is a definable group with a certain history. The group does not refer to the whole company, but companies can have multiple cultures. In addition to this, many authors believe that there are two levels of culture, the visible level, and the deeper, invisible level. The visible aspects of organizational culture refer to behavior patterns, the physical and social environment and the written and spoken language used by the group. The deeper level consists of organization's values which represent the goals and concerns which form the organization and what it represents and stands for (Smart & St. John, 1996; Melewar & Akel, 2005).

On the service market in particular, the actions of service staff and the way they communicate the messages with the environment are seen as crucial. Wilson (2001, p. 353) stresses this importance by saying that service transaction is a social process where staff behavior is driven by the inherent beliefs, norms and values existing within the organization. Consequently, the service staff, performing the service, is the face of the organization. In order to use that face effectively a company needs to understand organizational culture.

There are four basic factors considered as most influential on corporate culture. Those are business environment, leadership, management practices and the formal and informal socialization process (Wilson, 2001, p. 359).

To begin with, business environment in which the organization operates determines to a great extent the organizational culture. In terms of environment, society at large, geographical factors as well as the differences between different social levels will influence the commitment, respect for managers, customer attitudes toward service, consequently influencing the corporate culture development. It is believed that second factor, leadership, has the greatest influence when it comes to young organizations. It is believed that a young founder or a leader transfers his or her own set of beliefs and goals to the organization. If the founder's thoughts are not in congruence with his colleagues', it is likely that the creation of organizational culture will lead to conflict, negotiation, compromise and even removal of those who do not fit into the leader's concept. Additionally, management of the organization influences positively or negatively the set of beliefs, attitudes and behavior of employees, thus impacting the culture. In order to gain the best possible understanding of the culture it is relevant to consider how an individual behaves within a group. Therefore, three primary needs are identified: The first one is to feel part of the group by developing a viable role and being recognized by other members of the group. Another aspect is to feel powerful, able to control and have an influence on the organization, while also letting other employees do the same. This can lead to conflict but can also help to formulate the roles of individuals within the group. Finally, there is a need to feel accepted by the group and to achieve the basic security and intimacy that comes with that. Schein (cited in Wilson, 2001, p. 360) draws a parallel of these needs with the basic human needs for security, mastery of the environment (influence and control) and love (acceptance and intimacy). In order to stabilize these needs and make them fit into the same organization, norms and standards arise and, eventually, are consensually accepted and enforced. Inevitably it takes time to build such an atmosphere in the organization. One cannot expect to build mutual understanding among people out of immediate interaction. Through interaction, group members gradually realize which differences they have in comparison to each other and thus, learn how to accommodate them. In the same manner, new members will also attempt to behave in accordance with the established organizational norms.

Smart and John (1996, p. 221) suggest the following types of culture:

- Clan culture;
- Bureaucratic culture;
- Adhocracy culture;
- Market culture.

Firstly, the clan culture is characterized as having high flexibility, individuality, and spontaneity, as well as an internal emphasis, a short-term time frame, and a focus on smoothing activities. In clan cultures, loyalty and tradition are emphasized. Additionally, the primary leadership style is that of a mentor and the strategic approach focuses on human resources and cohesion. This classification of organizational culture emphasizes the internal relations among individuals.

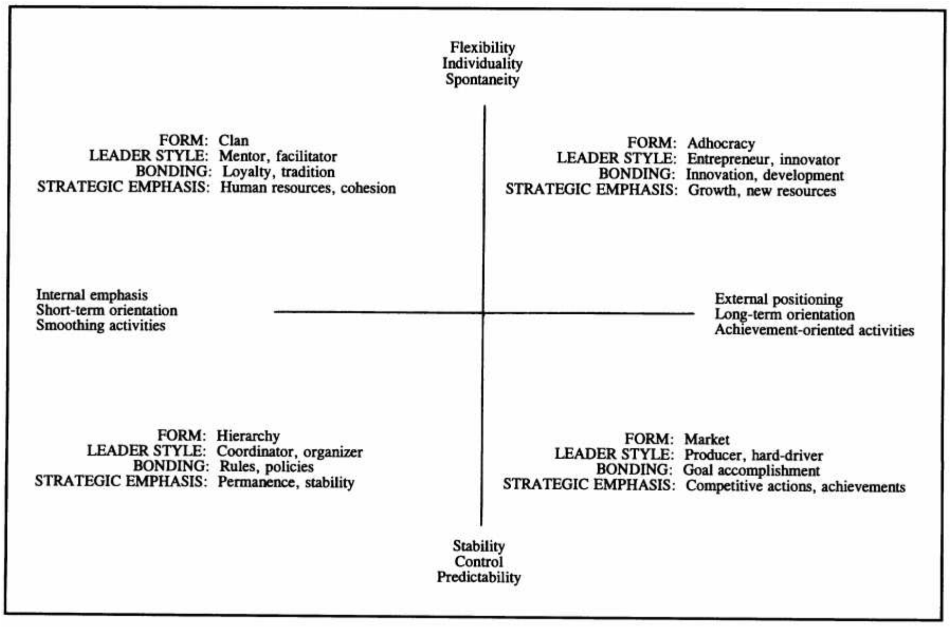
Secondly, the bureaucratic culture has also long been present in the higher education organization literature. Basic distinctions between bureaucratic and clan cultures are that bureaucratic cultures emphasize stability, control and predictability, while in clan culture more emphasis is put on flexibility, individuality and spontaneity. Additionally, bureaucratic cultures have an internal emphasis, a short-term orientation, and an emphasis on smoothing activities. The dominant leadership style in bureaucratic cultures is that of the coordinator or organizer, rules and policies are the primary bonding mechanisms, and the strategic emphasis is on permanence and stability. Moreover, the main characteristic of bureaucratic organizational culture is that standardized rules and procedures come before collegiality. These two images of organizational culture, clan and bureaucracy, coexisted in most colleges and universities until the 1960s.

Furthermore, the adhocracy culture emphasizes flexibility, individuality and spontaneity, but unlike the clan culture, it stresses the importance of external positioning and a long-term time frame. The entrepreneur and innovator leadership styles are prevalent in adhocracy cultures and the bonding mechanisms emphasize innovation and development. This type of corporate culture was accepted and adopted by many colleges in the 1980s which were aiming to adjust to new environmental conditions.

Finally, the market culture also emphasizes external positioning, long-term time frames, and achievement-oriented activities. However, it differs from the adhocracy culture in its assessment of stability, control and predictability. The organization focuses on goal attainment and the strategic emphasis is on competitive actions and achievements.

Figure 2 depicts the main characteristics of each culture described above, and enables clear identification of main differences and similarities within the four types.

Figure 2 : Model of cultural congruence for organization



Source: J. Smart and E. John, Organizational Culture and Effectiveness in Higher Education: A Test of the "Culture Type" and "Strong Culture" Hypotheses, 1996, p. 221.

2.5 Reputation of higher education institutions

“Reputation, reputation, reputation! O! I have lost my reputation. I have lost the immortal part of myself and what remains is bestial.”

William Shakespeare
(cited in Aaker, 1991, p. 34)

Reputation may be seen from different perspectives, thus, depending on the context definitions vary. Some of them see reputation as:

a) assessments that multiple stakeholders make about the company’s ability to fulfill its expectations;
b) a collective system of subjective beliefs among members of a social group;
c) collective beliefs that exist in the organizational field about a firm’s identity and prominence;
d) media visibility and favorability gained by a firm and
e) collective representations shared in the minds of multiple publics about an organization over time.

What can be drawn from all the above definitions is the conclusion that the reputation of an organization refers to perceptions of the organization shared by its multiple constituents over time (Westcott-Allesandri, Yang & Kinsey, 2006, p. 261). Because of its powerful influence on the mindset of a variety of stakeholders reputation has become increasingly important in all sectors.

There are five dimensions of reputation, which are visibility, distinctiveness, transparency, authenticity and consistency (Elving, 2005, p. 109). The first dimension, visibility, is a measure of the prominence of the brand in the minds of customers. This dimension can be measured in terms of exposure in the street, national heritage, media exposure, brand equity, etc. Secondly, distinctiveness represents the unique position of the organization in the minds of customers and other stakeholders. The organization can achieve distinctiveness through strategic alignment, bringing together aspects of its vision and strategy to build the business, through emotionally appealing features, and by attracting attention through the use of startling messages. Authenticity, the third dimension, begins with a process of discovery in order to create a convincingly constructed identity, followed by a process of internal and finally by external expression. There are four major challenges to authenticity: firstly, clarify who you are, secondly develop a broad consensus within the organization thirdly, express your identity clearly, and finally remain true to that identity. Furthermore, research in the field showed that the more transparent the organization operates the more loyal and trustworthy towards the organization the stakeholders will be. Therefore, the fourth dimension of the reputation, transparency, increases trust and reduces uncertainty. Finally, consistency has to exist across every stakeholder group, as well as in company’s communication and initiatives (Elving, 2005).

Similarly to above mentioned definitions of reputation, in the context of higher education institutions Westcott-Alessandri, Yang and Kinsey (2006, p. 261) define reputation as collective representations that the university's multiple constituents - various internal and external constituents, including the media - hold of the university over time.

The concept of reputation is used in order to influence students' choice when selecting higher education institution. Understanding of a reputation concept enables management to use it more effectively in communication strategy which has a major role in positioning of an institution (Nguyen & LeBlanc, 2001, p. 303). Those with whom the institution has the need to communicate are, on the one hand those from internal surrounding such as present students, faculty staff, but on the other hand recruiters and potential applicants. It is relevant to say that all these subjects from internal and external environment interact with each other, thus, consistency is here particularly important. The message which is created for the public can be in the form of publication, press releases, speeches, memos, report and the variety of other channels which schools use to interact with their constituencies.

There are numerous benefits from having a good reputation on the higher education market. For instance, favorable reputation on the foreign market can be beneficial in two ways. On the one hand, it is in institution's interest to attract talented foreign students, while on the other hand by attracting foreign students and enjoying good reputation abroad the institution will reinforce the idea that the educational programs are of a high quality, internationally oriented, acknowledged and appreciated outside the country borders. Additionally, a good reputation among employers will distinguish the higher education institution, resulting in greater respect on the part of the employers, consequently increasing the recruitment prospects of candidates from this higher education institution rather than from other institutions (Martensen & Gronholdt, 2005).

2.6 Phases to follow when branding higher education institution

When managing the brand there are five key questions suggested to be asked in the process of branding (JWT Education, 2006):

- Where are we now?
- Why are we here?
- Where do we want to be?
- How do we get there?
- Are we getting there?

Phases 1 and 2. In this phase the current position of the institution is analyzed. Both external and internal environment need to be researched, and the target audience needs to define their expectations and views related to the brand. In this phase it is relevant to get a clear picture of competitive advantages of the institution and its key strengths, as well as analyzing what the competition is doing and what the situation is like on the market. This phase includes both primary and secondary research and analyses the current position of the university and the reasoning and strategies that put the institution in that position.

Phase 3. The following phase refers to brand development and deciding the direction in which the institution could develop. In this phase it is important to know where an institution should be positioned and define the brand vision. Brand vision is defined as a way to powerfully connect target audiences with organization. It ensures compliance between the future communications and the brand. It is from brand vision that all marketing messages ought to be derived.

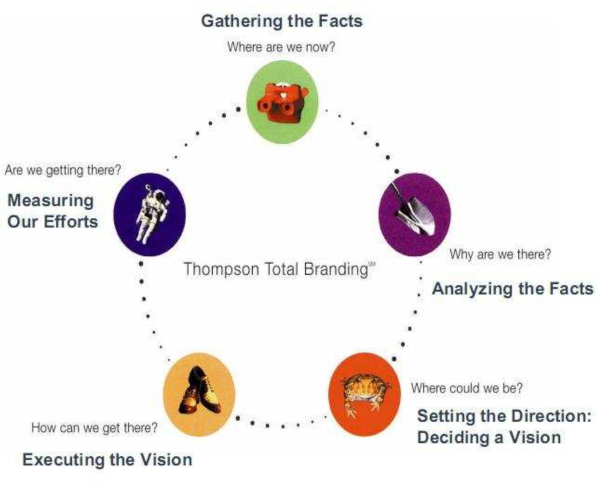
Phase 4. After the vision is set the following task is to define steps that would lead the organization towards the goal. The most important is that the messages that are being sent to target audiences remain consistent with the brand vision and that they are communicated in the best possible manner. It is suggested that several questions be asked in order to achieve the high level of communication. Who are we talking to? What are we talking about? When are they "listening"? What is the right communications mix? What should we spend, where should we spend? How do we measure success? Are they still listening?

If the experience of the brand does not occur, the communication mix did not serve its purpose. Additionally, when experience does happen it is of great relevance that it lives up to the brand promise.

Phase 5. Finally, in this phase of branding the analysis of the effectiveness of all the previous steps needs to be conducted. The main question refers to whether the target audience perceives the brand in the manner that they are suppose to (JWT Education, 2006).

The above outlined phases are depicted in the table below, which represents gradual manner which organization should follow with a view to establishing a strong brand.

Figure 3: Branding cycle



Source: JWT Education, Global branding and its relevance to Universities, 2006.

3 ANALYSIS OF MARKETING AND BRANDING AT THE UNIVERSITY OF NOVI SAD

3.1 Higher education in Serbia

In each part of the world the system of education is evolving and varying in its forms. All around the world education has gone through different stages and is constantly adapting and creating new environments for gaining knowledge. The pace, naturally, is not the same, so what was the situation like in Serbia before and what is it like at present?

Period from 1990 to 2000 was a very dark period for the country as well as for education. As a consequence of the break-up of Yugoslavia the country found itself under political and economic sanctions. Federal Republic of Yugoslavia, which at the time consisted of only two republics, Serbia and Montenegro was cut off from the world and was struggling on every level. Even though the structure of higher education was not changed, the conditions were significantly different. Due to a lack of funding, the quality of higher education deteriorated, availability of books and materials was limited, and students struggled to complete their studies. Government expenditure on higher education was cut in half, which put higher education institutions in the position where they had problems with heating, availability of teachers, low salaries and above all low morale (Smirnov, 2008). Such a situation led young people to feel that they have no future and no choice but to leave the country. The exact data on this matter are not available due to the reasoning behind these migrations and situation in which countries were. However, there are certain estimates based on the research conducted by the Faculty of Philosophy, University of Belgrade, which claim that in 90s, 5 percent of the entire country's population emigrated for a longer period of time or for good. Among them the vast majority, 91 percent, were people younger than 40 years old, mostly students and highly educated people. During this period of time experts and researchers claim that Serbia suffered the greatest loss of its best potential workforce (Beogradski fond za političku izuzetnost, 2010).

Surely, ten years of isolation and sanctions had a profound impact on higher education. After 5th October 2000, when democratic forces won the elections, new reforms were about to be embraced in higher education as in every other sector of the country. With the new Government, in February 2001, new mission from The Ministry of Education and Sports with regard to higher education in Serbia was set: "Establishment of modern higher education system in accordance with the Bologna process" (Ministry of Education and Sport of the Republic of Serbia, 2003).

Within the system the main defined objectives were (Ministry of Education and Sport of the Republic of Serbia, 2003, p. 1):

- Increase the efficiency of the higher education system in terms of the drop-out rate and the length of studies.

- Harmonize the higher education system with the European tendencies, in particular through the introduction of quality control mechanisms with regard to staff and teaching.
- Establish the relevance of the programs with respect to the national needs and market demand. Promotion of multidisciplinary and interdisciplinary programs leading towards the new professions created in the technological era.
- Promote the concept of applied studies, which provide skills and competencies required by the labor market.
- Incorporate students as partners in the educational process.
- Support of the transition process especially in economic recovery.
- Promotion of the value of European integration.

In order to achieve the defined goals a number of activities were started. They are broadly divided into two categories (Centar za obrazovne politike, 2007):

- The analysis of the European Higher Education system, with the particular emphasis on the changes that took place during the nineties, while Serbia was under sanctions;
- The analysis of the current state of the Serbian Higher Education system.

Since the year 2000, many conferences in Serbia have been organized. They were dedicated to the general higher education topics, while a few had specific focus on vocational schools, privatization, recognition, ECTS and diploma supplement and so on. Simultaneously, the draft of the new Law on Universities was prepared. The purpose of the Law was to minimize the negative effects of the previous Law in 1998, which had cancelled all autonomy of the University.

The University Law from 2002 together with the Decree on the financing of university activities, offered provisions for (Ministry of Education and Sport of the Republic of Serbia, 2003, p. 3):

- Two types of undergraduate degrees (3 to 6 years);
- The autonomy to define programs and courses (approved at the university level);
- The introduction of ECTS (unspecified in details, not mandatory);
- Governance and management autonomy (17 percent of the members of the Council appointed by the Government).

Financial autonomy (to some extent):

- Bulk sum for salaries (distribution determined by the faculty);
- Bulk sum for operating costs and investments (distribution determined by the faculty); up to the percentage of the state's participation in the faculty's turnover;
- Ownership over the acquisitions gained from the faculty's income.

Students' participation:

- 17 percent of the members of the faculty Council delegated by students;
- Student parliament unspecified in details;
- Students' opinion in the re-election and promotion of professors.

Universities’ and Faculties’ statutes from 2002 revealed all the differences in present state of the institutions but also highlighted their willingness to implement the reforms. To a certain extent, this Law was aiming at overcoming the differences by moving the power from faculty towards university level.

At the Ministerial Conference in Bergen in January 2005, Serbian Higher education progress was considered to be poor. The higher education in Serbia was still struggling with the consequences of years of isolation such as outdated teaching methods and equipment, misbalance of education and labor market needs, and last but not least low efficiency of studies. Universities, in order to overcome the low quality of education, added an increasing number of subjects to the curricula. As a result of past events and above mentioned activities efficiency across universities was not on high level (see Table 1).

Table 1: Average length of studies per university

University	Average length of studies
University in Belgrade	7.97
University of Arts in Belgrade	6.97
University in Novi Sad	6.95
University in Niš	7.12
University in Kragujevac	7.58
University in Priština	8.30
Total	7.48

Source: Ministry of Education and Sport of the Republic of Serbia, National Reports 2004-2005, p. 5.

Furthermore, it is estimated that drop out rate from 1994 to 2004 was 45 percent, meaning that only 55 percent of students completed their studies. Additionally, in the same period the average length of studies depending on the number of years for particular studying program was the following (Centar za obrazovne politike, 2010b):

- Non-university studies approximately 4.5 years;
- Four year university studies approximately 6.9 years;
- Five year university studies approximately 7.6 years;
- Six year university studies approximately 7.7 years.

Moreover, for 1994 to 2004, the percentage of students who completed their studies on time was the following (Centar za obrazovne politike, 2010b):

- Four year university studies approximately 8 percent;

- Five year university studies approximately 7 percent;
- Six year university studies approximately 13 percent.

Such unfavorable situation was causing greater costs to the Government, since the students' were postponing their employment and contribution to the economy.

Additional problem was the problem of recognition of diplomas and certificates. This process was left entirely to the faculty that seems to be the closest to the disciplines which the degree stands for. The usual practice relied mostly upon counting the courses and years of studies and not looking for substantial differences. Therefore, it was common practice that degrees issued by the same foreign university are accepted by one while rejected by some other faculty in Serbia.

Even though preparation of the new Higher Education Law, which was necessary in order to implement Bologna Declaration, started the same year Bologna Declaration was signed in 2003, it was only in August 2005 that the Law was passed. The Law gives a legal basis for full implementation of the Bologna Declaration and the Lisbon Convention.

The issues from external institutional reports, which were in 2002 listed as major weaknesses of the existing academic system, were also the problems which the new Law from 2005 was aiming to resolve (Ministry of Education and Sport of the Republic of Serbia, 2003, p. 14):

- Outdated and highly repetitive curricula, outdated teaching methodology, together with the outdated and internationally irrelevant literature;
- Highly structured mono-disciplinary programs that cannot meet the market needs. Focus is placed on the theory, with practical skills and knowledge being neglected;
- Long and rather difficult undergraduate studies, high dropout rate, lengthy actual study period;
- Too many teaching hours, with no room for alternatives to traditional ex-cathedra teaching, large number of exams and weak and poorly organized post-graduate studies;
- Non-existing quality control system and program and institution accreditation.

After the implementation of the new law from August 2005, the conditions on the higher education market in Serbia were prepared for implementation of the Bologna Process. The Bologna Process has been formally introduced from the academic year 2006/2007, when the ECTS system has been fully implemented in all Higher Education institutions. Apart from ECTS system, greater implementation of new pedagogical methods has remained a priority. The three-cycle structure has been established in all higher education university institutions and the diploma supplement for the educational programs of the first and the second cycle has been issued.

In addition to this, quality assurance for higher education in Serbia has been developed significantly, which has been useful for both stimulating and guiding educational reforms

(Bailey, Chow & Haddad, 1999). Within accreditation framework, all higher education institutions are obliged to develop internal quality assurance systems, which is a condition for programs to be assessed to accreditation process. Therefore, a self-assessment report is an obligatory document in the accreditation file of every higher education institution. Students are included in self-assessment process and preparation of the report. External quality assurance system operates at national level, meaning that only higher education institutions which have had their studying programs accredited can award bachelor, master and PhD degrees to their students (Tempus office Serbia, 2009). So far all vocational schools and state universities' programs have been accredited with the exception of Academies of Arts whose accreditation is still being processed (Pušonjić, 2010).

Since certain problems have been noticed, minor changes to the Law from 2005 have been introduced. Firstly, students were dissatisfied with the law in terms of the ECTS points which were necessary in order to maintain state-funding of students, which at the time was 60 ECTS. Therefore, in 2008 the changes regarding this issue were introduced, where for the students who were financed by government the number of 42 ECTS was enough. However, the budget was limited which meant that only 20 percent of best students can still claim state funding, while others have to transfer to self-financing regime (Studentski svet, 2008). In June 2010, the latest changes were implemented, where the limit for state-funded student scholarships is attainment of 48 ECTS (B92, 2010). Furthermore, in order to increase student and staff mobility, several actions have been undertaken, so that all major universities participate in mobility programs. Tempus, Erasmus Mundus and Erasmus Mundus External Windows programs have improved greatly the student and staff mobility.

At the moment Serbia has six state and several private universities mostly located in Belgrade.

3.2 Higher education in Novi Sad

University of Novi Sad is the second oldest and biggest university in the country. It was founded on 28th June 1960, and today comprises of 14 faculties located in the four major towns of the Autonomous Province of Vojvodina: Novi Sad, Subotica, Zrenjanin, and Sombor. The University of Novi Sad as contemporary educational, scientific and art institution based on the principles of autonomy, integrity of academic environment, respect of academic moral values and responsibility for its future actions plays an important role in the social life of people from Novi Sad, and Serbia. Higher education at the University is focused on scientific research activities, as well as its open-mindedness to new ideas and different modes of cooperation on the national and international level (Tempus project MOREM, 2009).

Furthermore, intensive and synchronized application of the basic principles of the European Higher Education Area and the European Research Area has become recognized in the national higher education area as the University's main objective, as well as its results in the field of academic reform and diverse high quality undergraduate, graduate and doctoral programmes.

Table 2: Facts and figures of the University of Novi Sad

Total number of students	46,857
Bachelor studies	43,440
Master studies	2,378
Specialist studies	85
Doctoral studies	954

Source: University of Novi Sad Brochure, 2009.

The University of Novi Sad, as the entire higher education in Serbia, is reforming itself along the lines of the Bologna recommendations. At the very beginning of the process of reforms the University of Novi Sad was in the situation where it had no systematic approach to quality. Decisions were based on internal criteria. Additionally, very few professors had any international experience in teaching and research and their mobility was almost non-existent. Another matter of quality concerns the courses. At the beginning of the Bologna Declaration implementation process, they were very rigid and traditional. The professors decided what they were going to teach and what students needed to know. The external evaluation was missing.

As already mentioned, even though it was signed in 2003, the Bologna process was actually introduced in 2006/2007, thus, at the University of Novi Sad, on-going process of transformation on institutional and system level was introduced. It encompassed the following (Tempus project MOREM, 2009, p. 16):

- Complete reconstruction of the national system of studies (Three tier system);
- Reform curricula, as a consequence of learning outcomes and ECTS as obligatory, promoting new teaching paradigm; student evaluation introduced as standard procedure;
- Diploma Supplement is introduced as obligatory. New professional and academic titles defined by the National Council of Higher Education, outlining the consistent and recognizable approach on the system level. National Qualification Framework has been outlined;
- International cooperation and mobility of students and staff within European Framework;
- Quality assurance system and accreditation;
- Transparency - one of the main principles of the University procedures and activities towards increased responsibility;
- Governance on the level of higher education system;
- Governance on the institutional level.

There are some additional new policies which are introduced at University of Novi Sad and are not necessarily regulated by the Law or Statutes, which encourage Faculties to make courses last one semester instead of two which used to be the most common practice. By doing this, students have a smaller number of courses in each semester and passing exams is made easier, and thus shortening the length of their study. This will also contribute to student mobility in the region and in a wider academic environment.

Departments and Faculties are obliged to reform and modernize curricula, but have freedom when deciding on methods of curricula interpretation (University of Novi Sad, 2009).

3.2.1 International cooperation and scientific and research projects at the University

The University of Novi Sad has been for many years intensively developing international cooperation with universities and other institutions in the area of higher education and scientific and research activities from Europe and the world. It is the only representative from Serbia in the European student mobility programme Campus Europae realized under the auspices of European University Foundation with the seat in Luxembourg. In addition to this, it participates in the mobility program for students, academic and non-academic staff, Basileus, within the Erasmus Mundus External Cooperation Window programme.

Within the TEMPUS programme, the realization of nine projects started in 2008, with 11 projects more in 2009. The Univerisity of Novi Sad is a grant holder in two TEMPUS projects. Those are “Conversion Courses for Unemployed University Graduates in Serbia” and “Governance and Management Reform in Higher Education in Serbia”. Furthermore, 15 TEMPUS projects at the University started before 2008 and they are in their final phase of realization. There are 505 on-going scientific, research and other projects at the University of Novi Sad. The greatest number of scientific and research projects (282) are realized within the program of support and development of science of the Ministry for Science and Technological Development of the Republic of Serbia, and 78 programmes are realized thanks to the support of the Provincial Secretariat for Science and Technological Development of the Autonomous Province of Vojvodina. All Faculties and research and developmental institutes of the University of Novi Sad participate in scientific and research activities which represent integrative parts of the University’s activities. Thus 60 percent of current projects are realized at the three faculties with the most diversified structure of scientific areas in the fields of engineering and chemical engineering and natural sciences and mathematics: Faculty of Sciences (127 projects), Faculty of Technical Sciences (90 projects) and Faculty of Agriculture (80 projects). Apart from the programmes mentioned above, the University develops its international activities also within the programme of the World University Service Austria and academic cooperation programme with the universities from the United States of America - FORECAST (University of Novi Sad, 2009).

3.2.2 PEST analysis of higher education in Serbia and Novi Sad

Political environment - As already mentioned the major switch in higher education in Serbia happened in 2003. However, not before 2005 when the Law of Higher Education was introduced, did Serbian Universities formally introduce the process of Bologna Declaration. Therefore, since 2006 studies have been divided into three parts, bachelor, master and doctoral. Additional specificity that this Law brought is regulation of the vocational studies, which was not the case earlier. Furthermore, from student's perspective it is relevant to mention the Student's parliament, as a body which stands for and protects students' rights. Since it represents a part of Bologna Declaration process, the first initiatives in Serbia to form such an organization came in 2001. The University Law from 2002 was the first one to recognize the Students' Parliament as a category, which was further regulated by the Law on Higher Education in 2005. However, Students' Parliament truly started its operations only in 2007 (Studentski svet, 2008; Ministry of Education and Sport of the Republic of Serbia, 2003).

Even though the Serbian Government is democratic, there are still rather significant opposition parties which are slowing the process of European Union integrations. On the other hand, as of December 2009 Serbian citizens can freely travel to countries of European Union, which are part of Schengen agreement. This is significant since the data from 2008 claim that only 11.24 percent of citizens have passports. Data for present are not available. However, it can be assumed that the number has slightly increased. Not only did the years of isolation created the situation in which young people do not want to travel, but also they do not see the reason to leave the country, or invest in their education in this manner. The European Union, by opening its borders, has given a chance to Serbia and its young people to learn and see different cultures, develop tolerance and mutual understanding. This all is connected with universities which should encourage their students to exploit exchange programs as much as possible. However, it is vital to stress that easier mobility can pose an opportunity and a threat depending on the scenario. On the one hand, if we take into consideration that Serbia is transitional economy and that the brain drain was drastic in past decades, then the negative aspect of students and staff leaving the country for the purpose of further development must not be neglected. If they are offered better conditions abroad, which is likely to happen, such situation poses a serious threat that brain drain will continue in the future. Additionally, as demographic situation was already mentioned before, this matter can also be observed from that perspective. The abolishment of visas is threatening to change demographic trends which can turn to be unfavorable for both Serbia and other countries to which people are migrating. On the other hand, exchanging ideas and gathering knowledge from more developed countries and coming back to Serbia is the beneficial outcome of the increased mobility, which is why in Table 3 it is written under both opportunity and threat columns.

Since University of Novi Sad is aligning itself with the process of Bologna Declaration, Law on Higher Education defines the main University managing, academic and executive activities. The Statute of the higher education institution determines its bodies, in accordance with the Law (Tempus project MOREM, 2009):

- Administrative body - Council;
- Professional bodies - Senate;
- Executive bodies - Rector/Deans;
- The Expert Councils for interdisciplinary and multidisciplinary studies and commissions and boards for specific questions concerning educational and scientific activity;
- Students' Parliament.

Economic environment - On the higher education market in 2005, state funding was 0.55 percent of Gross Domestic Product (hereinafter: GDP). In year 2008 growth is acknowledged with funding of 0.75 percent of GDP towards higher education. Due to the crisis in the first quarter of 2009 this figure fell to 0.6 percent of GDP. In addition to this, in the same year one of the measures to fight crisis was to take 40 percent of the income of budgetary users, among which are higher education institutions, which consequently brought the level of funding to such a small amount. In 2009 overall state funding amounted to 0.72 percent of GDP. However it is estimated that for the first quarter of 2010 this figure fell back to only 0.67 percent. As Serbia aims to become a part of European Union it is useful to compare the situation with European Union countries. The percentage of government funding varies from 0.8 percent of GDP, which is the case in Bulgaria and Romania, to 2.4 percent of GDP in Denmark. The average in European Union is 1.2 percent of GDP. Thus, Serbia has to aim towards higher funding of higher education since currently it is below the European Union minimum. Moreover, it is important for the country to recognize the social importance of higher education for the general well being of the country and to strive to achieve greater investments for this market (Centar za obrazovne politike, 2010a).

Generally speaking, Bologna process brought greater independence to institutions of higher education. However, greater independence from government administration also meant greater independence in financing terms. Every legal entity decides on a financial plan for each school year, which has to be approved. Afterwards, the state allocates funding in accordance with the budget and the approved annual financial plans of higher education institutions. The system of financing is regulated by the Law on Higher Education. For each faculty there is a quota for the number of students who are financed from the budget - budget-funded students, as well as the number of students who are self-financing. Depending on the faculty's real costs for carrying out the teaching process, different amounts per student are given to these entities. The allocation of the money is regulated by the annual financial plan and the budget law, and the spending has to be strictly in accordance with the previously defined purpose, otherwise the institution will bear consequences. In terms of students financing it is relevant to mention that the system of financing where student and government share the costs of studying has been abolished. The basic salary cost is defined by the State. However each legal entity can increase the individual salary level at state-funded institutions by 30 percent. The regulations are the same for each state university (Tempus project MOREM, 2009).

Social environment - The research data from 2006 shows that only 10 percent of pupil in each generation go into higher education, while in other transitional economies that number is 20 and in developed countries the number amounts to 40 percent (Ministry of Education and Sport of the Republic of Serbia, 2005, p. 5) One of the reasons for such a low number of students is poor standard of living. Families do not have money to finance the studies, or sometimes even studying material. In addition to this unemployment rate is rather high, which is why pupils in high schools or secondary schools either have limited choice, meaning that they have to think what their smartest choice is, or they simply cannot afford to study. Thus, they enroll in secondary schools which to some extent ensure employment, since on the labor market there is greater demand for professions that do not require university education.

Another important aspect, in terms of social indicators which are specific for the environment in which University of Novi Sad is operating, is the multi-cultural environment of Vojvodina and Novi Sad. The majority are Serbs, with 65.05 percent. The remainder is made up of minorities which are the following: Hungarians (14.28 percent), Slovaks (2.79 percent), Croats (2.78 percent), Montenegrins (1.75 percent), Romanians (1.5 percent) and Roma (1.43 percent). There are other minorities in Vojvodina, such as Russians, Macedonians, Ukrainians, Muslims, Germans, Slovenes, Sokci, Albanians, Bulgarians, Checks and others, which individually account for less than one percent of Vojvodina population. Over the past decade the educational level of population in Vojvodina has increased. Additionally, the percentage of people involved in higher education aged from 20 to 24 make 24 percent of citizens of Vojvodina. Another interesting fact is that out of all University students in Vojvodina, women make up 54 percent (Vlada Autonomne Pokrajine Vojvodine, 2010).

Environment in Vojvodina as such is favorable from different perspectives. On the one hand, specific spirit and mentality of people is what could attract students from other countries to spend a semester or two in Novi Sad, and learn about Serbian culture. On the other hand, growing up in multicultural environment has given people from Vojvodina the urge to explore, learn and travel. It has given them curiosity to continue to meet different people, exchange ideas and gain knowledge from other universities world wide, but then to return and try to implement that knowledge in their own country. It is clear from society perspective why it is important to exchange ideas with other parts of the world.

Technological environment - Technology can bring all kinds of benefits, in both effective and efficient terms. However, the pace of technological development is so fast that it is nearly impossible for universities to follow, especially for the universities in countries in transition. As well as in other countries computer and internet usage in Serbia has grown over the past few years. In 2010 it was estimated that 50.4 percent of households are in possession of a computer, which represented a growth of 3.6 percent in comparison to previous year. Additionally, internet usage has also been increased. However, still a lot of households do not have internet access. The national percentage of Internet usage for 2010 is 39 percent, while in Vojvodina the percentage is 41.8 percent. Additionally, data shows that almost all students use internet - 99.2 percent (Republički zavod za statistiku Republike Srbije, 2010).

Based on the external analysis of the environment the following opportunities and threats emerge for University of Novi Sad in general and in comparison to other universities in the country:

Table 3: Opportunities and Threats for University of Novi Sad

Opportunities	Threats
• Introduction of an integrated information system at the University level which would open new communication channels • Funds for international cooperation available at the level of Autonomous Province of Vojvodina • Easier mobility of students and staff with the abolishment of visas • General orientation towards upholding Bologna principles and increasing mobility • Attractiveness of Vojvodina as a multi cultural environment • Increased usage of modern technology	• Political and economic uncertainties of the country in terms of EU integrations • Still significant brain drain • Financial difficulties of the country • Insufficient communication with labor market • Consequences of isolation in terms of mind set • Easier mobility of students and staff with the abolishment of visas

3.2.3 Students of University of Novi Sad

The overall number of students enrolled at the Faculty for school year 2009/2010 is 46,857. The number of students by Faculty and by study program is decided by the University. The decision has to be in accordance with accreditation standards. In the academic 2009/2010, 9,110 students enrolled in the first year of bachelor studies. In the academic 2008/2009, 536 students completed their master studies, 334 students attained former master degrees and 128 students completed specialist studies.

In the academic 2009, 159 candidates were awarded with the academic title of PhD, while altogether 2,975 students attained this title from the University foundation by the end of 2009.

There are numerous general and professional student organizations at the University. Additionally, in 2005, according to the Law on Higher Education, new University body - Student Parliament was established as a representative body of students which is formed both at the university and the faculty level. Apart from the general student organizations such as Students' Union, Novi Sad Association of Disabled Students and other organizations, there are local branches of many international student professional organizations such as ELSA, AIESEC, BEST, EESTEC, AEGEE, IAAS, IAESTE, etc. that are active at the University.

With the new system of studying many benefits arose. The most appealing one to students is the possibility of mobility. Students are able to visit other universities and improve their knowledge and skills there. Especially since the 19th December 2009 when the visa regime was abolished, the mobility of students has become a real and rather certain opportunity (Tempus project MOREM, 2009).

3.2.4 University and its facilities

The University of Novi Sad is situated on the University campus (totals 259,807 square meters) on the left bank of the Danube river near Novi Sad's city centre. In addition to the administrative building, the University campus comprises the Faculties, the Student centre with two Student Dormitories and the Central Student Cafeteria, an Apartment Hotel for temporary accommodation of young teaching fellows and research assistants, the Student Health Centre and the Centre for Physical Education. There are also many other scientific, professional, cultural, information, sports and similar student organizations. The student square on the University campus adds to the attractive surroundings (Tempus project MOREM, 2009).

3.2.5 University and labor market

The European Training Foundation, which is the European Union agency which supports education and training in countries surrounding the European Union, in their report from 2006 gave an explanation and suggestions to Serbia on how it can manage the youth unemployment. It is stated that one in three young Serbs take more than two years to get their first job after finishing school. In terms of higher education, they put an emphasis on the importance of the good relationship between labor market and higher education, which is mentioned previously as a major problem for higher education institutions in general.

In addition to this, according to the research conducted in 2006 by the above mentioned agency, three out of four young people in Serbia are of the opinion that they have jobs for which they believe they are over qualified. In other words the job is suited for people with a lower level of education. The report shows that post-secondary or college graduates are more likely to have jobs requiring a lower level of education, with just 40 percent appearing to be well matched (Arandarenko, 2007). Therefore, high unemployment figures in Serbia are not surprising. Hence, this situation has further implication in terms of nation's well being, since very often such mismatches have psychological consequences on employees.

University of Novi Sad has taken steps in order to overcome the gap between them and labor market. One way to ease students' job-finding experience is through the organizational unit of University of Novi Sad, Center for Career Development and Student Counseling. University of Novi Sad set up the Center for Career Development and Student Counseling in order to connect academic and business community as well as improving the level of employability of its students.

The mission defined by the Centre is to provide information related to employment and career development, to advise students on the choice of their potential occupation, as well as facilitating the process of gaining work experience and practical knowledge, which mostly is left out from their regular studies.

Furthermore, the Centre also provides support in developing capabilities, knowledge which is essential for employment, as well as ensuring that reliable information about possibilities of additional education and job offers become more accessible to the students. In addition to this, the Centre connects students with employers via organizing professional practices, trainings in companies and company presentations. Another aspect of this organization is counseling of students who have uncertainties about their future career selection and development.

The Centre also aims to provide a wide range of services to the employers. It is not included explicitly into the students' recruitment, but it seeks to provide both sides with clear information on opportunities and possibilities from which both employers and students will benefit (Centar za razvoj karijere i savetovanje studenata Novi Sad, 2010).

3.2.6 University and personnel

In order to provide data regarding University staff and its structure the numbers of all employees are given in the table below. Student-teacher ratio is calculated from the data in the table, and above given data on number of students. Therefore, if students from all levels, which are bachelor, specialization, master and PhD, and entire academic staff, are included, the ratio is 16 to 1. However, if we take only professors, the ratio worsens to 27 to 1. The situation is even less favorable if we calculate students' associates. In order to provide the most accurate ratio, bachelor and master students are taken since they most frequently use services of associates, while specialization students and PhD students are extracted. The ratio calculated is 40 to 1. Even though it seems unfavorable for students and associates to work under such circumstances, one has to bear in mind that each Faculty requires a different ratio and that it is possible that the situation is not that critical. For Faculty of Sciences the ratio will be provided in the following chapter.

Table 4: University of Novi Sad *Employees' f*acts and figures in 2009/2010

Staff at the University	4,261
Teaching staff, associates and research staff - total	2,956
Teaching Staff	1,690
Full Professors	768
Associate Professors	398
Assistant Professors	477
Senior Lecturers	16
Lecturers	29
Lecturers in applied studies	2
Associates	1,121
Teaching associates (those who have finished bachelor or master studies and just started working in teaching)	114
Assistants	966
Senior lectors	24
Lectors	17
Research Staff (Scientific and Research Staff)	206
Scientific advisors	5
Senior scientific fellow	7
Scientific fellows	11
Research fellows	70
Junior researchers	113
Administrative and other staff - total	1,244

Source: University of Novi Sad Brochure, 2009.

The University decides on promotion of academic staff, in accordance with the Law, university procedures and legal acts. On the other hand employment is left to every legal entity, meaning each faculty individually may decide on who they will employ. Lecturers have freedom when it comes to teaching and deciding on how they are going to interpret the subject matter. However, University monitors the advancement of professorial staff and takes care of their further specialization. Furthermore, University is part of awarding doctorate degrees procedure and it also takes measures in order to improve financial situation of professorial and scientific staff. Additionally, it is important to stress that University pays special attention to young lecturers and researchers. It is relevant that there are many young researchers, teaching associates and assistants. This proves that University is aware of the importance of investments in young teaching and research staff. The attention mainly refers to providing excellent conditions for their work and development. Therefore, there are two halls of residence which are specially built for the purpose of accommodating young academic staff and their families (Tempus project MOREM, 2009).

3.2.7 SWOT analysis for University of Novi Sad

SWOT analysis has been done based on the current situation in Serbia and its higher education. Additionally, in accordance with University characteristics relevant strengths and weaknesses emerged. University of Novi Sad is compared to its main competitors, which are firstly, other state universities and secondly universities from the region.

Table 5: Strengths and weaknesses of the University of Novi Sad

Strengths	Weaknesses
• Reform oriented university, open for international cooperation • Motivated, ambitious and skilled employees • Young and qualified staff • Students motivated to learn and improve and exchange their skills and knowledge with foreign students and on foreign institutions • Center for Career Development and advising of students • Uniqueness of campus of Novi Sad in comparison to other universities in the country	• Frequently changing legal acts • The amount of international cooperation is not equal across the Faculties • Slower purchase of modern technologies for teaching • Absence of a central university building • Recognition procedures are not equally regulated at faculties across the University • Absence of necessary level of integration • Low level of awareness of Center for Career Development

4 ANALYSIS OF MARKETING AND BRANDING AT FACULTY OF SCIENCES

4.1 General data about the faculty of Sciences

Faculty of Sciences is an educational and scientific institution at the University of Novi Sad. It provides teaching and research in Biology, Ecology, Chemistry, Physics, Mathematics, Informatics, Geography, Tourism, and Environmental Protection at five departments:

- Department of Biology and Ecology;
- Department of Physics;
- Department of Geography, Tourism and Hotel Management;
- Department of Chemistry;

- Department of Mathematics and Informatics.

The Faculty was founded in 1969. Presently, the Faculty offers education in over 42 majors, as well as postgraduate studies in Biology, Ecology, Environmental Protection, Physics, Astronomy, Geography, Tourism, Hotel Management, Chemistry, Biochemistry, Mathematics, and Informatics. There are 5,775 students, from which 5,365 are on bachelor studies, 311 students on master studies and 108 on doctoral studies. Every school year, around 800 new students enroll at bachelor programs of the Faculty of Sciences. Total number of employees is 481, out of which 295 are teaching staff, associates and research staff.

Facilities of the Faculty consist of 65 theaters/teaching rooms and 71 laboratories, occupying a total area of 21,928 m^2. In well-equipped research laboratories lots of research is done, including the ones on international level. Each department has its own library with a wide variety of books and several hundreds of journals. Faculty of Sciences is the leading institution at the University of Novi Sad in terms of international projects and research where 127 of these activities are realized (Faculty of Sciences, 2010; University of Novi Sad, 2009).

4.2 The Faculty of Sciences' marketing beginnings

The importance of Faculty of Science comes from the fact that it was the first Faculty that started marketing activities within the University of Novi Sad. Such proactive thinking resulted from the specificity of educational profiles that Faculty of Sciences produce. Namely, a large number of students are studying for teaching qualifications in fields of Biology and Ecology, Physics, Geography, Chemistry, Mathematics and Informatics. Teaching as future profession is not one of the most popular ones but on the market there is a lot of demand for this profile, which is one of the reasons why Faculty of Sciences believes that it has a lot to offer to students.

Additionally, the competition on the market is rather strong since there are some alternatives within University of Novi Sad, as well as competition in other Universities from the country and the region. Therefore, this is another reason why Faculty of Sciences aims to maintain and to a certain extent increase the enrollments at the Faculty.

From the above described reasoning, in 2006 the Faculty started with more persistent marketing activities in order to attract students, which were initiated by former dean, professor Miroslav Veskovic, and some younger employees. It is relevant to mention that while a local agency was partially responsible for the marketing activities, Faculty employees were in charge of promotion. At the moment the Faculty has two persons who are in charge of marketing activities. One of them is public relations employee, while the other one is assigned to, in cooperation with quality committee, conduct all relevant questionnaires and plan marketing activities. At each Department there are one or two younger persons who do not have marketing qualifications but are current academic staff from the Faculty who are assigned additional marketing tasks. However, the marketing unit is still not defined in the Faculty's statute. Even though the funding of promotional activities is defined in advance, the activities and strategies are designed ad hoc. In Appendix A there are detailed expenses for media activities of the Faculty of Sciences in 2008.

From 2006 the Faculty's focus was on increasing its promotional activities. The aim was to represent Faculty as a modern, interdisciplinary, ambitious, internationally oriented and socially responsible institution. Since the activities initiated in 2006, the Faculty has taken part in two national education fairs, in Novi Sad and Belgrade. Additionally, the Faculty has decided to set billboards and to use radio, as low budget means of advertising. Moreover, different slogans were launched: "theory, experiment, praxis", "natural choice for 40 years", "tell me what you like, I'll tell you who you are", etc. Among additional promotional material, Faculty had bags, fliers, billboards, labels, etc. All parts of visual identity were adapted to the personality of 19 year old (see Appendix B).

Furthermore, Faculty has tried to provide potential students with all the information they might need in order to make the best possible decision which would fit in best possible manner to their profile. With regards to this, they have produced brochures where students can inform themselves about what the Faculty offers. Aiming to ease the entrance exam preparation, Faculty of Sciences organizes courses for every interested student free of charge. Additionally, having in mind that Vojvodina is multi cultural environment, Faculty has allowed the possibility to organize, if required, entrance exam in languages of national minorities which are registered in Vojvodina. Those have been marketing activities so far at the Faculty of Sciences (Vesković, 2010).

4.3 Research at the Faculty of Sciences

"Know where to find the information and how to use it - that's the secret to success."

Albert Einstein

Many authors make different classifications of what is relevant for creating a positive image and achieving students' satisfaction. It is less important whether Melewar and Jennkins (2002) model of corporate identity is taken, or eight dimensions which Athiyaman (1997) suggests, they all agree that quality is key to success. In order to achieve quality different perspectives have to be taken into consideration. On the one hand, it is important to be familiar with market conditions, in order to position and plan strategies in best possible manner. On the other hand, it is necessary to be aware of other factors which are more closely related to the higher education institution itself. The core service of every higher education institution is knowledge. Therefore, the content of the courses and its applicability play a relevant role and impact stakeholders' perception of the institution.

Furthermore, availability and communication with teaching staff is imperative, and so is availability of facilities. Apart from teaching process there are other services that are being provided by the higher education institution that should not be neglected. When considering activities which do not refer to the study program, University or Faculty needs to pay attention to social belongingness in order for students to feel accepted. All these activities and issues which require attention of experts from this area are suggested in order to enhance one thing - student's satisfaction. The relevance of satisfied student is rather straightforward. Nothing can contribute more to the well being of a higher education institution than a student who is loyal to his University or Faculty and speaks highly about it. Therefore, in following subchapters, these issues will be analyzed in the context of Faculty of Sciences.

For the purpose of gaining accurate picture about all the above mentioned issues which are considered as relevant in higher education institutions' operating, different data have been gathered. The first part of the research refers to the secondary data which are provided by the Faculty. Within secondary data two different perspectives will be presented, those of present students and graduate students, whose point of view is rather salient to higher education institution. The primary research instruments used are qualitative and quantitative ones. Therefore, the research consists of two questionnaires and interviews with teaching staff. In order to understand students' activities before enrolling at the Faculty and their general profiles, students' profile questionnaire was conducted among first year students. The results are supposed to assist Faculty in creating or improving promotional activities, while the second questionnaire refers to students' satisfaction as the main factor influencing students' loyalty, which should bring higher education institution long term benefits. Finally, interviews with teaching staff will reveal their point of view on similar issues which are covered in students' satisfaction survey.

4.3.1 Secondary data about students' and graduates' satisfaction

The following data represent secondary data provided by the Faculty of Sciences. Two different questionnaires were conducted. The first one referred to present students and it was conducted in November 2007. The number of students who were included in the research was 1,575, with response rate of 87.39 percent. All departments, student programs and year of studies were included in the research with the aim to capture students' opinion about different issues which would assist the Faculty in improving the services such as library, computer center, etc., as well as teaching process itself. The second part of the secondary data to be presented refers to students who have finished the Faculty of Sciences. The data were gathered in November 2008. The number of graduates was 207, from whom 59 percent were employed which is important information in terms of answers related to the courses applicability. The response rate was 97.78 percent. Also, students from all studying programs were questioned. The aim of the questionnaire was to gain their perspective in terms of studying programs' evaluation. In both cases, stat graphics centurion was used for data processing.

Within the first part of secondary data, results from the questionnaire will be presented in the same manner as they were collected and analyzed by the Faculty. Therefore, firstly the data regarding facilities usage will be provided. Secondly, present students' evaluations of communication with administrative and teaching staff will follow. Finally, students' opinion regarding course applicability and literature adequacy will be provided.

Facilities of the Faculty encompass library, studying room, computer center and laboratories. The secondary data reveal that these facilities are used by students but not as often as it would be expected. In both cases there is a rather significant percentage of students who do not use these facilities at all. It is important to research further the main reasons for usage or non usage of these facilities. Surely, every student has different preferences in terms of what conditions he or she finds most suitable for studying, but the results show that students do not often decide to stay at the Faculty, when it is not compulsory. The reasoning could be that they do not feel pleasant in these rooms or they do not benefit enough from the usage of the same, since only 24.59 percent of students evaluated library service as efficient (see Figure 4-6).

Figure 4: Library usage

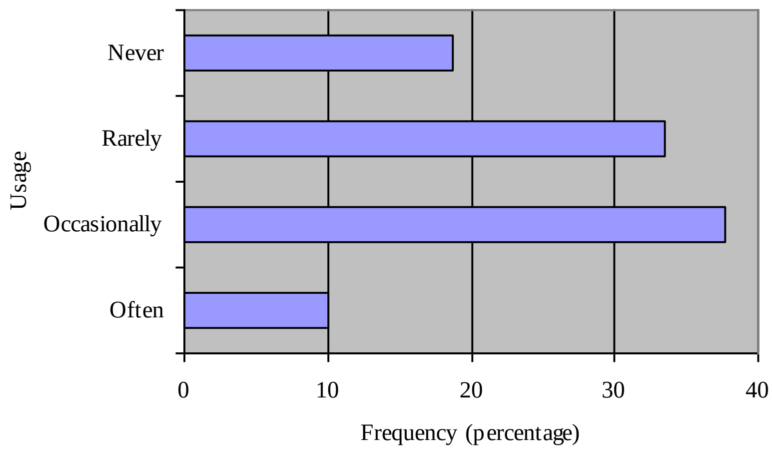


Figure 5: Efficiency of the library service

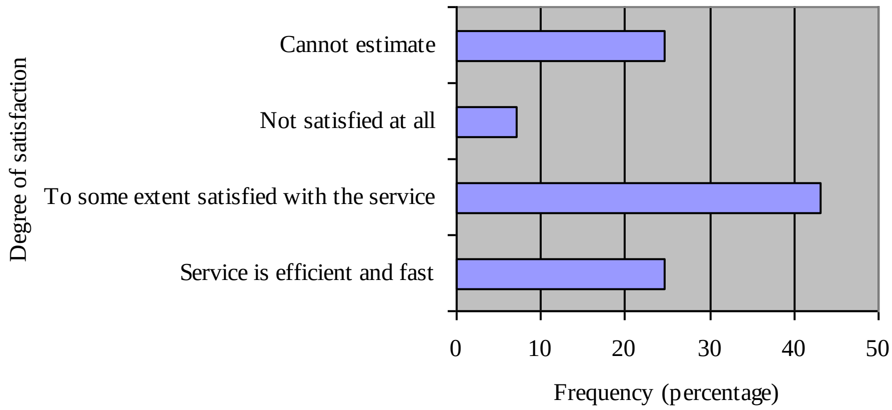
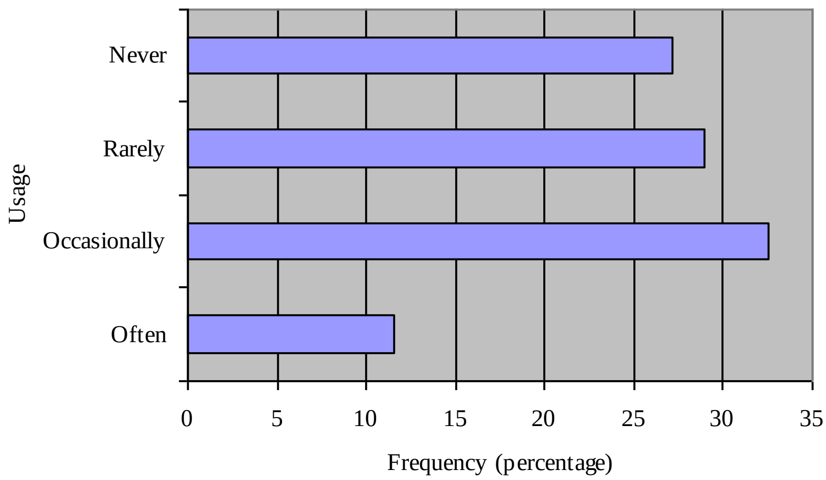


Figure 6: Studying room usage



Continuing the topic of Faculty's facilities, even though computer center and laboratories are regularly used by all students during lectures or exercises, these data represent how often students actually have opportunity to make use of these rooms on their own. Only 4.28 percent of students use the center on a daily basis, while 52.48 percent have the opportunity to utilize the computers only during lectures and exercises. The situation is even worse when it comes to laboratory usage, where 74.89 percent of students use them solely during lectures or exercises and just 5.38 on a daily basis (see Figure 7 & 8).

Figure 7: Computer center usage

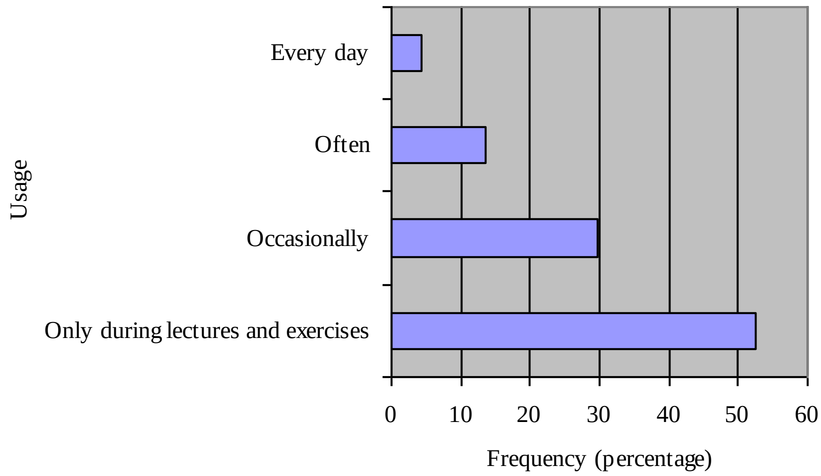
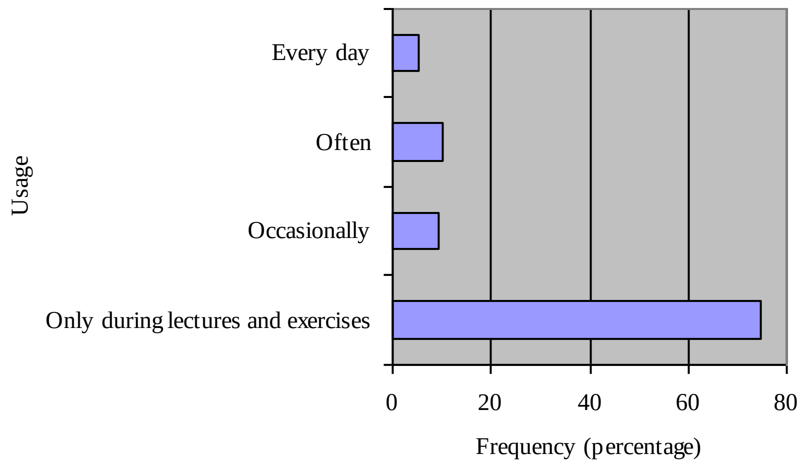
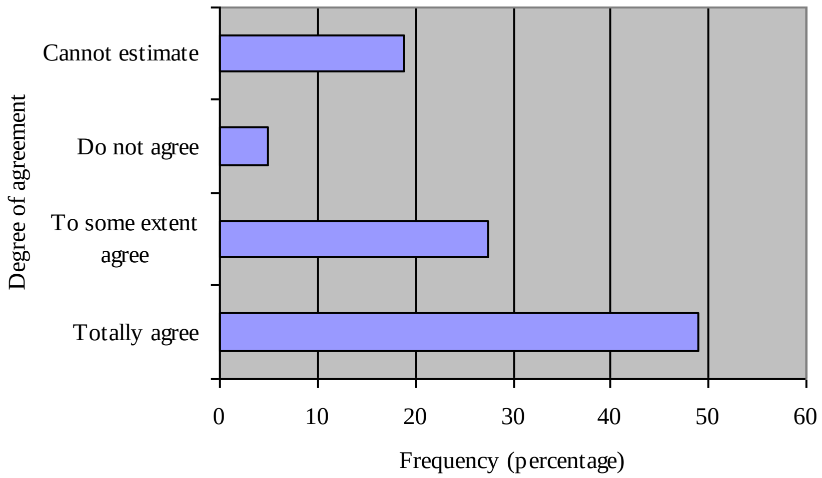


Figure 8: Laboratories usage



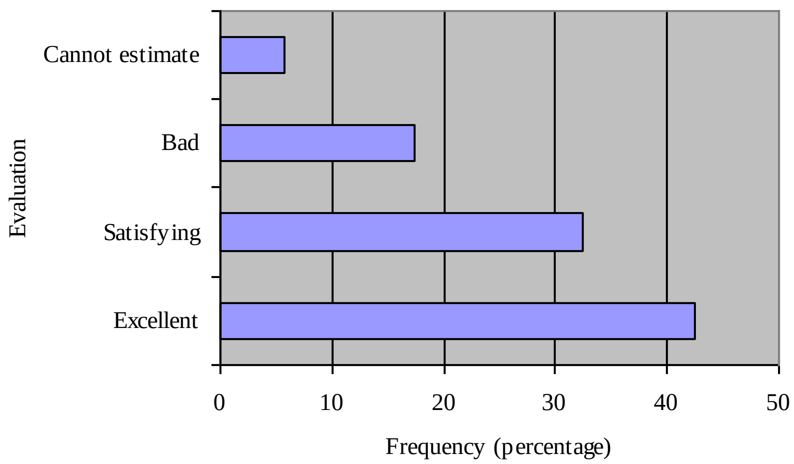
Furthermore, the data referring to the students' communication with first of all, administrative staff, which here is only the library staff, is given. Students are mostly satisfied with the behavior. However, there is a certain number of students who completely disagree with the statement that their behavior is correct, which should not be neglected (see Figure 9).

Figure 9: *Evaluation of the statement "staff behavior is correct"*



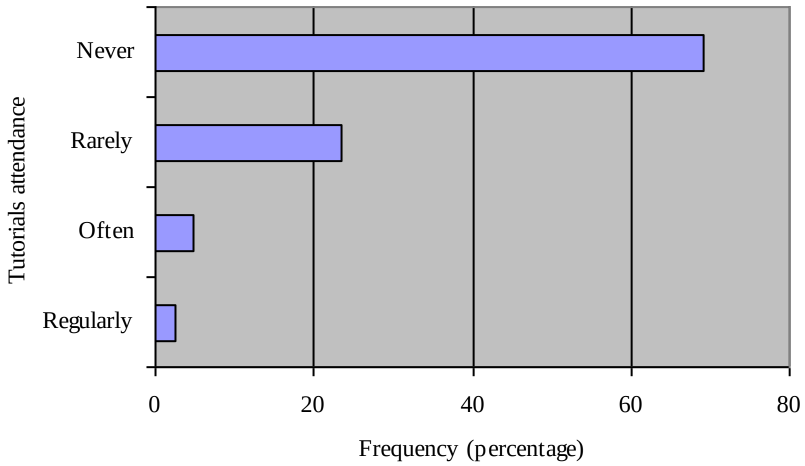
Additionally, data regarding students' communication with lecturers and students' tutorial attendance is provided. With Bologna Declaration the increasing importance and criteria for quality level of a Faculty is given to the readiness of teaching staff to respond to students' questions and initiate the overall interaction during the lectures or exercises. Therefore, the students from the Faculty of Sciences evaluated the lecturers' initiative to increase the interaction in the following manner: 42.43 percent of the students agree that lecturers initiate the interaction on their courses, 34.46 percent agree only partially, while 17.35 percent do not agree at all. Here only 5.76 percent of students could not give their estimate on this matter (see Figure 10).

Figure 10: Evaluation of interaction



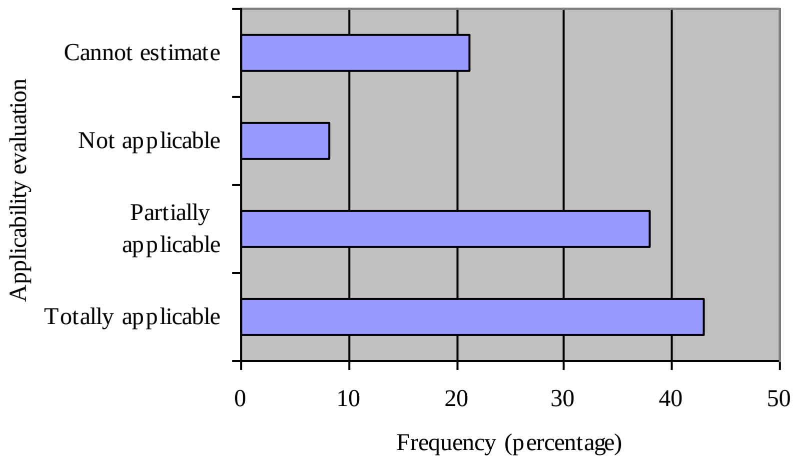
As mentioned above, another point of analysis is how often students use tutorials. Here, the results are disturbing. Only 2.59 percent of students attend tutorials regularly and only 4.7 percent attend them often, while 69.2 questioned students responded that they do not use tutorials at all (see Figure 11).

Figure 11: Tutorial attendance



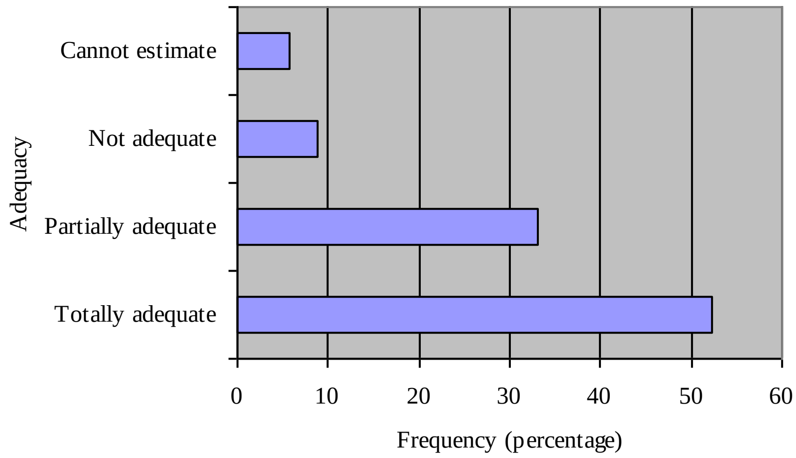
Faculty of Sciences provided the data on course applicability and literature adequacy. Data reveal that around 40 percent of students find the courses completely applicable, while only 8 percent of students claim that the content of the courses is not appropriate at all (see Figure 12).

Figure 12: Evaluation of courses applicability



The following figure shows literature adequacy. The results are satisfying since 52.32 percent of students think that literature is entirely adequate, while 33.18 partially agree with that statement (see Figure 13).

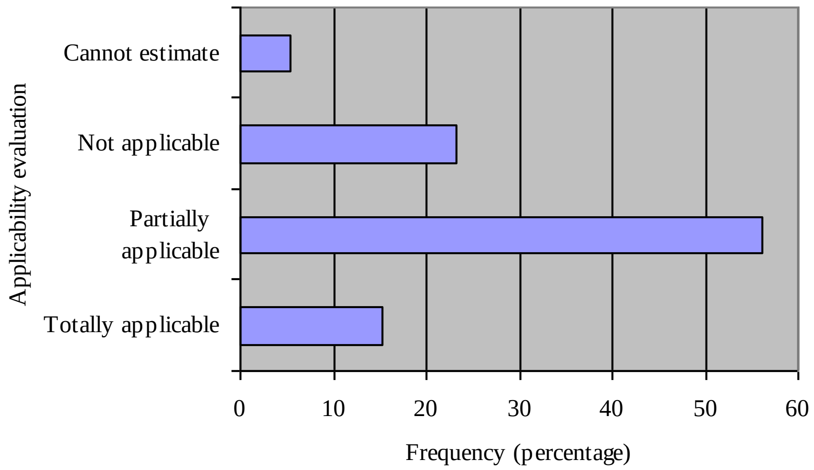
Figure 13: Evaluation of literature adequacy



Second part of the secondary data refer to graduate students, who are considered to be the most appropriate ones to test loyalty and satisfaction towards the institution. The aim of every higher education institution has to be to achieve good relationships with its students during their studies, so that both of them could enjoy benefits during, but even more after they finish the university. Benefits for Faculty could be various. However, as it was already stressed before, the most relevant one refers to the positive word of mouth recommendation. Within this part of secondary data, graduate students' evaluation will be given: firstly, on courses applicability, secondly on opportunities for further development and finally graduate students will reply to the question "if they could choose again which Faculty and major would they choose".

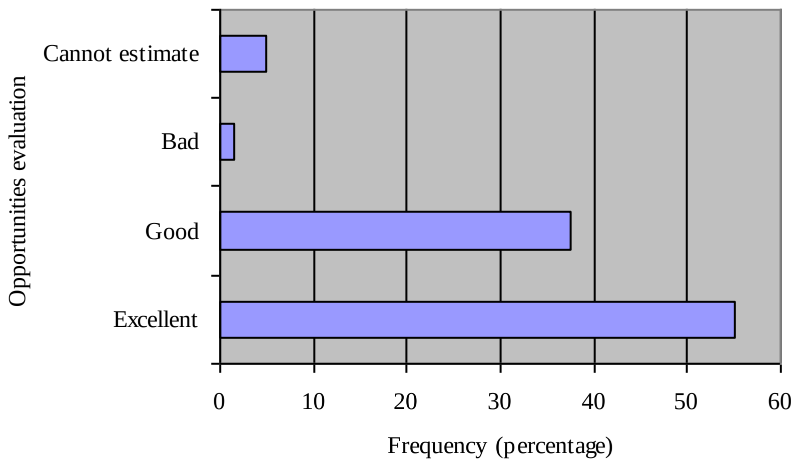
As mentioned before, it is important for students to feel that they are learning things which will be useful for their future job. Therefore, in order to have satisfied students it is important for Faculty to follow the rating of the course content for whose evaluation graduates are far more competent than present students, which confirms the much lower percentage of those who cannot estimate among graduate students (4 percent) than present ones (above 20 percent). Still, only 12.32 percent of graduate students believe that courses are totally applicable, while the majority (67 percent) thinks that courses are only partially applicable (see Figure 14).

Figure 14: *Graduates' evaluation of the applicability of the courses*



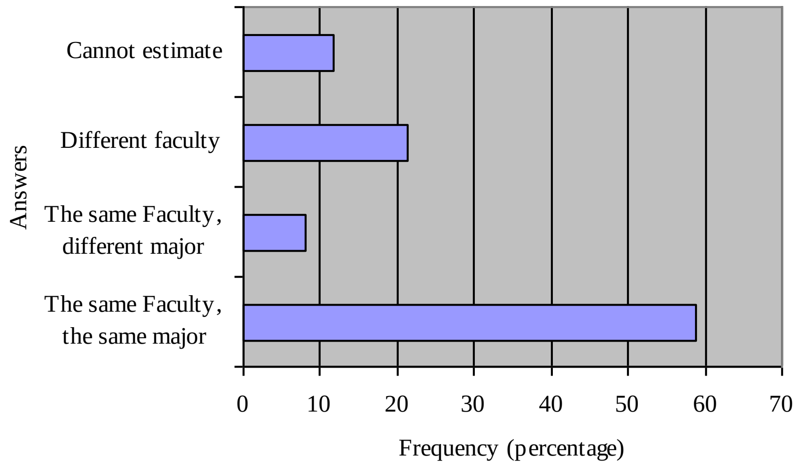
The following graph reveals students' satisfaction with opportunities for further development. Here, 55.17 percent of graduates agree completely and believe that the Faculty provides students with good opportunities for further studies, 37.44 percent agree partially, while only 1.48 percent do not agree with this statement (see Figure 15).

Figure 15: Graduates evaluation of opportunities for further development



Finally, following is the matter of students' satisfaction with their choice and whether they would decide on the same faculty and major as they did. A majority of students, 58.88 percent, responded that they would choose the exact same study program as the one they completed. Only 8.12 percent would choose the same Faculty but different program, while 21.32 percent would choose completely different Faculty. The percentage of those who did not give an answer is 11.68 percent (see Figure 16).

Figure 16: *"If graduates could choose again, they would choose"*



The following chapter presents the primary data gathered during the research at the Faculty of Sciences. The quantitative part refers to two different surveys conducted at the Faculty, while interviews with teaching staff present the qualitative part of the research.

4.3.2 First year students' questionnaire and results

The first questionnaire refers to first year students from the Faculty of Sciences and it was handed out at the beginning of June 2010. First year students were chosen for the study to obtain the most up to date information that would help the institution to form the most appropriate promotional activities. The sample was made up of 720 students from all Departments with the response rate of 99.69 percent. Stat graphics centurion was used for data processing.

Within this part of the research the management decision problem set was "How to attract potential students through different promotional activities?" From the secondary data provided by the institution and from general observations, it can be said that the Faculty is perceived as high quality one, placing high demands on its students. Therefore, it is generally seen as a difficult task to study at the Faculty of Sciences, relative to other faculties from the University of Novi Sad. Aiming at slight increase or constant number of enrollments, at the moment the image of the Faculty formed through promotional activities should not be changed since it is beneficial for the institution to be perceived as high quality one (Choy Cong, 1996). Moreover, it is important to get to know the students in order to be able to satisfy and adapt Faculty's activities to match their needs (Nicolescu, 2009). Additionally, students are no longer passive consumers. They make rational choices of higher education courses and institutions based on information they gather (Hemsley-Brown & Oplatka, 2006). Consequently, the results from the survey reveal students' profiles, firstly in terms of their general background and secondly in terms of their behavior before the enrollment, which includes sources of information, decision timing, motives that drive them towards Faculty of Sciences and whether they use preparation courses organized by the Faculty. The questionnaire can be found in Appendix C.

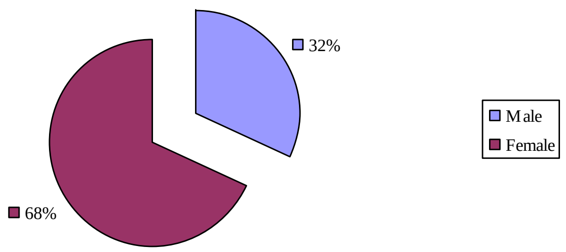
The structure of the sample across departments can be seen in Table 6.

Table 6: Sample structure according to department of study

Departments of Faculty of Sciences	**Frequency**
Biology and Ecology	140
	19.4%
Physics	60
	8.3%
Geography, Tourism and Hotel Management	255
	35.4%
Chemistry	102
	14.2%
Mathematics and Informatics	163
	22.6%
Total	720
	100.0%

Within the questioned students gender structure is depicted in Figure 17.

Figure 17: Gender structure



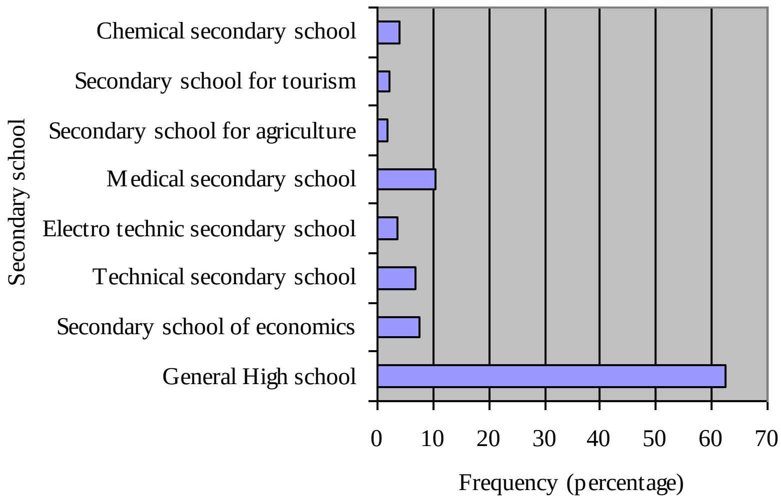
Furthermore, the following table shows gender structure across departments. Across all departments female gender dominates. However, it should be stressed that the ratio is more radical at the Departments of Biology and Ecology and Chemistry than in the case of the other three (see Table 7).

Table 7: Gender allocation across Departments

		Departments of Faculty of Sciences					Total
		Biology and Ecology	**Physics**	**Geography, Tourism and Hotel Management**	**Chemistry**	**Mathematics and Informatics**	
Gender	Male	28	23	96	19	63	229
		20.1%	38.3%	37.6%	18.8%	38.9%	31.9%
	Female	111	37	159	82	99	488
		79.9%	61.7%	62.4%	81.2%	61.1%	68.1%
Total		139	60	255	101	162	717
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

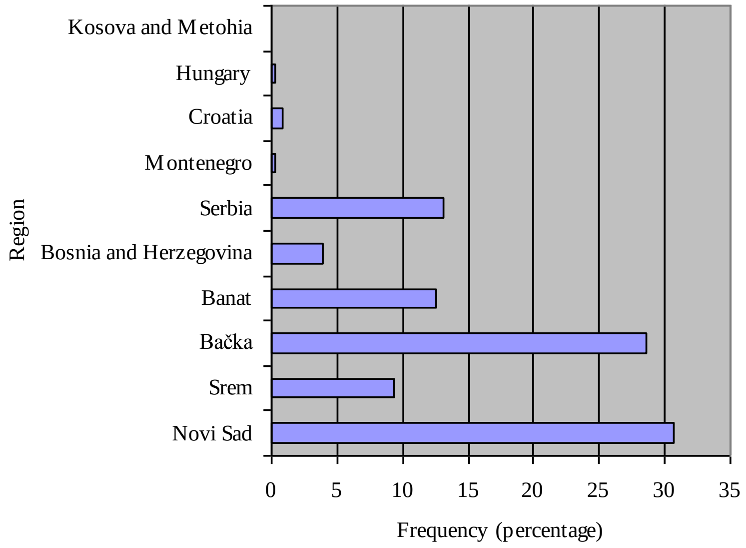
The following data provided refer to the educational background and region where secondary school education is completed. It can be seen that the most frequent school from which students come is general high school with 62.4 percent (see Figure 18).

Figure 18: Most frequent secondary schools



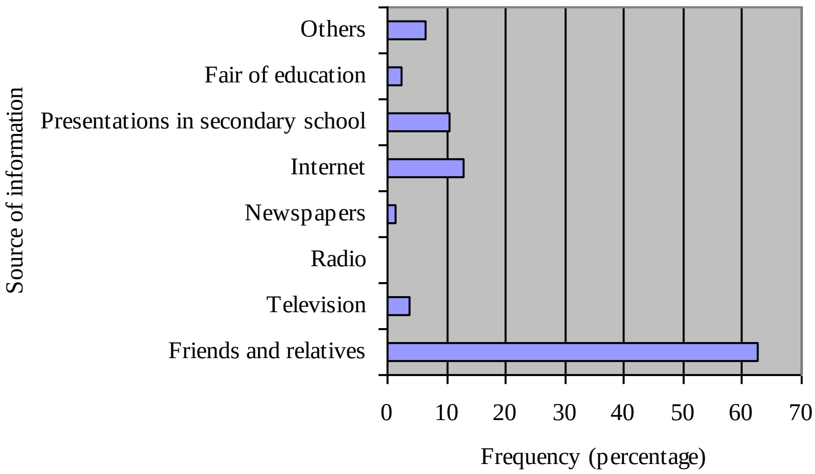
Furthermore, we analyzed the region from which students come from. Evidently, the most common region is Novi Sad and Bačka. However, others must not be disregarded (see Figure 19).

Figure 19: Region from which students are coming



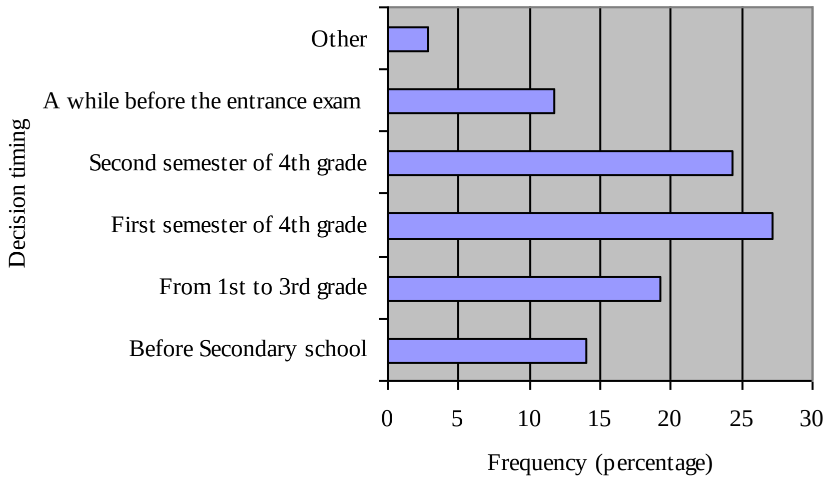
In order to use the means most effectively and efficiently, it is of great importance, that the institution establishes the most common sources of information which students exploit in the process of decision making. The most common first source of information is “friends and relatives” (see Figure 20). This proves how relevant reputation and students’ loyalty is and how by word-of-mouth Faculty can rather effectively promote itself (Wetzels, De Ruyter & Van Birgelen, 1998).

Figure 20*: Students’ first source of information*



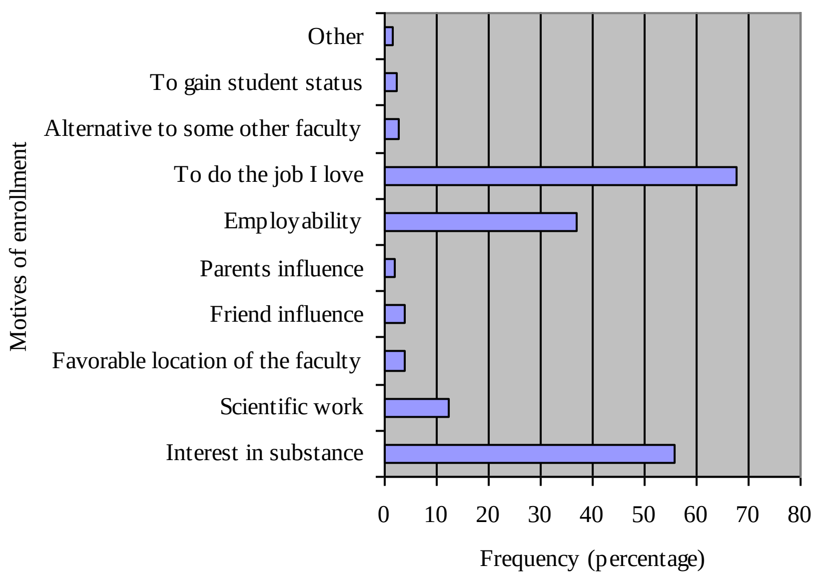
Moreover, in order to determine the appropriate timing to start with promotional activities it is relevant to realize the most common decision timing of prospective students. The decision timing is mainly during the forth grade of secondary school, but there are cases when students make their decisions of enrollment at the very beginning of their Secondary school or in the period from the first to third grade (see Figure 21).

Figure 21*: Students' decision timing*



The following matter of research is the motives for enrollment at Faculty of Sciences. In order to form the message that is to be sent to potential students it is noteworthy to identify the major motives for choosing Faculty of Science. Students were allowed to give more than one answer. On average they gave 1.88 answers to the question of motives of enrollment. The most frequent answers were interest in the subject matter, "to do the job I love" and "employability". Nevertheless, other responses should not be disregarded in the future research and discussion (see Figure 22). Moreover, answers "alternative to some other Faculty" and "just to gain student status" are interesting for the Faculty, since the ones whose motives are "interest in subject matter" or "to do the job I love" probably pay less attention to promotional activities.

Figure 22: Motives of enrollment at the Faculty of Sciences



Furthermore, the effectiveness of institution’s preparation courses for entrance exam was questioned in order to see how many students take advantage of this opportunity, which is free of charge. Evidently, the Faculty with this gesture aims to ease the preparation period for students, ensuring that lack of financial means for preparation will not be the reason not to choose the Faculty of Sciences. Among the students who represent second generation that had this opportunity, 71 percent did not attend the course, while 29 percent did. In order to increase the turnout more attention needs to be paid to making the information accessible to every prospective student (Mai, 2005).

4.3.3 Present students’ satisfaction

The second part of the primary research concerns the satisfaction of present students. Benefits of loyalty and students’ satisfaction have already been mentioned. Bearing in mind the broader purpose of education in terms of its influence on society, it is important to find effective and efficient means to transfer the knowledge to students. Cronin and Taylor (1992) claim that that service quality leads towards satisfaction. However, what students would define as quality can be relative, thus Mai (2005) claims that satisfaction depends on how well actual perceptions match students’ expectations. In addition to this, even though there is criticism towards treating students as customers and satisfying their needs to minute details, it is generally agreed upon that satisfaction influences the retention of students (Choy Cong, 1996; DeShields, Kara & Kaynak, 2005). Therefore, Faculty must get to know students, identify the best possible manner to approach them and thus, establish a mutually beneficial relationship.

In order to determine to what degree students are satisfied, their opinion about different elements of the Faculty’s service is tested.

Apart from suggestion that for achieving satisfaction the match between expectations and actual perceptions has to exist, Westcott-Alessandri, Yang and Kinsey (2006) claim that universities are aware of the need to broaden their service with regards to higher expectations of students. Therefore, it is considered relevant for higher education institution to be aware of students’ expectations in order to provide the most appropriate service.

H_1: Students’ expectations did not match what Faculty offers.

The following hypothesis is developed from the notion based on overall current situation in the country and at University of Novi Sad, recent change to Bologna system, etc.

H_2: Students are dissatisfied with the possibilities for further specialization at the Faculty of Sciences.

Furthermore, it is suggested that students’ assessment of the university’s service quality includes evaluation of teaching-related structures and teaching-related processes, as well as the actual results of these processes. The teaching related structures include faculties' facilities such as laboratories, computer rooms, libraries, etc. Since all these features were assessed in-depth and given in secondary data, here the focus is put more on teaching related processes and the results. The process dimension refers to courses, in terms of their content, literature and methodology used for teaching, and the degree to which Faculty members care for their students, in terms of mentorships and interaction with students (Hennig-Thurau, Langer & Hansen, 2001). Therefore, firstly, the following hypotheses refer to the course usefulness and literature of the same.

H_3: Students do not perceive courses as useful.

H_4: Students perceive literature as appropriate.

Secondly, research hypotheses refer to how favorable students see their relationships with teaching staff, and how motivated they are to talk to or discuss issues with their mentors and lecturers. Here, it is important to realize that a lecturer's success in attempting to start a discussion will, to a large extent, depend on students' involvement. Nevertheless, the lecturers and Faculty in general have to be supportive and encourage any initiative coming from students. The importance of students' involvement comes from the belief that the quality which a student will obtain at the Faculty does not depend solely on the institution, but also on how willing a student is to put as much effort as possible in order to maximize the value of the service which he is being provided with (Arnett, German & Hunt, 2003), (Halbesleben, Becker & Buckley, 2003). Additionally, from the fact that teachers' evaluation has become widely exploited as a way to give students a chance to anonymously assess the instructors, the hypotheses concerning matters of interaction, tutorial attendance and student-teacher ratio are developed. With regards to this, it has to be said that there is a limitation which relates to whether students know what they need from their instructors and if their expectations concerning education are based on criteria that will really serve them (Chonko, Tanner & Davis, 2002).

H_5: Students evaluate lecturers' readiness to provide answers to students' questions as bad.

H_6: Students are dissatisfied with interaction.

H_7: Students do not attend tutorials often.

H_8: Students believe that the student-teacher ratio is not appropriate.

The results dimension of service quality within a university context reflects the students' evaluation of the usefulness of his or her studies for meeting future challenges (Hennig-Thurau, Langer & Hansen, 2001). In these terms the following hypotheses which refer to how well students think they are being prepared for future work market, are set.

H_9: Students perception of ratio between number of exercises and number of lectures is unfavorable.

H_{10}: Students think that they do not have enough internship opportunities during their studies.

In previous chapter Center for Career Development is mentioned as a mediator between labor market and university. It is suggested that key element in communication with students is their awareness of all the possibilities that they have (Argenti, P. 2000). Consequently, the hypothesis tests if students are familiar with options that are offered by University' through this Center.

H_{11}: Students did not hear about Center for Career Development.

As already mentioned, for the purpose of data gathering, a questionnaire was used. The sample was chosen randomly and included 85 students from all departments and years of studies. The proportion of students across departments was appropriate to overall number of students at each department separately. This part of the research was done in July 2010, and all questionnaires that were handed out were returned with answers. The questionnaire consisted of 14 questions which followed from the hypotheses (see Appendix D). Stat graphics centurion tools were used to calculate the results and to test hypotheses.

The structure of questioned students by year of studying is the following:

Table 8: Number of students across years of studies

Year of studies	Frequency
First	19
	22.35%
Second	21
	24.71%
Third	18
	21.18%
Fourth	26
	30.59%
Fifth	1
	1.18%
Total	85
	100.00%

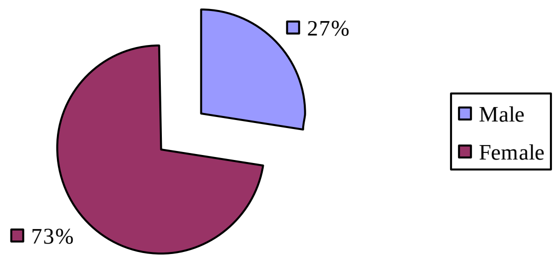
Furthermore the sample structure across Departments is represented in Table 9.

Table 9: Number of students across departments

Department	Frequency
Biology and Ecology	14
	16.47%
Physics	17
	20.00%
Geography, Tourism and Hotel Management	22
	25.88%
Chemistry	17
	20.00%
Mathematics and Informatics	15
	17.65%
Total	85
	100.00%

From the students questioned 62 students were female and 23 male students, which is close to overall ratio between male and female students.

Figure 23: Gender structure



On the matter of students' general remark of the match between their expectations and their actual perception (H1), the questionnaire provided the following results. In terms of comparison between their expectations and what the Faculty provides it can be said that the average mark is 2.96 on the scale of five with standard deviation 1.09. Only 7.06 percent students said that their expectations have been matched with the services of Faculty of Sciences. It can be concluded that students' satisfaction is mediocre, thus leaving a lot of room for improvement (see Appendix E-1).

The second issue concerns the possibilities for further specialization which refer to second and third cycle of Bologna Declaration (H2). The average mark given is 3.08 on the scale of five, with standard deviation of 0.97. Only 8.24 percent of students are completely satisfied, but it is also relevant to mention that only 4.71 percent of students are completely dissatisfied (see Appendix E-2).

Additionally, the questionnaire examines how useful the courses for students' future profession are (H3). Even though the average mark is below 3, when analyzing this result it has to be kept in mind that vast majority of students do not have the experience from the real market, so their judgment of courses' relevance could be biased. Nevertheless, it is a matter of concern that 41.18 percent of students believe that the courses are only partially useful (see Appendix E-3).

The following matter is literature adequacy (H4). The average mark is 3.73 on the scale of five with standard deviation of 1.10. More than 60 percent of students agree on the claim that literature is adequate and serves its purpose (see Appendix E-4).

The following results refer to communication between students and lecturers, from students' perspective.

Firstly, the readiness of the lecturers to provide students' with answers (H5) has the average of 3.64 on the scale of five, with standard deviation of 1.06. More than half students checked marks 4 and 5, implying that higher number of students involved in the research have positive opinion regarding this matter (see Appendix E-5).

On the other hand when answering the question about the overall interaction on lectures and exercises (H6) the average is much lower and stands at 2.88. The results show that the majority believe that the interaction is only satisfying or good, since 69.41 percent of students replied in this manner (see Appendix E-6).

Moreover, students' opinion regarding the ratio between number of exercises and number of lectures is analyzed (H9). The average mark is repeatedly below 3 implying that the theory and practical knowledge are not well synchronized. From the sample, 11.76 percent of students think that the ratio is unsatisfying, while 24.71 percent are only partially satisfied with this ratio (see Appendix E-7).

Average values and standard deviation are presented in table 10.

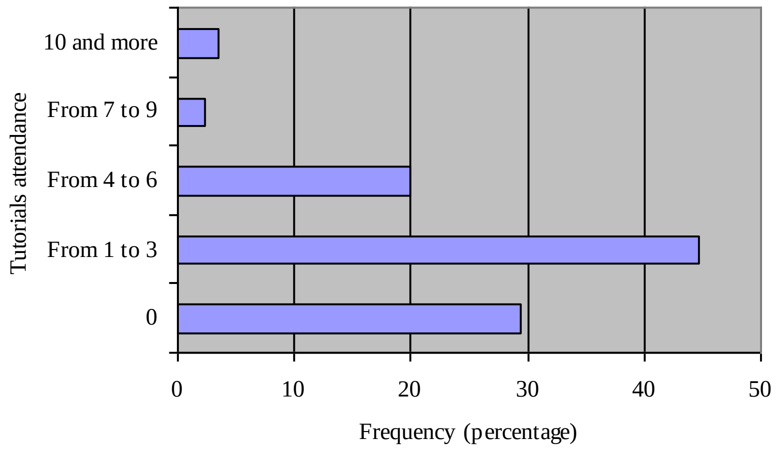
Table 10: Average and standards deviation values

	Average	**Standard deviation**
Overall students satisfaction (H1)	2.96	1.09
Students' evaluation of opportunities for further development (H2)	3.08	0.97
Usefulness of the courses relatively to the labor market trends (H3)	2.79	1.04
Students' evaluation of literature(H4)	3.73	1.11
Students' evaluation of lecturers' readiness to provide answers (H5)	3.65	1.07
Students' evaluation of overall interaction with teaching staff (H6)	2.88	1.14
Students' evaluation of lecture-exercise ratio (H9)	2.91	1.13

The descriptive questions refer to tutorial attendance, students' evaluation of student-teacher ratio, internship opportunities and finally, their awareness of Center for Career Development.

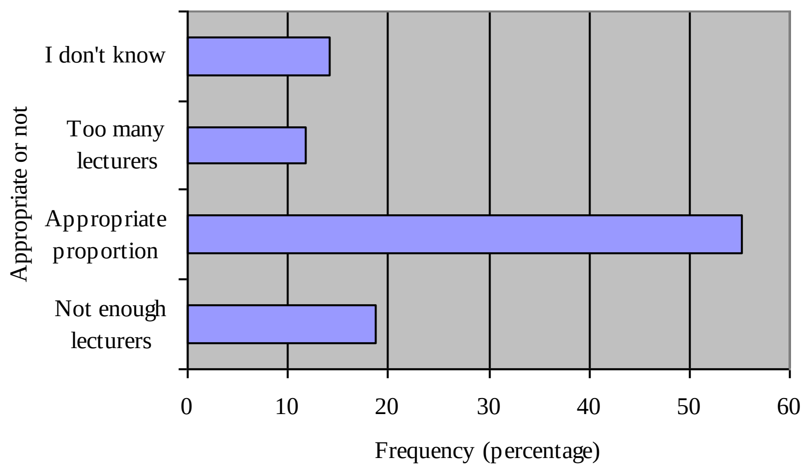
Following are results which refer to communication with teaching staff and tutorials attendance (H7). It is concerning that almost 30 percent of students replied that they do not attend or use tutorials at all and 44.71 percent attend only from 1 to 3 consultations per year (see Figure 24).

Figure 24: S*tudents' tutorials* attendance frequency



Bearing in mind the relationship between students and teaching staff it is of great relevance to see whether it is realistic to expect a certain degree of teachers' dedication to the students. The results on student-teacher ratio (H8) have shown that the majority of students (55.29 percent) think that the ratio is on the right level. However, 18.82 percent of them state that there is too few teaching staff in comparison to the number of students (see Figure 25).

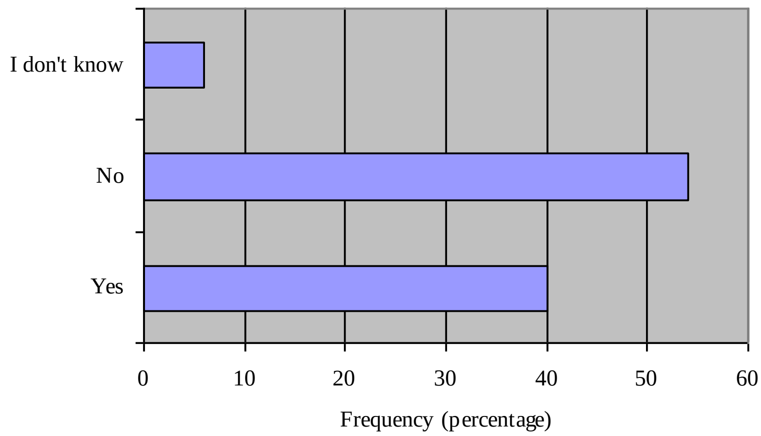
Figure 25*: Students' evaluation of student*-teacher ratio



The final two matters refer to the internship opportunities and how informed students are about the organizational unit of the University whose task is to inform students about the same.

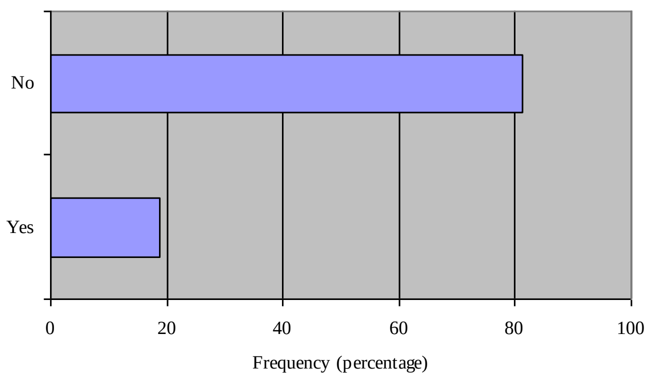
The results showed that opinions among students on the matter of satisfaction with internship opportunities (H10) are split almost into half. However, a slightly higher number of students believes that there are not enough possibilities for praxis during their studies (see Figure 26).

Figure 26*: Students' evaluation of whether they are satisfied with internship opportunities*



When it comes to students' awareness of Center for Career Development (H11) results show that only 18.82 percent of respondents have heard about this unit. Among this percentage only 43.75 have ever used the services which the Center offers. This result justifies the hypothesis that awareness is on a very low level (see Figure 27).

Figure 27*: Students' awareness of Center for Career Development*



The hypotheses testing can be seen in Appendix F, from which the following answers which are supported by the above represented results emerged:

- It cannot be said that students' expectations have been matched by the actual service provided;

- It cannot be said that students are very satisfied with the possibilities for further development;
- It can be said that students are rather satisfied with the teachers' readiness to provide answers;
- It can be said that students are fairly dissatisfied with overall interaction;
- It can be said that students are satisfied with the literature;
- It can be said that student rarely or never attend tutorials;
- It can be said that students do not find course content useful;
- It can be said that students do not find ratio between lectures and exercises appropriate.

The data above represent the general picture at the Faculty of Sciences. They show students' satisfaction which refers to the communication with teaching staff, course content, literature, as well as opportunities which are provided. Answers varied, which implies either different criteria on students' part, or completely different situations across departments. In order to get a clearer picture about where the key problems with students' satisfaction lie, further analysis is done. For the purpose of getting to the data on what the frequencies for five different departments are, contingency tables are used. The results across departments will be presented in the same order as data that referred to the Faculty in general.

On the matter of how well their expectations have matched the actual service quality which the Faculty of Sciences provided students across departments have given varying answers (detailed analysis can be seen in Appendix G-1). To begin with, three departments, Department of Biology and Ecology, Department of Chemistry and Department of Geography, Tourism and Hotel Management have average values, 2.71, 2.88 and 3.05 on the scale of 5, respectively, implying that the students' satisfaction with the service which they are getting is mediocre. On the other hand at the Department of Physics there is an interesting situation. The average value is 2.47. However, it seems that students are either utterly dissatisfied or very pleased with the service, since more than 50 percent of the questioned students gave the mark 1 or 2 indicating the high degree of disappointment, while 35.29 percent of students gave the mark 4 on the scale of five. Such circumstances leave room for further research to question the reasoning behind the gap between students themselves. At this point the possible reasoning can be seen in the motives for enrolling at the Faculty of Sciences which include "just to gain student status" and "alternative to some other Faculty". It can be suggested that students' dissatisfaction stems from the fact that the Faculty of Sciences, particularly Department of Physics was not the first choice of particular student. Finally, the best situation is at the Department of Mathematics and Informatics which has the average mark of 3.73.

Furthermore, results reveal students' opinion regarding possibilities for further development (see Appendix G-2). At the Department of Biology and Ecology and Department of Geography, Tourism and Hotel Management, the situation is similar to the first matter with average values of 3.00 and 3.09. At the Department of Physics students' opinions vary. The majority, 47.06 percent, is not so pleased with the possibilities which are provided, consequently, the average mark is repeatedly the lowest. Additionally, at the Department of Chemistry students' answers differ to a great extent. Once more the highest percentage of students who are completely satisfied with the possibilities for future development is at the Department of Mathematics and Informatics, with the average of 3.73.

Moreover, what draws students' attention is the content of the lectures and exercises, thus students across departments have the following opinion regarding the usefulness of the courses (detailed analysis is available in Appendix G-3). Apart from the Department of Mathematics and Informatics, which has the 3.67 average mark, the situation, is far from encouraging. At all the other departments, average weighs towards the negative part of the scale and is below three. The worst situation is at the Department of Chemistry where the average mark is the lowest and values only 2.24. The fast pace of technology is definitely making the task of higher education institutions more difficult in terms of the content of the courses. Additionally, the fact that Serbia is transitional economy is not helping either.

When it comes to literature, students are more or less satisfied with its adequacy. However, since only at the Department of Chemistry the average is above 4, there is room for improvement. A more comprehensive analysis can be seen in Appendix G-4.

Furthermore, as already mentioned, relevant aspect of students' satisfaction is the matter of communication with teaching staff (see Appendix G-5). When it comes to lecturers' readiness to provide students with answers to their questions, very few students gave the marks 1 and 2. This implies the poor readiness of teachers to answer questions.

Additional matter of communication is interaction during lectures or exercises. The importance of interaction also lies in the fact that by promoting discussions, encouraging students to form and express their opinion about relevant issues of the sciences which they have chosen to study are ways to motivate students and achieve their satisfaction. Data analyzed across departments indicate that situation is not favorable (see Appendix G-6). It seems that this is a relevant issue at the Departments of Biology and Ecology, Geography, Tourism and Hotel Management and Chemistry, where very few responses evaluate the situation as very good or excellent, but only mediocre good, satisfying and unsatisfying. Better situation is at the Department of Physics where the average is just above 3. Repeatedly, the most encouraging answers are given by the students from the Department of Mathematics and Informatics, where 40 percent of students stated that the interaction is excellent.

In terms of lecture-exercise ratio the situation is least favorable at the Department of Geography Tourism and Hotel Management, since there is the highest number of students who said that they are completely unsatisfied or only partially satisfied. The average is the highest when it comes to Departments of Physics and Mathematics and Informatics, while the ones for other three departments are below 3 (see Appendix G-7).

The average values and standard deviation of the above described results are presented in Table 11.

Table 11: Average and standard deviation values across departments

Students' evaluation of:	Departments	Average	Standard Deviation
Overall satisfaction	Biology and Ecology	2.71	0.61
	Physics	2.47	1.28
	Geography, Tourism and Hotel Management	3.05	0.95
	Chemistry	2.88	0.99
	Mathematics and Informatics	3.73	1.22
Opportunities for further development	Biology and Ecology	3.00	0.39
	Physics	2.76	1.15
	Geography, Tourism and Hotel Management	3.09	0.81
	Chemistry	2.88	1.05
	Mathematics and Informatics	3.73	1.04
Usefulness of the courses relatively to the labor market	Biology and Ecology	2.79	0.58
	Physics	2.82	1.51
	Geography, Tourism and Hotel Management	2.59	0.50
	Chemistry	2.24	0.56
	Mathematics and Informatics	3.67	1.23
Literature	Biology and Ecology	3.79	0.58
	Physics	3.47	1.34
	Geography, Tourism and Hotel Management	3.55	0.96
	Chemistry	4.06	1.20
	Mathematics and Informatics	3.87	1.36
Lecturers' readiness to provide answers	Biology and Ecology	4.00	0.39
	Physics	3.59	1.33
	Geography, Tourism and Hotel Management	3.05	1.05
	Chemistry	3.76	1.09
	Mathematics and Informatics	4.13	0.83
Overall interaction with teaching staff	Biology and Ecology	2.50	0.85
	Physics	3.12	1.27
	Geography, Tourism and Hotel Management	2.64	1.18
	Chemistry	2.59	0.62
	Mathematics and Informatics	3.67	1.29
Lecture-exercise ratio	Biology and Ecology	2.86	0.77
	Physics	3.41	0.62
	Geography, Tourism and Hotel Management	2.59	1.53
	Chemistry	2.41	0.71
	Mathematics and Informatics	3.40	1.24

Continuing with communication with teaching staff, the final matter concerns how often students attend tutorials. It is seen from secondary data that the situation is rather concerning and the data for each department individually reveal that the highest percentage of students not using tutorials at all is present at the Department of Biology and Ecology. However, all departments are dealing with lack of students' desire to take advantage of the extra opportunities to talk to the teaching staff (see Table 12).

Table 12*: Tutorials' attendance per year*

Evaluation / Students per department	**0**	**From 1 to 3**	**From 4 to 6**	**From 7 to 9**	**10 and more**	**Row Total**
Biology and Ecology	10	3	1	0	0	14
	71.43%	21.43%	7.14%	0.00%	0.00%	16.47%
Physics	2	11	0	1	3	17
	11.76%	64.71%	0.00%	5.88%	17.65%	20.00%
Geography, Tourism and Hotel Management	10	9	3	0	0	22
	45.45%	40.91%	13.64%	0.00%	0.00%	25.88%
Chemistry	3	11	3	0	0	17
	17.65%	64.71%	17.65%	0.00%	0.00%	20.00%
Mathematics and Informatics	0	4	10	1	0	15
	0.00%	26.67%	66.67%	6.67%	0.00%	17.65%
Column Total	25	38	17	2	3	85
	29.41%	44.71%	20.00%	2.35%	3.53%	100.00%

When it comes to student-teacher ratio which is in terms of communication very important, students are mostly satisfied and find this ratio appropriate. However, expectedly the only group of students who have diverse opinion is from the Department of Geography, Tourism and Hotel Management. These data are rather straightforward since this department is the largest in terms of student numbers (see Table 13).

Table 13*: Students' evaluation of student*-teacher ratio

Evaluation / Students per department	**I don't know**	**Too little teachers**	**Too much teachers**	**Proportional**	**Row Total**
Biology and Ecology	4	1	0	9	14
	28.57%	7.14%	0.00%	64.29%	16.47%
Physics	4	0	2	11	17
	23.53%	0.00%	11.76%	64.71%	20.00%
Geography, Tourism and Hotel Management	0	12	2	8	22
	0.00%	54.55%	9.09%	36.36%	25.88%
Chemistry	1	0	4	12	17
	5.88%	0.00%	23.53%	70.59%	20.00%

table continues

continued

Evaluation / Students per department	I don't know	Too little teachers	Too much teachers	Proportional	Row Total
Mathematics and Informatics	3	3	2	7	15
	20.00%	20.00%	13.33%	46.67%	17.65%
Total	12	16	10	47	85
	14.12%	18.82%	11.76%	55.29%	100.00%

The following matter refers to the amount of internships which are available to the students during the years of study. Even though students from the Department of Geography, Tourism and Hotel Management expressed dissatisfaction with synchronization of lectures and exercises, they seem pleased with practical knowledge which they have opportunity to gain in actual companies. The greatest disappointment comes from students who are at the Department of Physics, followed by the Department of Mathematics and Informatics (see Table 14).

Table 14*: Students' opinion about whether they have enough internship opportunities* across departments and majors

Evaluation / Students per department	Yes	No	I don't know	Row Total
Biology and Ecology	9	5	0	14
	64.23%	35.77%	0.00%	16.47%
Physics	2	12	3	17
	11.76%	70.59%	17.65%	20.00%
Geography, Tourism and Hotel Management	14	8	0	22
	63.64%	36.36%	0.00%	25.88%
Chemistry	6	11	0	17
	35.29%	64.71%	0,00%	20.00%
Mathematics and Informatics	3	10	2	15
	20.00%	66.67%	13.33%	17.65%
Column Total	34	46	5	85
	40.00%	54.12%	5.88%	100.00%

4.3.4 Interviews with teaching staff

From the model of corporate identity, behavior of employees is suggested as one of the four factors which form corporate identity. Additionally, Wilson (1991) suggests the great significance of relationship between students and teaching staff. In order to have good relationships the teaching staff has to be satisfied and motivated as well. Therefore, it is important to capture teaching staff point of view on the topics which are related to the broad picture that they have about the University of Novi Sad and Faculty of Sciences, as well as specific issues such as their communication with students, links with labor market, equipment quality, etc.

This part of the research represents a qualitative part where the instrument used is standardized open-ended interview. The questions are prepared ahead and they are read in the same order to all three interviewees. Interviews are held in person on the Faculty of Sciences with each interviewee individually. Three lecturers took part, from which one is a teaching associate from the Department of Geography, Tourism and Hotel Management, while two other interviewees are professors from Chemistry Department and Mathematics and Informatics Department, respectively (see Table 15).

Table 15: Interviews with teaching staff

Question/lecturer	**Assistant from Department of Geography, Tourism and Hotel Management**	**Professor from Chemistry Department**	**Professor from Mathematics and Informatics Department**
How would you describe studying conditions at University of Novi Sad in general and at the Faculty of Sciences specifically and would you say that Faculty of Sciences is above or below average in comparison with other Faculties in Novi Sad?	I believe that University of Novi Sad gives more than good opportunities for studying and for further specialization. As the second biggest and definitely the most important Faculty for science and the society, Faculty of Sciences provides students with solid knowledge and studying opportunities. As in every institution there are things that could be done better since there is always room for improvement. For the last part of the question I cannot give the final answer since I do not have enough information about the conditions and situation in which other Faculties are.	I believe that University of Novi Sad provides students with very good quality of studying as well as Faculty of sciences. I am not familiar with other Faculties therefore I cannot compare with Faculty of Sciences, but I do believe that all faculties within University of Novi Sad are doing as much as they can to bring the level of quality to the highest possible.	The studying conditions can be observed from different perspectives. On the one hand, from the facilities and equipment perspective, I believe that all Faculties from the University of Novi Sad offer good conditions. Additionally, Faculty of Sciences is definitely one of the best, providing students with excellent working conditions, in terms of laboratories, libraries, classrooms and other facilities. On the other hand, if we take into consideration the quality of the teaching process I must say that the situation is not the same across the University. Availability of the teaching staff for individual consultations and additional work is not the same at all Faculties. As far as the Faculty of Sciences is concerned it is definitely one of the Faculties whose quality of teaching is on a very high level. However, the students' possibilities to work and spend time in laboratories and other facilities of the Faculty are quite limited. They only have access to the libraries and studying area.

table continues

continued

Question/lecturer	Assistant from Department of Geography, Tourism and Hotel Management	Professor from Chemistry Department	Professor from Mathematics and Informatics Department
How would you grade the quality price ratio of the services which Faculty is providing students with?	Another difficult question. The only thing I know is that the prices of different studying programs that are on the same level are different due to the different need for additional material and so on. Ministry and Government make the final decision regarding the price, but I can say that the prices of studying at the private Universities are not much higher than the price that a self financing student has to pay. I will try to answer the question excluding the price part by saying that from one perspective the quality of the service could be greater.	I think that the price is set far too low in comparison to the quality which Department of Chemistry and Faculty of Sciences is providing.	Taking into account every segment of what Faculty of Sciences is giving to its students I can say that this ratio is good. It is also important to mention that more than 90 percent of students from the Faculty of Sciences are budget financing students.
How would you say that Faculty of Sciences is equipped?	Faculty is relatively well equipped. However, in some segments there is a lack of necessary means, which is being overcome in various ways.	Over the past three years significant amount of new equipment has been bought for the Department of Chemistry, however, there are still needs for greater means and a lot of things need to be updated.	From the first and second question the answer to this one can be drawn. Very well equipped.
How well do you think that Faculty of Sciences is connected to labor market, and to what extent is it helping and advising students on their possible job search?	Faculty is not connected with labor market, which is not surprising since we are mostly talking about basic sciences, however, even in the cases when we are talking about applicative sciences the connections to the labor market are poor. For some departments of Faculty of Sciences I can say that praxis for most of the students is available, however, the situation with employment is completely different.	I do not have the answer to this question.	Over the past years the question of praxis has been mentioned continuously. The University is aiming at resolving this issue. As an example we can take students who are supposed to spend a certain amount of time in secondary schools as part of their studying praxis. Unfortunately, the organization of praxis usually comes down to the acquaintances. Over the last couple of years the quantity of more practical courses has been increased, however, it varies from one program to another so it is hard to make a general judgment on Faculty level.

table continues

continued

Question/lecturer	Assistant from Department of Geography, Tourism and Hotel Management	Professor from Chemistry Department	Professor from Mathematics and Informatics Department
What is your opinion about integration between Departments on Faculty of Sciences?	It is hard to talk about integration what so ever, since the only thing that connects departments are technical service, bureaucracy and vertical management system, which makes sense, since departments work on different fields and mostly do not have anything in common, nor influence each other. But in that sense I can say that they are integrated and function within the community which they form, and that is Faculty of Sciences.	Very good.	In my opinion the five departments are quite well integrated. Each Department has enough freedom to create its own policy. Additionally each department creates its own courses and studying programs. Moreover, the variety of fields which are being studied across five departments is well exploited in interdisciplinary terms.
What is your opinion regarding student teacher ratio at the Faculty of Sciences and in your lectures particularly?	This issue is slowly being resolved, however, there is still lack of teaching personnel, which ever-increasing number of students is worsening. Additionally, lack of facilities is not helping either.	I believe there is enough qualified teaching staff in comparison to the number of students	Over the last couple of years the number of students at the Faculty of Sciences is around 4000. The number of teaching staff is 200. Thus it can be concluded that that the ratio approximately is 1: 20. This ratio is satisfying for keeping the high quality level of teaching. This ratio is also very important in terms of the possibility for mentorship.
Do you have cooperation with students outside the obligatory material, and how would you describe it in terms of intensiveness and quality?	There is a variety of activities outside the compulsory ones. However, it is on students to decide whether they will participate or not. Surely, I tend to support every creative idea and initiative from students' side.	Yes, but the vast majority of students are not interested in any other activities but obligatory ones.	
Would you say that students use their chances to talk individually to their lecturers and do they show enough enthusiasm and interest in learning as much as they could?	Disinterest on the part of the students is evident and is increasing year by year. Consequently, their attention during the lectures is unsatisfying which is why their disinterest in using personal consultation to deepen their knowledge and make personal contact with lecturers is not surprising.	From my personal but also from my colleagues' experiences I can conclude that students are utterly uninterested in using personal consultations, majority of them may use them just before the exams.	It is very hard to give general remark to this question. However, I can say that at the Faculty of Sciences students are quite interested in the subject matter. The more they get into it the more interested they are, consequently, older students use individual consultations more often than students from 1st and 2nd year.

table continues

continued

Question/lecturer	Assistant from Department of Geography, Tourism and Hotel Management	Professor from Chemistry Department	Professor from Mathematics and Informatics Department
In two words how would you describe your relationship with students?	Very good.	Fair.	I am very pleased with my relationship with students. I teach mostly on 4th year, therefore, the groups are smaller so I have the opportunity to dedicate more time to each individual student. Additionally, through mentorship I establish very close and fair relationship with my students.
What is the number of students that you teach and what percentage of your students' names do you know?	For sure more than 100 students within different students groups and programs. Therefore, it is hard to remember the majority of names and last names even more so since all courses come down to one semester. However, I manage to remember 40% of those who are present on the lectures and exercises.	The course that I teach is attended by 120 students.	The largest group I teach consists of 60 students and the smallest of 20 students. In bigger groups I am familiar with 50 percent of students' names, and in smaller 100%.
Any other comments that you would like to add?	/	/	/

Since it is a qualitative research method, generalizations cannot be made. However, certain conclusion can be drawn. Mostly, the opinion among these three people is that conditions at the Faculty of Sciences are fairly good, especially in comparison to other faculties at the University of Novi Sad. Nevertheless, they stress room for improvement. From the second interview not many problems can be identified, except for the students' lack of interest. Even though all three interviews show that students rarely use opportunities to talk to teaching staff and expand their knowledge, first and third interviewees suggest possible explanation for such situation. Firstly, even tough all think that Faculty is well equipped, students do not have opportunity to use the equipment outside the obligatory lectures, which was seen also from secondary data. Additionally, certain departments do have lack of teaching staff, which is hampering the communication with students. Therefore, from this perspective, it can be said that students lack motivation, and reasoning behind such situation can be, as was said above, rare opportunities for usage of equipment, lack of mentorship and communication with teaching staff, as well as numerous other personal reasons. Moreover, from the first and second interview the gap between labor market and the University is identified, which also can explain why students lack enthusiasm, since, young people in Serbia experience lots of job finding difficulties which is why many feel disappointed.

4.4 Problems identified from the research

Within the marketing activities at the Faculty of Sciences which are described, what is identified as a potential problem is lack of adequate personnel who could efficiently and effectively work on marketing matters. Even though, as was already mentioned, it has certain marketing team, marketing activities are still not planned thoroughly, but are being decided ad hoc.

From the first year students' questionnaire, it is seen that majority of students come from high schools which needs to be considered in the sense that these students probably have a wide spectrum of interests. Therefore, the Faculty should aim to offer as many different activities as possible, from which all students would benefit. Furthermore, with regards to motives, majority of students claim their motives are "interest in subject matter", "to do the job I love" and "employability". However, there are other motives which should not be ignored. Firstly, the influence of a friend or parent as the main motive of enrollment is present. Secondly, some students claim their motives are "alternative to some other Faculty" and "just to gain student status". These two groups are relevant to consider since they could consist of those students who are most likely to drop out.

Furthermore, from the study on present students' satisfaction, what stands out from other issues is firstly, the matter of communication with teaching staff and secondly, the matter of opportunities at the Faculty in terms of internships during the studies. In terms of communication between lectures and students, three different views were the matter of the questionnaire: the readiness to answer to students' questions, the interaction on the lectures and tutorials' attendance. Even though very few students evaluated lecturers' readiness to provide students with answers as bad, there is still room for improvement. If a student asks a question it implies that he or she is interested in the topic, that he wants to explore and go further with his or her knowledge. Therefore, it is relevant to encourage such explorative spirit, especially when we talk about empirical sciences. If any explanation fails it is very likely that students' motivation is going to be reduced, which according to teaching staff is anyway at low level. In terms of communication a much bigger issue is interaction during the lectures, what secondary data also confirmed. The data reveal that the only department which does not face with this problem is Department of Mathematics and Informatics, where 40 percent of students say that interaction is excellent. The reasons behind this problem can be various. Firstly, the fact that Serbia is a transitional economy, thus, lacking necessary equipment which would enable both students and teachers to be creative. Secondary data have shown that students rarely have opportunities to use equipment of the Faculty outside the lectures and exercises. Secondly, changes at the higher education institutions which have been introduced in the past five years apparently need more time to be accepted. Not only are the financial issues causing such slow adaptation but also the fact that teachers, who are used to one way of teaching, need to update their material, way of teaching and communication with students. On the other hand, not all students are motivated enough or interested in becoming more involved in the process of learning. Additionally, in terms of communication it is relevant to consider student-teacher ratio, which, as can be seen from the general data, is 1: 20. Also one interviewee mentions this ratio and finds it satisfying. However, the interviewee from the Department of Geography, Tourism and Hotel Management claims that situation is far less than favorable, and this point of view is supported in the present students' satisfaction questionnaire. The problem is that in terms of teaching staff situation is not balanced, so, if we analyzed this ratio across departments, situation would be very different. The highest number of students at the Department of Geography, Tourism and Hotel Management definitely poses a problem to lecture and exercise organization leading to student dissatisfaction. Moreover, what the research showed to be disturbing is the tutorial attendance. Only 3.53 percent of all questioned students said that they go to more than 10 tutorials per year, and many of them stated that they do not use the opportunity to speak with the lecturer individually at all. Additionally, teaching staff from the Faculty also claim that students do not use the opportunity to exchange thoughts and ideas with them individually. Interviewees find that students lack motivation and that they do not show any interest in expanding their knowledge. This is rather concerning issue which needs to be addressed immediately, but also deeper analysis of why students behave like this and why they do not attend tutorials should be conducted.

When it comes to the opportunities which students have in terms of internships, even though at the Faculty's level opinions are split into half, when the data are observed individually for Departments, problems emerge. The greatest satisfaction is at Department of Biology and Ecology and Department of Geography, Tourism and Hotel Management. At the Department of Biology and Ecology students who are studying to receive teaching qualifications are very pleased with the opportunities provided by the Faculty. Moreover new opportunities have been created for students from this department after achieving cooperation with the University of Thailand. Additionally, from the Department of Geography, Tourism and Hotel Management favorable situation on this matter is explained by the fact that Faculty has its restaurant, as well as the fact that the Faculty has developed cooperation with Greece and Montenegro, where students spend summer doing their praxis. The most worrying situation is at the Department of Physics. It is straightforward to conclude that in Serbia, which is transitional economy, still there are not enough researches which could employ or provide internship to these students. This is why they are left with very little practical knowledge. Additionally, this can be connected to their dissatisfaction with opportunities for further development, which is why most of the students decide to do their masters or doctoral studies abroad. Additionally, Departments of Chemistry and Mathematics and Informatics should improve the opportunities which are provided to students, since also here percentage of dissatisfied students is large. Chapter 3 mentions the mediator between students and labor market. Center for Career development was firstly established in Belgrade in 2006. In Novi Sad this organizational unit has been working since 2008. However, the data from the present students' satisfaction questionnaire show that very few students have ever heard about this unit and among those who have heard even fewer have actually used its services. Nevertheless, it is relevant for the Faculty to pay attention to course content, since it is of great relevance to make sure that it is as far as possible related to what the market is looking for. The gap between labor market and the educational institutions is one of the biggest issues of higher education today. Not only can lack of communication cause serious unemployment difficulties, but it also jeopardizes both efficiency and effectiveness of the two. The data reveal that situation at the Faculty of Sciences is not favorable.

4.5.1 Recommendations regarding promotional activities

In terms of the marketing team within the Faculty, the main problem mentioned is lack of precise planning and determination when it comes to marketing activities. If we take into consideration that the law on higher education was changed in June 2010, now is the right time for the Faculty to include marketing unit as part of the Faculty's statute, which as a consequence of the law changed in June 2010 has to be adapted as well. This organizational unit should keep current structure, i.e. consist of a public relationship person and another employee who would in cooperation with committee for quality make sure that all relevant research is made. Additionally, the aim of the organizational unit should be optimization of financial resources planned for marketing activities, meaning that marketing activities should be carefully prepared and not ad hoc determined.

Furthermore, from the motives identified in the students' profile questionnaire, two groups are mentioned as the ones which should not be disregarded. Those are the students whose motives are "alternative to some other Faculty" and "just to gain student status". Students whose motives are "to do the job I love" and "interest in subject matter" are not the ones who will pay much attention to promotional activities. The Faculty of Sciences needs to be aware of which group of students in terms of their motives it targets with the promotional activities. In order to avoid any drop outs, it has to provide all the relevant information so that students could set their expectations on the level that will match the service which they will actually be provided with (Mai, 2005).

Bearing in mind that majority of students come from high schools, in order to satisfy them and broaden the content of what the Faculty provides to all students, different additional activities should be offered and presented in Faculties promotion activities. Those could be different workshops, which could be organized within individual departments, as well as the inclusion of interdisciplinary workshops. Even though the focus remains on fourth-grade students, information that some students make their decisions even before the fourth grade should not be ignored. Favorable relationship with these students could be made again through workshops or courses, where the focus would be on experimental part of the sciences which each student selects to explore. Additionally, contact with secondary school students could be achieved through Faculty's present students. Namely, there are a lot of students at the Faculty who are thinking of taking up teaching profession. Therefore, by attaining good cooperation with secondary schools, internships for present students could be established, who would, with the assumption that they are satisfied with their choice and loyal to the institution, by word of mouth contribute significantly to the well being of the Faculty (Wetzels, De Ruyter & Van Birgelen, 1998).

Furthermore, what is confirmed to have effect in terms of promotional activities is promotion in secondary schools, thus the focus should be on this means of promotion. The promotion should include a lot of visual material, since it is proved to be the most effective way to present any information to the public. Teaching staff from different age groups could be involved. The elder ones would be in charge of presenting the quality of teaching and activities related to that, while pupils could ask younger employees questions which they are interested in. Moreover, faculty open day could be organized, which would be a good way for students to get a clear idea from inside the institution about how their student days would look like.

As far as the visual identity is concerned it should remain focused on 19 year old students' profile. Since it is seen that students who enroll at the Faculty are to a great extent interested in subject, the perception that at the Faculty of Sciences they will get the chance to work with up to date technology and hear the latest developments from theory and practice, should be maintained. However, bearing in mind that these are young people who want to experience student life and everything that it includes, the perception of the Faculty must not be too strict, but should also emphasize the great overall experience that Faculty of Sciences has to offer within University of Novi Sad.

Moreover, the increasing importance nowadays is put on social networks, Facebook being the most significant one. Here, potential students can also get the idea of how this institution operates, but also students can overcome possible barriers and ask questions which he or she might not ask in person. Therefore, the Faculty should be present on these networks, where the most interesting events should be presented.

In the media the Faculty should continue with billboard activities. However, since billboards are proved to be effective only for two weeks, the periods of putting up billboards should be chosen carefully. Decisions are made in the second semester of the fourth grade, thus there could be two different billboards, from which one wave would be made public in February, after the students come from their winter break, while the other one would be put out in June.

Nevertheless, promotional activities cannot be directed solely to students. The Faculty has to be aware of other groups which have influence on decisions. Results from first year students' questionnaire showed that the most influential groups are friends and relatives. On the one hand this could be friends, who are already enrolled at the Faculty, which again emphasizes the importance of students' satisfaction and word of mouth relevance. On the other hand, the influence can come from a friend who is the same age as the potential student of the Faculty of Sciences, not considering Faculty of Sciences for him or herself, but has a positive opinion about the institution and supports friend's choice to enroll at the Faculty. Additionally, parents are a very important group. Therefore, certain promotional activities should be targeted at them. Mostly these activities should refer to television shows, which have to be at serious level, and of informative type, mostly on local TV stations, such as TV Vojvodina and Panonija, where representatives of the Faculty should present the institution as high quality one, with high standards, offering a lot of opportunities for specialization and ensuring prospective future for those who complete it.

4.5.2 Recommendations for achieving greater satisfaction from students' side and increasing their loyalty

In terms of the core service which the Faculty provides, a lot depends on the teaching process. What faculties have to bear in mind is the fact that in past couple of years Serbian students have been given greater opportunities in terms of choice. Not only are mobility programs offered, but also, with the abolishment of visa regime, possibilities are wider. That combined with even slightest dissatisfaction on the part of the students can result in students leaving faculties or immediately deciding to study abroad. From the above analyzed data it is seen that students are not satisfied with the communication with teaching staff, thus, more emphasis should be put on relationship marketing. Theory on relationship marketing suggests participation as influential factor that should be applied when trying to improve relationships between students and teaching staff (Arnett, German & Hunt, 2003). Data on interaction reveal that students are still not involved enough into the process of teaching. Halbesleben, Becker and Buckley (2003) argue that universities should encourage students to put more effort in order to benefit as much as possible from the educational institutions, which would increase their satisfaction with the service. The question to what degree students will get involved then depends on motivation. This is where the role of teaching staff is of key importance. Several theories are suggested as solutions to the problems of involvement. Firstly, reinforcement theory represents the foundation of motivation. This means that students have to understand that by involving themselves more in their own education they will be rewarded. Surely, the final reward is higher quality of their education. However, this has to be reinforced in the short term in order to have more tangible benefits of their work. This means that teaching staff at the Faculty of Sciences, should pay more attention to what students have done, which means that if they did some additional reading which was required, that should be acknowledged, not only by giving extra course points, but also by discussing matters from the reading with students. Secondly, in order to encourage students to put more effort into the studies Vroom (cited in Halbesleben, Becker & Buckley, 2003, p. 256) suggests expectancy theory, which implies that in order to motivate students they have to believe that the reward can be attained and value it, as well as seeing it as a product of their own work. Very often students find themselves in the situation when a task which requires a lot of effort makes up only a small part of the grade. It is clear that such approach will not result in increased participation. Students should be given different creative tasks to perform, and they have to be valued. Finally, in terms of motivation, goal setting theory is proposed. It suggests challenging students by motivating them to set goals at the beginning and to help them achieve them by the end of the course. Therefore, teachers could ask students at the first lecture to set their goals on the grade, which would give both students and teachers a final point towards which they can work together. The long term benefit for students is better quality, therefore, better satisfaction, which will provide benefits for the institution in terms of building good reputation and enjoying the benefits of word of mouth recommendation. This implies reciprocal relationship or that by nurturing good relationships both parties will benefit.

Furthermore, the problem of links between labor market and Faculty is identified. The output of good communication is better situation when it comes to statistical data on employment. However, in terms of present students, focus remains on providing better opportunities for gaining practical knowledge in terms of internships and different trainee programs. In terms of University of Novi Sad, more specific issue identified is low awareness of Center for Career Development, whose main goal is to enhance this communication. Even though there are many other things that need to be done in terms of Center's operation, such as the web page updates, it seems that there is a big problem of students' awareness of the Center. The awareness can be increased in many ways. First of all, the link for Center for Career Development should be put on every Faculty's web page, which currently is not the case. Secondly, presentations on the Faculties should be held where students would be informed about the services which the Center offers free of charge. Additionally, every year AIESEC organizes Career days, manifestation where different companies have their stalls and search for right potential employees. Here, Center for Career Development could also contribute to the event and thus, improve its awareness among students. It is also stated that course content needs to be adapted to the demands of labor market. Surely, we live in the time where everything is changing so quickly that it is impossible to follow every little alteration, however, it is important for higher education institutions to have a clear idea on what labor market demand is and which relevant knowledge they should provide students with. Therefore, the data regarding the course applicability ought to be continuously followed, based on which certain updates should be made. However, it must not be judged solely based on students' perceptions, since probably none of these students have been employed, therefore, their estimations can be biased.

Apart from the problems identified at the Faculty of Sciences, there are many other ways to increase students' loyalty and feeling of belonging to the certain society group, which is considered to be one of the most influential factors for achieving loyalty and commitment (Misra & McMahon, 2006). It is believed that social belonging is what actually transfers into satisfaction. Interestingly, one survey found that satisfaction had a greater influence on academic performance than performance had on satisfaction. Furthermore, it is considered of great relevance to perceive quality of service not just on academic or teaching criteria, but also on the extent to which the student enjoys campus life (Pitman, 2000). Activities that would add to overall experience should be organized by University. The best manner to encourage a feeling of belonging is to organize different kinds of events which should involve team work. Moreover, in terms of social interaction the favorable structure and position of University campus, which was mentioned before, should be used. Not only is it favorable that almost all Faculties are close to each other, but also there are different sport facilities right next to campus. This could be used to organize different sports competitions. Additionally, University should offer to its students a variety of other content. For example, from this year University' choir is promoted and all interested students and teachers are asked to join. Continuing with music activities, orchestra could be formed. Also, University could support young bands whose members are students by organizing once per year a concert at the students' square. By sponsoring such an event, University of Novi Sad should also motivate and invite students from all Faculties to give their contribution. In the program, drama students could perform a play, while for instance students from the Faculty of Economics could be involved in terms of organization where they could apply some of the managerial skills which they gain during their studies. Other existing activities which should be continued are Science Fair and Night of Explorers, which was held in October 2010 for the first time (see Appendix H). This cooperation between University and students can be achieved through students' parliament, which should invite all interested students to get involved.

In order to make students feel more comfortable ("having a home away from home") in terms of organizational culture, small, but significant things could be done. Therefore, the classrooms could be painted in lively colors since it is proved that they are good for studying environment. More plants and other relevant content depending on the faculty should be put in halls and classrooms. Additionally, libraries could be arranged for students to feel comfortable to stay there and read, in terms of armchairs, etc. In addition to this, the entrance to University Campus could be marked, so that students and everybody else would have the feeling that they are now in the students' village. "I heart UNS" sign could be set at the main entrance of the University campus and should represent a trade mark of the University where graduate students could take their pictures and put their names on the trade mark sign (see Appendix I).

CONCLUSION

"The knowledge society will inevitably become far more competitive than any society we have yet known— for the simple reason that with knowledge being universally accessible, there will be no excuses for non-performance. There will be no "poor" countries. There will only be ignorant countries."

Peter Drucker (1994, p. 68)

Theoretical part of the thesis provides relevant information about all the elements which are part of higher education sector. The aim was to stress the increasing importance of marketing activities within higher education market which is becoming fiercer than ever. Furthermore, in order to provide a clear picture of what the situation is like in Serbia, changes in the past decade within sector of higher education were described. In addition to this, specific information is given regarding University of Novi Sad, from which strengths and weaknesses of this institution are described. In order to apply the theory, bearing in mind the situation in the country and at the University of Novi Sad research at the Faculty of Sciences followed. The research which was done at the Faculty of Sciences includes primary and secondary research. Primary research consists of two questionnaires, one aiming at determining students' profile and the other one their satisfaction, and interviews with teaching staff. From the results problems emerged and recommendations to the Faculty of Sciences were developed. Additionally, certain activities suggested refer to the Faculty of Sciences, while others are suggested to be integrated and carried out at the University level.

Firstly, in terms of the marketing team within the Faculty, the time is seen as right to include marketing unit as part of the Faculty's statute, which as a consequence of the Law changed in June 2010 has to be adapted as well. The aim of the unit should be optimization of financial resources planned for marketing activities, which would improve the effectiveness of the entire marketing strategy since activities would be carefully prepared and not ad hoc determined.

Secondly, focus is put on promotional activities, which are more relevant when targeting students who are indecisive. Different tools are suggested, such as billboards, school presentations, social networks, etc. In addition to this, emphasis is put on word of mouth recommendations, in terms of present students who think highly about the institution and therefore, can contribute significantly to the Faculty's number of enrollments. Moreover, the focus must not be solely on students, since other groups are found influential. The most important ones determined are friends and relatives, thus, promotional activities that refer to them must not be overlooked.

Thirdly, recommendations regarding present students' satisfaction are given. They aim at resolving two problems that are identified as the most concerning ones. Those are lack of communication with teaching staff and poor linkage with labor market. Aiming to enhance communication, reinforcement, expectancy and goal setting theory are suggested as starting point. They are supposed to encourage better interaction between students and lecturers and increase students' motivation. As far as links with labor market are concerned, it is believed that University should involve more resources in order to improve the situation. Since Center for Career Development is organizational unit of the University, University has to aim at improving its operation.

Finally, apart from the teaching process, it is concluded that University itself has to provide students with additional activities that would significantly add to the overall experience at the University of Novi Sad. Role of the lecturers, faculties and universities as educational institutions is not only to educate students in terms of the knowledge which they get from the books, but also to make sure that these people have the opportunity to explore and evolve as individuals, to be creative, tolerant and inventive. When it comes to young people, it is hard to draw general suggestions and apply them as such. Each student is individual and every lecturer has to be aware of that fact. For these very reasons, this represents the inexhaustible area of research. Every educational institution has to make sure that it follows how its students are evolving and changing in order to be able to provide them with best possible service. There are still open issues such as administrative part of the service and students' opinions of current activities that refer to the social belonging, that are not examined. Therefore, I hope to be able to continue the research on this matter in the future.

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APPENDICES

LIST OF APPENDICES

Appendix A: Media plan

A-1: Media plan September 2008
Media type: Novi Sad TV stations

MEDIA PLAN PMF I OPTOMETRIJA – SEPTEMBAR 08.

R. br	PRILOG	TV STANICA	TERMIN
1	PMF general-skraćeni OPTOMETRIJA skr.	TV SUPER	21.08.08. 22.30h
2	PMF general-skraćeni OPTOMETRIJA skr.	RTV DELTA	21.08.08. 21.00h
3	PMF general-skraćeni OPTOMETRIJA skr.	RTV JESENJIN	22.08.08. 17.30h
4	PMF general-skraćeni OPTOMETRIJA skr.	TV SUPER (repriza)	22.08.08. 14h
5	PMF general-skraćeni OPTOMETRIJA skr.	RTV DELTA (repriza)	23.08.08. 16h
6	PMF general-skraćeni OPTOMETRIJA skr.	RTV JESENJIN (repriza)	24.08.08. 08.30h
7	PMF general-skraćeni OPTOMETRIJA skr.	TV SUPER	28.08.08. 22.30h
8	PMF general-skraćeni OPTOMETRIJA skr.	RTV DELTA	28.08.08. 21.00h
9	PMF general-skraćeni OPTOMETRIJA skr.	RTV JESENJIN	29.08.08. 17.30h
10	PMF general-skraćeni OPTOMETRIJA skr.	TV SUPER (repriza)	29.08.08. 14h
11	PMF general-skraćeni OPTOMETRIJA skr.	RTV DELTA (repriza)	30.08.08. 16h
12	PMF general-skraćeni OPTOMETRIJA skr.	RTV JESENJIN (repriza)	31.08.08. 08.30h

A-2: Media Plan August 2008
Media type: local and regional TV stations

Klijent: PMF
Kampanja: optometrija
Trajanje: (18.08. ili 19.08.2008.)
Vrsta medija: lokalne i regionalne TV stanice
Sredstva: reportaže (4 minuta)
Investicija: 110.000,00
Ralizacija kampanje: 10.000,00

Mreža 12 TV stanica	Termini
Subotica: TV Yu eko	18.08. od 19:00
Sombor: TV Spektar	19.08. 18:30, 21:30
Zrenjanin: TV Santos(regionalna)	18.08. od 18:30 (repriza sutra dan pre podne)
Vršac: TV Panovizija	18.08. i 19.08. 11:00 i 19:00
Kikinda: TV VK (regionalna)	18.08. 19:00 i 21:00
Pančevo: TV Pančevo	18.08. od 19:00
Šabac: TV AS	19.08. od 19:00
Čačak: TV Čačak	18.08. od 19:00
Kraljevo: TV Kraljevo	18.08. od 19:00
Kragujevac: TV Kragujevac	18.08. od 19:00 do 20:00 (repriza sutra dan pre podne)
Kruševac: TV Kruševac (regionalni)	18.08. od 18:00
Niš: TV Belle amie	18.08. od 19:00

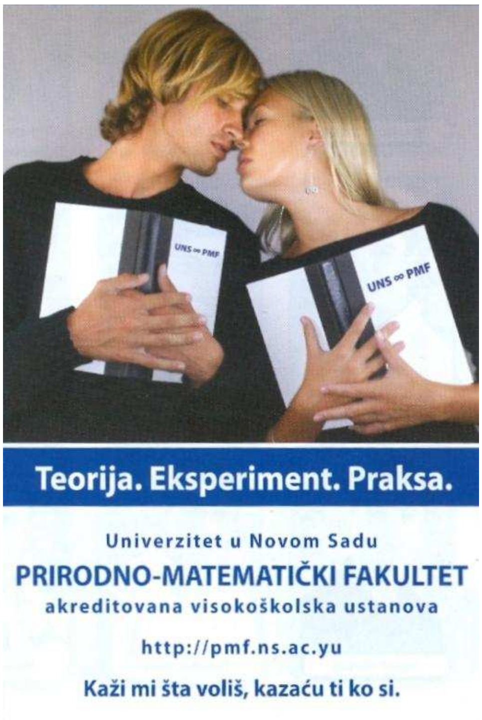
A-3: Media Plan August 2008
Media type: radio stations

Klijent: PMF
Kampanja: optometrija
Trajanje: 11.08. - 25.08.2008.
Vrsta medija: lokalne i regionalne radio stanice
Sredstva: Maska (11 sekundi), 5 puta dnevno
Investicija: 133.325,00

Subotica: Radio Subotica
Sombor: Radio Sombor (regionalni)
Novi Kneževac: Radio City NK
Bačka Topola: Radio Srednja Bačka
Senta: Radio No limit
Bečej: Radio Bečej
Odžaci: Radio Blue (regionalni)
Zrenjanin: Radio Santos
Vrbas: Radio Vrbas (regionalni)
Vršac: Max Radio
Kikinda: Radio Kikinda
Novi Sad: Radio 021
Inđija: Radio Inđija
Beograd: Radio Top FM
Šabac: Radio AS
Valjevo: Radio Patak (regionalni)
Despotovac: Radio Despotovac
Požarevac: Radio Boom 93
Užice: Radio Luna (regionalni)
Čačak: Radio Ozon
Kraljevo: Radio M
Kragujevac: Radio Bravo
Svilajnac: Radio Čičica
Ćuprija: Radio Dak
Paraćin: Radio Paraćin
Bor: K2 Radio
Negotin: Radio Krajina (regionalni)
Brus: Radio Brus
Kruševac: Radio Kruševac (regionalni)
Sokobanja: Radio Sokobanja
Prokuplje: Radio Srce
Niš: City Radio
Novi Pazar: Radio Sto plus (regionalni)
Vranje: OK Radio
Pirot: Radio sport plus
Kosovska Mitrovica: Radio Kosovska Mitrovica -**BONUS**

Appendix B: Examples of Marketing Activities at the Faculty of Sciences

B-1: Faculty of Sciences billboards from marketing campaign in 2008 (“Tell me what you like, I’ll tell you who you are”; “Theory, Experiment, Praxis”)



B-2: Brochure for Faculty of Sciences 2009

Appendix C: Students' profile survey (original version in Serbian)

ANKETA ISTRAŽIVANJE U OKVIRU MASTER RADA NA TEMU BRENDIRANJE UNIVERZITETA U NOVOM SADU, SA OSVRTOM NA PRIRODNO-MATEMATIČKI FAKULTET

Cilj ove ankete je prikupljanje podataka od strane studenata prve godine Prirodno-matematičkog fakulteta, koji se odnose na generalne podatke o studentima i o njihovom ponasanju u toku donosenja odluke o buducim studijama.

Markirajte željene odgovore.

1. Vaš prvi izvor infomisanja o PMF-u je:		
Prijatelji i rodbina		
Televizija		
Radio		
Novine		
Internet		
Prezentacija fakulteta u srednjoj školi		
Sajam obrazovanja		
Drugo:		
2. Kada ste doneli odluku o upisu na PMF?		
Pre srednje škole		
U periodu od I do III razreda srednje škole		
U prvom polugodištu IV razreda		
U drugom polugodištu IV razreda		
Neposredno pre prijemnog ispita		
Drugo:		
3. Koji je bio Vaš motiv upisa na PMF?		
Zainteresovanost za materiju		
Naučno-istraživački rad		
Pogodna lokacija fakulteta		
Uticaj prijatelja		
Uticaj roditelja		
Da radim posao koji volim		
Dobre mogućnosti za zapošljavanje nakon fakulteta		
Alternativa nekom drugom fakulteta		
Samo da nešto upišem		
Drugo:		
4. Da li ste pohađali pripremnu nastavu koja je organizovana od strane fakulteta?		
Da		
Ne		
5. Opšti podaci (molimo Vas da u prazna polja upišite informacije):		
5.1. Pol:	Muški	Ženski
5.2 Departman:		
5.3 Završena srednja škola:		
5.4 Mesto:		

HVALA NA SARADNJI!

Appendix D: Present students' satisfaction survey (original version in Serbian)

ANKETA

ISTRAŽIVANJE U OKVIRU MASTER RADA NA TEMU BRENDIRANJE UNIVERZITETA U NOVOM SADU, SA OSVRTOM NA PRIRODNO-MATEMATIČKI FAKULTET

Cilj ove ankete je prikupljanje podataka vezanih za kvalitet nastave i aktivnosti studenata u toku studiranja. Anketa je anonimna, a prikupljeni podaci će se koristiti isključivo u naučne svrhe.

Markirajte željene odgovore.
* U pitanjima 1,2 i 7 ocenite navedene tvrdnje ocenom od 1-5, pri cemu 1 znaci ni malo se ne slazem, 3 uglavnom se slazem, 5 potpuno se slazem

1. Moja očekivanja pre upisa na fakultet su se poklopila sa onim što fakultet pruža*				
1	2	3	4	5
2. Zadovoljan/zadovoljna sam sa mogućnostima koje Prirodno matematički fakultet pruža u smislu daljeg usavršavanja studenata*				
1	2	3	4	5
3. Kako biste ocenili spremnost nastavnika za dodatna pitanja, objasnjenja i diskusije u toku predavanja (1 - nedovoljna, 5 - odlična).				
1	2	3	4	5
4. Kakvo je Vaše mišljenje o interakciji u proseku na predavanjima ukoliko uzmete u obzir sva predavanja na kojima ste prisustvovali u toku godine:				
Odlična	Veoma dobra	Dobra	Zadovoljavajuća	Nezadovoljavajuća
5. Kakvo je Vaše mišljenje o usklađenosti vežbi i predavanja?				
Odlična	Veoma dobra	Dobra	Zadovoljavajuća	Nezadovoljavajuća
6. Koliko korisni mislite da su predmeti koje slušate na Fakultetu za vašu buduću profesiju:				
Sasvim korisni	Veoma korisni	Korisni	Delimično korisni	Uopšte nisu korisni
7.Literatura koja je dostupna je adekvatna za savladavanje gradiva*				
1	2	3	4	5
8. Student osim na predavanjima sa nastavnikom moze komunicirati:				
Uzivo (konsultacije i sl.)	Elektronskom postom	Online	Drugo:	Nikako
9. Na koliko ste konsultacija otišli u toku ove godine:				
Ni na jedne	Od jedan do tri	Od četiri do šest	Od sedam do devet	Više od deset
10. Kakvo je Vaše mišljenje o broju predavača u odnosu na broj studenata:				
Premalo predavača	Proporcionalno	Previše predavača	Ne znam	
11. Da li ste zainteresovani za rad u struci tokom školovanja(firma, škola, itd.):				
Da	Ne	Ne znam		
12. Da li ste čuli za Centar za razvoj karijere:				
Da.	Ne			
12.1. Da li ste **koristili** usluge koje ta organizacija nudi?				
Da	Ne			

table continues

continued

<table>
<tr><td colspan="6">13. Kako biste ocenili saradnju Prirodno matematičkog fakulteta sa ostalim fakultetima Univerziteta u Novom Sadu?</td></tr>
<tr><td>Odlična</td><td>Veoma dobra</td><td>Solidna</td><td colspan="2">Slaba</td><td>Nedovoljna</td></tr>
<tr><td colspan="6">14. Klasifikacija(u prazna polja upišite informacije)</td></tr>
<tr><td rowspan="6">14.1. Pol:</td><td rowspan="4">Ženski</td><td rowspan="6">14.2. Godina studija:</td><td>I</td><td colspan="2">14.3.1. Departman:</td></tr>
<tr><td>II</td><td colspan="2" rowspan="3"></td></tr>
<tr><td>III</td></tr>
<tr><td>IV</td></tr>
<tr><td rowspan="2">Muški</td><td rowspan="2">V</td><td colspan="2">14.3.2. Usmerenje(smer):</td></tr>
<tr><td colspan="2"></td></tr>
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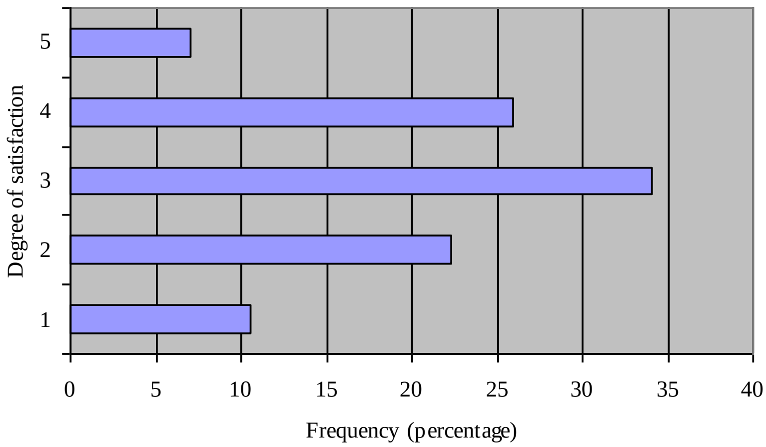
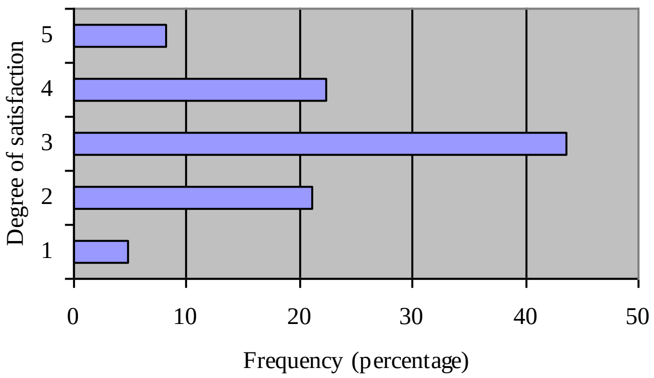
HVALA NA SARADNJI!

Appendix E: General students' evaluation of issues from current students' satisfaction questionnaire

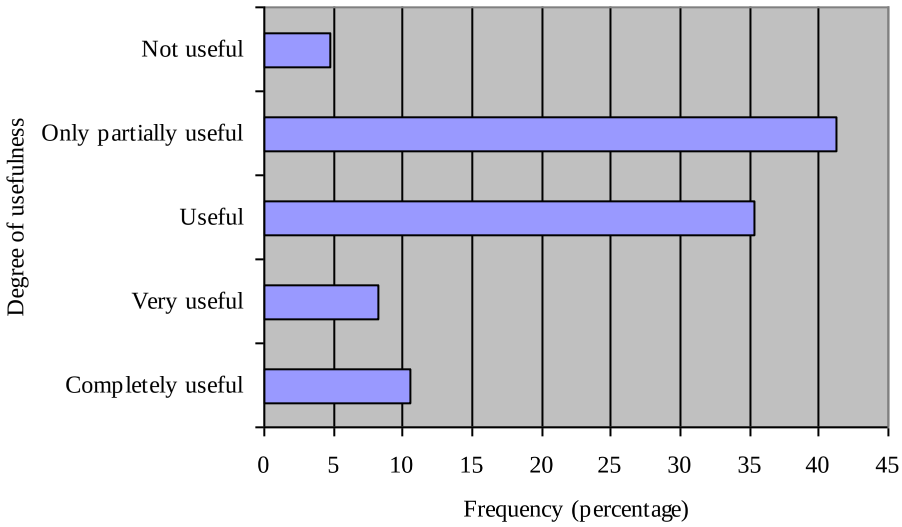
E-1: Overall students' satisfaction



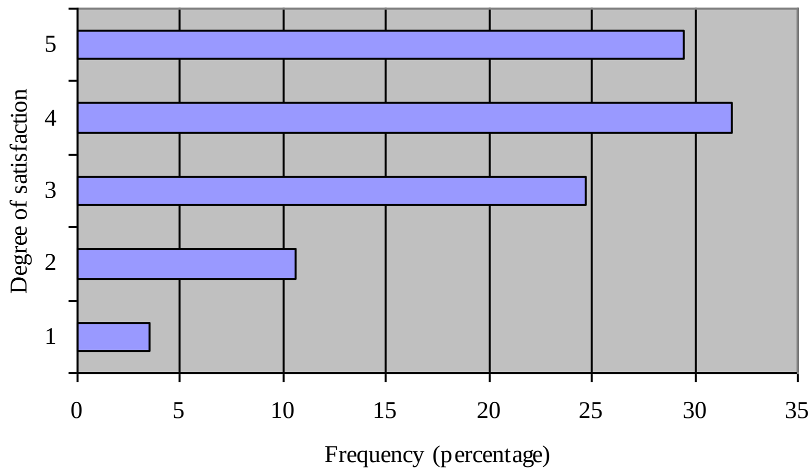
E-2: Students' evaluation of opportunities for further development



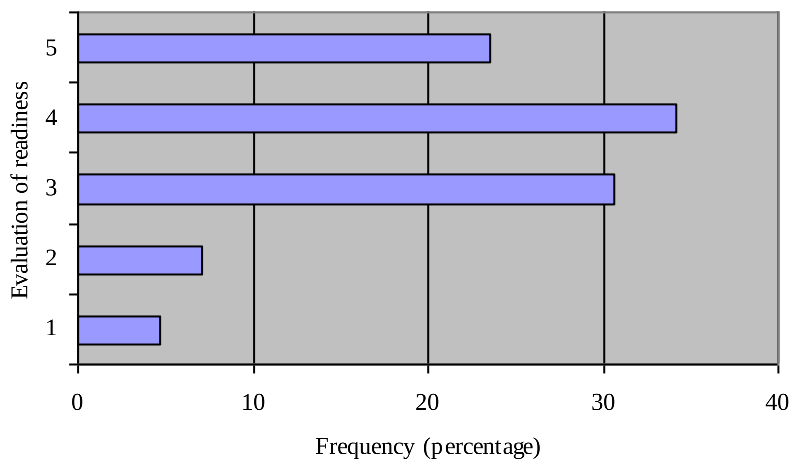
E-3: Usefulness of the courses relatively to the labor market trends



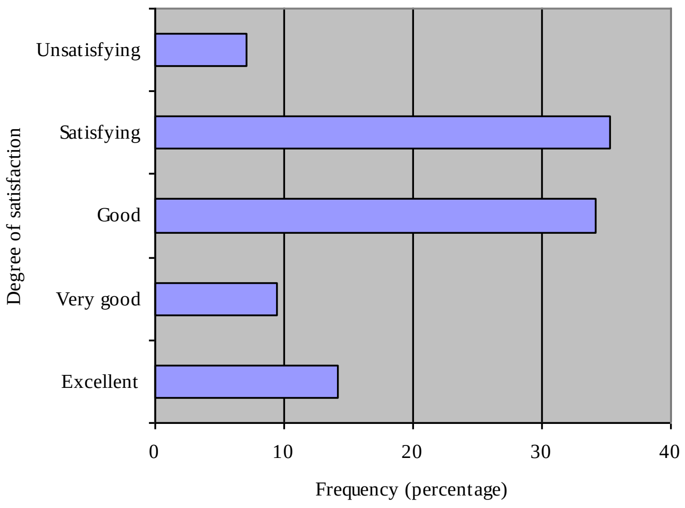
E-4: Evaluation of literature



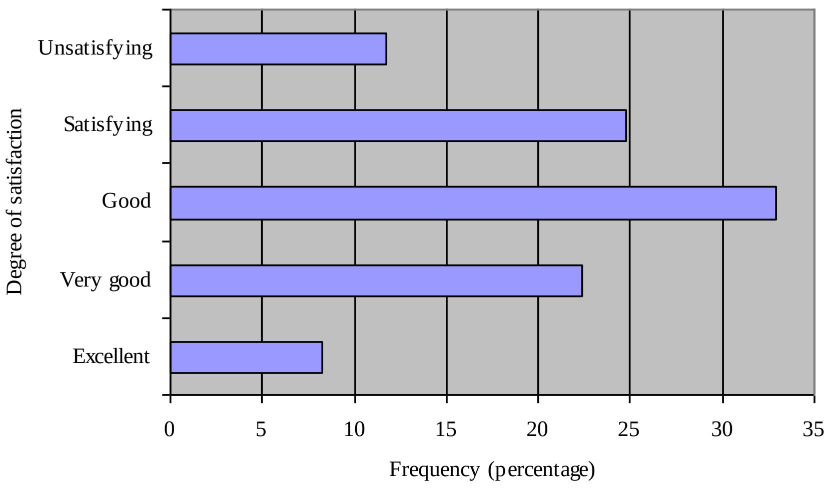
E-5: Students' evaluation of lecturers' readiness to provide answers



E-6: Students' evaluation of overall interaction with teaching staff



E-7: Students' evaluation of lecture-exercise ratio



Appendix F: Hypothesis testing

Hypotheses were set in the manner that three answers which represent less favorable part of the scale and two others with positive connotation are grouped.

Hypothesis Tests for expectations
Sample mean = 2.96471
Sample median = 3.0
Sample standard deviation = 1.09596

t-test
Null hypothesis: mean = 4.0
Alternative: not equal

Computed t statistic = -8.70923
P-Value = 0.0

Reject the null hypothesis for alpha = 0.05.

Frequency Table for expectations

			Relative	Cumulative	Cum. Rel.
Class	**Value**	**Frequency**	**Frequency**	**Frequency**	**Frequency**
1	1	9	0.1059	9	0.1059
2	2	19	0.2235	28	0.3294
3	3	29	0.3412	57	0.6706
4	4	22	0.2588	79	0.9294
5	5	6	0.0706	85	1.0000

Hypothesis Tests

Sample proportion = 0.6706
Sample size = 85

Approximate 95.0% confidence interval for p: [0.560172,0.768751]

Null Hypothesis: proportion = 0.5
Alternative: not equal
P-Value = 0.00219492
Reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.6706. Since the P-value for the test is less than 0.05, the null hypothesis is rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.560172 and 0.768751.

Hypothesis Tests for possibilities for further development
Sample mean = 3.08235
Sample median = 3.0
Sample standard deviation = 0.97848

t-test
Null hypothesis: mean = 4.0
Alternative: not equal

Computed t statistic = -8.64636
P-Value = 0.0
Reject the null hypothesis for alpha = 0.05.

Frequency Table for possibilities for further development

			Relative	Cumulative	Cum. Rel.
Class	**Value**	**Frequency**	**Frequency**	**Frequency**	**Frequency**
1	1	4	0.0471	4	0.0471
2	2	18	0.2118	22	0.2588
3	3	37	0.4353	59	0.6941
4	4	19	0.2235	78	0.9176
5	5	7	0.0824	85	1.0000

Hypothesis Tests

Sample proportion = 0.6941
Sample size = 85

Approximate 95.0% confidence interval for p: [0.584716,0.789497]

Null Hypothesis: proportion = 0.5
Alternative: not equal

P-Value = 0.000447213
Reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.6941. Since the P-value for the test is less than 0.05, the null hypothesis is rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.584716 and 0.789497.

Hypothesis Tests for readiness to provide questions
Sample mean = 3.64706
Sample median = 4.0
Sample standard deviation = 1.06576

t-test
Null hypothesis: mean = 4.0
Alternative: not equal

Computed t statistic = -3.05317
P-Value = 0.00303231
Reject the null hypothesis for alpha = 0.05.

Frequency Table for readiness to provide questions

			Relative	Cumulative	Cum. Rel.
Class	**Value**	**Frequency**	**Frequency**	**Frequency**	**Frequency**
1	1	4	0.0471	4	0.0471
2	2	6	0.0706	10	0.1176
3	3	26	0.3059	36	0.4235
4	4	29	0.3412	65	0.7647
5	5	20	0.2353	85	1.0000

Hypothesis Tests

Sample proportion = 0.4235
Sample size = 85

Approximate 95.0% confidence interval for p: [0.316979,0.535509]

Null Hypothesis: proportion = 0.5
Alternative: not equal
P-Value = 0.19276
Do not reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.4235. Since the P-value for the test is greater than or equal to 0.05, the null hypothesis cannot be rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.316979 and 0.535509.

Frequency Table for interaction

			Relative	Cumulative	Cum. Rel.
Class	**Value**	**Frequency**	**Frequency**	**Frequency**	**Frequency**
1	Good	29	0.3412	29	0.3412
2	Unsatisfying	6	0.0706	35	0.4118
3	Excellent	12	0.1412	47	0.5529
4	Very good	8	0.0941	55	0.6471
5	Satisfying	30	0.3529	85	1.0000

Hypothesis Tests

Sample proportion = 0.2341
Sample size = 85

Approximate 95.0% confidence interval for p: [0.14904,0.338432]

Null Hypothesis: proportion = 0.5
Alternative: not equal
P-Value = 0.00000102989
Reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.2341. Since the P-value for the test is less than 0.05, the null hypothesis is rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.14904 and 0.338432.

Frequency Table for lectures exercises ratio

Class	Value	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
1	Good	28	0.3294	28	0.3294
2	Unsatisfying	10	0.1176	38	0.4471
3	Excellent	7	0.0824	45	0.5294
4	Very good	19	0.2235	64	0.7529
5	Satisfying	21	0.2471	85	1.0000

Hypothesis Tests

Sample proportion = 0.3059
Sample size = 85

Approximate 95.0% confidence interval for p: [0.210503,0.415284]

Null Hypothesis: proportion = 0.5
Alternative: not equal
P-Value = 0.000447199
Reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.3059. Since the P-value for the test is less than 0.05, the null hypothesis is rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.210503 and 0.415284.

Frequency Table for courses usefulness

Class	Value	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
1	Partially useful	35	0.4118	35	0.4118
2	Useful	30	0.3529	65	0.7647
3	Completely useful	9	0.1059	74	0.8706
4	Not useful	4	0.0471	78	0.9176
5	Very useful	7	0.0824	85	1.0000

The StatAdvisor
This table shows the number of times each value of korisnost occurred, as well as percentages and cumulative statistics. For example, in 35 rows of the data file korisnost equaled delimicno korisni. This represents 41.1765% of the 85 values in the file. The rightmost two columns give cumulative counts and percentages from the top of the table down.

Hypothesis Tests
Sample proportion = 0.1883
Sample size = 85

Approximate 95.0% confidence interval for p: [0.111647,0.287679]

Null Hypothesis: proportion = 0.5
Alternative: not equal
P-Value = 5.24027E-9
Reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.1883. Since the P-value for the test is less than 0.05, the null hypothesis is rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.111647 and 0.287679.

Frequency Table for literature adequacy

Class	Value	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
1	1	3	0.0353	3	0.0353
2	2	9	0.1059	12	0.1412
3	3	21	0.2471	33	0.3882
4	4	27	0.3176	60	0.7059
5	5	25	0.2941	85	1.0000

Hypothesis Tests for literature adequacy
Sample mean = 3.72941
Sample median = 4.0
Sample standard deviation = 1.10613

t-test
Null hypothesis: mean = 4.0
Alternative: not equal

Computed t statistic = -2.25534
P-Value = 0.0267122
Reject the null hypothesis for alpha = 0.05.

Hypothesis Tests
Sample proportion = 0.3882
Sample size = 85

Approximate 95.0% confidence interval for p: [0.284346,0.500081]

Null Hypothesis: proportion = 0.5
Alternative: not equal
P-Value = 0.0502509
Do not reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.3882. Since the P-value for the test is greater than or equal to 0.05, the null hypothesis cannot be rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.284346 and 0.500081.

Frequency Table for means of communication

			Relative	Cumulative	Cum. Rel.
Class	**Value**	**Frequency**	**Frequency**	**Frequency**	**Frequency**
1	Via e-mail	7	0.0824	7	0.0824
2	I don't communicate	3	0.0353	10	0.1176
3	In person	75	0.8824	85	1.0000

Frequency Table for tutorials' attendance

			Relative	Cumulative	Cum. Rel.
Class	**Value**	**Frequency**	**Frequency**	**Frequency**	**Frequency**
1	10 and more	3	0.0353	3	0.0353
2	0	25	0.2941	28	0.3294
3	From 1 to 3	38	0.4471	66	0.7765
4	From 4 to 6	17	0.2000	83	0.9765
5	From 7 to 9	2	0.0235	85	1.0000

Hypothesis Tests

Sample proportion = 0.7432
Sample size = 85

Approximate 95.0% confidence interval for p: [0.636944,0.831868]

Null Hypothesis: proportion = 0.5
Alternative: not equal
P-Value = 0.00000982557
Reject the null hypothesis for alpha = 0.05.

The StatAdvisor
This analysis shows the results of performing a hypothesis test concerning the proportion (theta) of a binomial distribution. The two hypotheses to be tested are:

Null hypothesis: theta = 0.5
Alternative hypothesis: theta <> 0.5

In this sample of 85 observations, the sample proportion equals 0.7432. Since the P-value for the test is less than 0.05, the null hypothesis is rejected at the 95.0% confidence level. The confidence interval shows that the values of theta supported by the data fall between 0.636944 and 0.831868.

Appendix G: In-depth analysis of students' evaluation across departments

G-1: Students' evaluation of the overall service of the Faculty of Sciences

Evaluation / Students per department	1	2	3	4	5	Row Total
Biology and Ecology	0	5	8	1	0	14
	0.00%	35.71%	57.14%	7.14%	0.00%	16.47%
Physics	5	5	1	6	0	17
	29.41%	29.41%	5.88%	35.29%	0.00%	20.00%
Geography, Tourism and Hotel Management	2	3	9	8	0	22
	9.09%	13.64%	40.91%	36.36%	0.00%	25.88%
Chemistry	2	3	7	5	0	17
	11.76%	17.65%	41.18%	29.41%	0.00%	20.00%
Mathematics and Informatics	0	3	4	2	6	15
	0.00%	20.00%	26.67%	13.33%	40.00%	17.65%
Column Total	9	19	29	22	6	85
	10.59%	22.35%	34.12%	25.88%	7.06%	100.00%

G-2: Students' evaluation of possibilities for further development

Evaluation / Students per department	1	2	3	4	5	Row Total
Biology and Ecology	0	1	12	1	0	14
	0.00%	7.14%	85.71%	7.14%	0.00%	16.47%
Physics	1	8	4	2	2	17
	5.88%	47.06%	23.53%	11.76%	11.76%	20.00%
Geography, Tourism and Hotel Management	1	3	11	7	0	22
	4.55%	13.64%	50.00%	31.82%	0.00%	25.88%
Chemistry	2	4	5	6	0	17
	11.76%	23.53%	29.41%	35.29%	0.00%	20.00%
Mathematics and Informatics	0	2	5	3	5	15
	0.00%	13.33%	33.33%	20.00%	33.33%	17.65%
Column Total	4	18	37	19	7	85
	4.71%	21.18%	43.53%	22.35%	8.24%	100.00%

G-3: Students' evaluation of courses content

Evaluation / Students per department	Not useful	Only partially useful	Useful	Very useful	Completely useful	Row Total
Biology and Ecology	0	4	9	1	0	14
	0.00%	28.57%	64.29%	7.14%	0.00%	16.47%
Physics	3	7	1	2	4	17
	17.65%	41.18%	5.88%	11.76%	23.53%	20.00%
Geography, Tourism and Hotel Management	0	9	13	0	0	22
	0.00%	40.91%	59.09%	0.00%	0.00%	25.88%
Chemistry	1	11	5	0	0	17
	5.88%	64.71%	29.41%	0.00%	0.00%	20.00%
Mathematics and Informatics	0	4	2	4	5	15
	0.00%	26.67%	13.33%	26.67%	33.33%	17.65%
Column Total	4	35	30	7	9	85
	4.71%	41.18%	35.29%	8.24%	10.59%	100.00%

G-4: Students' evaluation of literature

Evaluation / Students per department	1	2	3	4	5	Row Total
Biology and Ecology	0	0	4	9	1	14
	0.00%	0.00%	28.57%	64.29%	7.14%	16.47%
Physics	2	1	5	5	4	17
	11.76%	5.88%	29.41%	29.41%	23.53%	20.00%
Geography, Tourism and Hotel Management	0	3	8	7	4	22
	0.00%	13.64%	36.36%	31.82%	18.18%	25.88%
Chemistry	0	3	2	3	9	17
	0.00%	17.65%	11.76%	17.65%	52.94%	20.00%
Mathematics and Informatics	1	2	2	3	7	15
	6.67%	13.33%	13.33%	20.00%	46.67%	17.65%
Column Total	3	9	21	27	25	85
	3.53%	10.59%	24.71%	31.76%	29.41%	100.00%

G-5: Students' evaluation of teacher's readiness to answer to their questions

Evaluation / Students per department		1	2	3	4	5	Row Total
Biology and Ecology		0	0	1	12	1	14
		0.00%	0.00%	7.14%	85.71%	7.14%	16.47%
Physics		1	2	7	0	7	17
		5.88%	11.76%	41.18%	0.00%	41.18%	20.00%
Geography, Tourism and Hotel Management		2	3	11	4	2	22
		9.09%	13.64%	50.00%	18.18%	9.09%	25.88%
Chemistry		1	0	6	5	5	17
		5.88%	0.00%	35.29%	29.41%	29.41%	20.00%
Mathematics and Informatics		0	1	1	8	5	15
		0.00%	6.67%	6.67%	53.33%	33.33%	17.65%
Column Total		4	6	26	29	20	85
		4.71%	7.06%	30.59%	34.12%	23.53%	100.00%

G-6: Students' evaluation of interaction during lectures

Evaluation / Students per department	Unsatisfying	Satisfying	Good	Very good	Excellent	Row Total
Biology and Ecology	0	9	4	0	1	14
	0.00%	64.29%	28.57%	0.00%	7.14%	16.47%
Physics	1	5	6	1	4	17
	5.88%	29.41%	35.29%	5.88%	23.53%	20.00%
Geography, Tourism and Hotel Management	3	10	2	6	1	22
	13.64%	45.45%	9.09%	27.27%	4.55%	25.88%
Chemistry	1	5	11	0	0	17
	5.88%	29.41%	64.71%	0.00%	0.00%	20.00%
Mathematics and Informatics	1	1	6	1	6	15
	6.67%	6.67%	40.00%	6.67%	40.00%	17.65%
Column Total	6	30	29	8	12	85
	7.06%	35.29%	34.12%	9.41%	14.12%	100.00%

G-7: Students' evaluation of lecture-exercise ratio

Evaluation / Students per department	Unsatisfying	Satisfying	Good	Very good	Excellent	Row Total
Biology and Ecology	0	5	6	3	0	14
	0.00%	35.71%	42.86%	21.43%	0.00%	16.47%
Physics	0	1	8	8	0	17
	0.00%	5.88%	47.06%	47.06%	0.00%	20.00%
Geography, Tourism and Hotel Management	8	4	2	5	3	22
	36.36%	18.18%	9.09%	22.73%	13.64%	25.88%
Chemistry	2	6	9	0	0	17
	11.76%	35.29%	52.94%	0.00%	0.00%	20.00%
Mathematics and Informatics	0	5	3	3	4	15
	0.00%	33.33%	20.00%	20.00%	26,67%	17.65%
Column Total	10	21	28	19	7	85
	11.76%%	24.7%	32.94%	22.35%	8.24%	100.00%

Appendix H: Published articles about Science Fair

Фото: Р. Хаџић

НА УНИВЕРЗИТЕТУ У НОВОМ САДУ

Отворен Фестивал науке

Први Фестивал науке отворио је јуче на Пољопривредном факултету у Новом Саду подпредседник Владе Србије и министар за науку и технолошки развој Божидар Ђелић. Он је истакао да Влада током ове године планира да новчано помогне још девет манифестација којима ће циљ бити популаризација науке. Покрајински секретар за науку и технолошки развој Драгослав Петровић нагласио је важност популаризације науке и додао да ће наставити са радом на новим научним пројектима, као и да ће у оквиру будућег Статута Војводине бити дефинисани приоритети на пољу науке и технолошког развоја.

Током Фестивала науке посетиоци ће и данас од 10 до 19 сати имати прилику да присуствују експериментима, огледима, презентацијама на Пољопривредном и Технолишком факлутету и научно популарним предавањима која се одржавају у амфитеатру "Михајло Пупин" на Природно-математичком факултету. Између осталог, око 100 научних радника и студената волонтера показаће како изгледа форензички посао, одговарати на питања о свемиру, организовати трку робота, како молекули утичу на заљубљивање и многа друга. Улаз је слободан, а Фестивал науке је организовао ПМФ у оквиру обележавања 40 година од оснивања. **В. В.**

Хемија, физика, роботика... могу бити и забава

Током викенда на Природно-математичком, Пољопривредном и Технолошком факултету Новосадског универзитета, одржан је Први фестивал науке у Новом Саду и Војводини, организован у оквиру обележавања 40.

Фармацеути-уметници Фото: Р. Хаџић

годишњице ПМФ-а. Фестивал је у суботу и недељу посетило више хиљада људи који су имали прилику да овде, на Универзитету, где се наука учи и ствара, добију одговоре на многобројна питања, присуствују огледима и сами експериментишу, или да на предавањима, прилагођеним широком аудиторијуму, сазнају све што их интересује из различитих области науке и научних достигнућа. Посебно радује што је међу посетиоцима било пуно деце, нарочито основаца, а да је оваква манифестација добродошла потврдили су баш сви које смо питали шта мисле о Фестивалу науке. Зато он треба да настави да живи и следећих година.

Колико су наука и технологија напредовале, али и колико су саставни део свакодневног живота могло се сазнати и видети у научно популарним презентацијама и предавањима научника и студената волонтера пет новосадских и два београдска факултета. Пажњу су привлачили сви штандови, а међу најпосећенијима је био и онај Криминалистичко-полицијске академије из Земуна где се могла видети и реконструкција злочина. Симулирано је место злочина, а знатижељним посетиоцима омогућено је да се упознају с истражним техникама и опремом коју користе форензичари.

- Припремили смо презентацију криминалистичко-форензичке обраде лица места, што укључује фотографисање, скицирање, узимање трагова, лабораторијске анализе и друго. Приказали смо како је могуће обележити новчанице или друге документе, а посетиоци су могли и да завире у несесере с опремом за увиђаје. Највећу пажњу привукао је фото-робот, као и посматрање форензичких узорака под микроскопом, затим техника узимања отисака, што су посетиоци могли и да испробају – каже мр **Ивана Бјеловук**, са Криминалистичко-полицијске академије.

Не мање пажње привлачили су и штандови на којима је публика могла директно да учествује у експериментима и огледима, као што је било на штанду новосадског Медицинског факлутета где су студенти доказивали да је фармација права уметност.

- Демонстрирали смо како се прави крема за бебе и маст за негу усана, али највише пажње привлачили су огледи са сребрним огледалом и хемијске реакције под називом "Чудо од боја" – објаснила је **Младена Лалић**, координаторка на овом штанду.

Публици свих узраста интересантне су биле и трке робота, машине које говоре и разумеју људ-

Микроскопи су откривали чудесне призоре

ски говор, симулација појава у свемиру, експерименти с течним азотом, светлом и звуком, али и живи свет кишних шума, паукова и змија коју су приредили студенти Департмана за биологију и екологију. Фасцинантне су биле тарантуле, гуштери и змије, а сви који су желели могли су да постављају питања студенту **Миливоју Крвавцу** који је недавно посетио Шри Ланку, Индију, Индонезију и Амазон и одатле донео низ занимљивих прича и фотографија. Поред ових занимљивих ексепримената и презенатација у којима су могли да учествују и посетиоци, амфитеатар "Михајло Пупин" на ПМФ био је мали да прими све заинтересоване за предавања на разне научно-популарне теме, на пример о томе можемо ли да постанемо невидљиви захваљујући метаматеријалима, постојању хемије љубави, "малим зеленим", тамној страни свемира, токсигеним плеснима у храни, шта нас чека у будућности због климатских промена...

Весна Вукојев

Ресорни министри Ђелић и Петровић задовољни новосадским „научним полигоном"

Министар обећао даљу подршку

Отварајући Први Фестивал науке у Новом Саду, потпредседник Владе Србије и министар за науку и технолошки развој **Божидар Ђелић** нагласио је значај популаризације науке и најавио да ће Влада ове године новчано помоћи девет манифестација које промовишу науку. Покровитељи Фестивала били су Министарство и Покрајински секретаријат за науку и технолошки развој и Скупштина Града Новог Сада.

Appendix I: Suggestion for University of Novi Sad trademark