UNIVERSITY OF LJUBLJANA FACULTY OF ECONOMICS

UNIVERSITY OF SARAJEVO SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

STUDENT PERCEPTION OF SERVICE QUALITY: DIFFERENCES BETWEEN EPAS ACCREDITED AND NON-ACCREDITED UNDERGRADUATE PROGRAMS AT THE SCHOOL OF ECONOMICS AND BUSINESS IN SARAJEVO

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INTRODUCTION

Globalization, economic and technological development, as well as social transformation and changes in human knowledge and behavior, have a strong impact on higher education (hereinafter: HE), higher education institutions (hereinafter: HEIs) and the role of students and society as beneficiaries or customers (Shekarchizadeh, Rasli, & Hon-Tat, 2011). HE services fall under the category of service marketing (Oldfield& Baron, 2000), defined as dominantly intangible mental processing (Lovelock & Writz, 2011) and, in most cases, high-contact services. In the context of discussion about HE and HEIs, Clayson and Haley (2005) explain education as a certain kind of partnership in which both sides (partners), universities (providers) and students (customers) have responsibilities towards each other but also to other stakeholders.

In an environment characterized by increasing competition and the transformation of HE from publicly available services to the tradable exchange, the biggest change is the one related to the beneficiaries of the university degree. Clayson and Haley (2005) state that, in the new conditions, the biggest and most immediate beneficiaries are the students, instead of society, as was the case with HEIs in the pre-market era of HE. In that context, students are considered to be customers who buy educational services for their satisfaction (Kanji & Tambi, 1999).

These changes in the HE market are very important for the purpose of this master thesis because customer decisions about enrollment and the choice of university places a greater emphasis on the quality, reliability and value for money ratio than ever before. That increases students' expectations significantly so the quality of HE services plays crucial role, not only in the processes of the choice and enrollment of students, but also in their perception of service performance, their satisfaction, behavior and possible loyalty.

In the changed educational arena, the problem of defining and explaining service quality is recognized by scientists and universities as extremely important. After decades of research and discussion, researchers didn't come up with a unique definition of quality. In their research, Ramirez and Berger (2014) have stressed the importance of quality as a policy issue, a focus of practice and as a concern for study in HE research.

The strong impact of individual perception makes this problem almost insoluble and organizations in the business and public sectors often make compromises, by using different types of certification or accreditation as forms of guarantees of quality for at least some service dimensions that can be standardized (Levit, 1980). Their purpose is to attest to the universities' capabilities for delivering high quality, creating possibilities for student mobility, increasing employment prospects and ensuring satisfactory levels of delivered services.

Many types of national, and several kinds of international accreditations are available and universities can apply for more than one. As a consequence, the perception of competitive advantage and additional value that accreditation creates for the customers becomes very important to the universities. Applying for accreditation and paying fees and the costs of the accreditation process make sense only in the cases when students (as primary customers) recognize those efforts as valuable enough to enroll at the university.

The purpose of this thesis is to explore the attitudes of the School of Economics and Business Sarajevo's (hereinafter: SEBS) students regarding the quality of the institution and to assess their satisfaction. Moreover, research will be focused on the role of accreditation in the students' decision process to enroll at the university, i.e. deciding to enroll depends upon the fact of whether the university is accredited or not.

The main objective of the thesis and research is to find out what role accreditation plays in assessing overall service quality. The following goals were set:

- To present a comprehensive analysis of the development, scope and character of the EPAS accreditation of the accredited programs at SEBS.
- To see if accreditation affects the student service quality perception measured by the HEdPERF model (Higher education performance model).
- To draw parallels between students attending accredited and non-accredited programs at SEBS which will show whether there are differences in their expectations and if the accreditation adds additional value to the perception of the institution.
- To establish whether accreditation could be a source of competitive advantage over other public and private HEIs.

Focus groups are used for the identification of critical factors and determinants of service quality as perceived by the students. HEdPERF model (Firdaus, 2004) is used to measure the quality of the HE services at SEBS. This model has been used in numerous research studies concerned with service quality in HE. The scales that will be used for this thesis were already developed and tested for uni-dimensionality, reliability and validity. The empirical survey includes 416 students of accredited and non-accredited programs. Data will be analyzed using factor analysis and linear regressions to determine the effects of seven dimensions on the student's perception of service quality, the relative importance of each of the dimensions and whether they contribute significantly in explaining the total variance in quality perception.

This thesis is divided into six parts. The first chapter will explain the nature and history of HE and the implications for service quality and HEIs business. It will tackle the question of why service quality is important in HEIs and then differentiate and explain the different types of accreditation, American and European type accreditation, the European Quality Improvement System (hereinafter: EQUIS) and Electronic Protocols Application Software (hereinafter: EPAS) accreditations. In the second chapter, an overview of the accreditation processes in

Bosnia and Herzegovina (hereinafter: B&H) will be given. The jurisdiction of accreditation agencies in the Federation of Bosnia and Herzegovina (hereinafter: FB&H) and Republika Srpska (hereinafter: RS) will be explained alongside the standards and criteria that are being applied. Special attention will be given to the accreditation process that SEBS has undergone in recent years with the detailed chronological explanation of all the phases that took place. The framework for the evaluation of service quality in HEIs will be the topic of the third chapter. Differences between the levels of quality, satisfaction and loyalty will be presented alongside the redefined role that students have today in HE and HEIs. The main focus of the chapter will be on different models for measuring the service quality, varying from disconfirmation-based models, over performance-based models, to quality models that are designed specifically for HE services. The fourth chapter will be dedicated to empirical research where the methodology and research design used will be explained alongside which, the results and main findings will be shown. This chapter will include hypothesis testing and discussion about the results. The limitations of the research, the conclusion and the references are also integral parts of the thesis.

1 CHANGING LANDSCAPE OF HIGHER EDUCATION AND ACCREDITATION

In recent times, the simultaneous impact of several processes, including the intensive globalization of competitiveness, increasing privatization and the continuous reduction of government and other public sources for financing, have forced HEIs to accept different types of market-oriented behavior and marketing mechanisms that have been employed in other service industries for decades (DeShields, Kara, & Kaynak, 2005). This fact implies that universities have to define and respect their own quality standards and apply them in quality management. One of the most frequently used university strategies is delivering high quality services and satisfying the needs and requests of primary and secondary customers (students, parents, government and businesses). Despite these facts, the measurement of service quality in HE is still mostly defined by the institutions, not students nor other interest groups of HEIs.

Besides students, HEIs today have many interest groups with different expectations, such as ministries, university administration, academic staff, non-academic staff and similar. Kanji and Tambi (1999) classified the stakeholders of HE services into two groups – **internal customers** that involve employees (educators) but also students as educational partners (which is unusual practice) and **external customers** with two subgroups: students as the primary customers and secondary customers such as government, industry and parents.

Robinson and Long (1987) categorized university customers according to the priorities they have to the university. At the top of the list, they put students as the primary customers, whilst education authorities and employees are categorized as secondary customers. Finally, in the group of tertiary customers, they included validating bodies, former students, families, employers etc. The quality of HE services is simultaneously evaluated by students and

researched by universities through quality assessment models, but also by independent institutionalized bodies and organizations. Due to market challenges and competitors' actions, HEIs as service providers are, today, more responsible for the performance and quality of their services than government bodies and ministries, was the case in the past. Firdaus (2006a) suggested that this new perspective is important for the traditional academic, teaching and research standards and for institutions for accreditation. This trend is consistent with the Bologna declaration (1999) about transferring responsibility for quality assurance from governmental agencies and institutions to the universities and higher schools.

Despite increasing responsibility for the quality of service they give, HEIs still need proof of their competences and success, issued by independent institutions. Therefore, accreditation agencies or institutions and their certification are still necessary. In the whole process, universities have to prevent the wrong interpretation of educational quality in the form of activity measurement instead of the true measurement of the quality of the higher educational service (Soutar & McNeil, 1996). That implies the necessity for enlargement of the number of initially identified determinants for evaluation by adding additional determinants, including other aspects of the service environment and students' experience in the buying and "consuming" of educational services.

So, the process of accreditation today becomes one of the most important factors that can offer certain kinds of differentiation between many universities, new types of schools, institutions and other forms of education. In a certain way, it is the sign for new students that they can trust universities which are objectively evaluated and proclaimed as providers of excellence in academic performance and prestigious knowledge.

1.1 Process of accreditation

Soon after the introduction of HEIs as we know them today, the need for some sort of standardization appeared. Since achieving academic excellence has always been one of the main values in HE (Neave, 1988; Schwarz & Westerheijden, 2004) the measuring and ranking of performance appeared early on, so universities set more or less successful benchmarks for themselves.

The best-known success case is seen with German research universities in the 19th century; they introduced a new benchmark for themselves which was then used around the world (Lehrer, Nell, & Gärber, 2009). John Hopkins University from the United States of America (hereinafter: USA) took the foundations of the German model and reinvented itself as a research school where learning in the context of improving one's knowledge and training is achieved by enabling them to do their own research (Hernes & Martin, 2008). After the period of school self-improvement, a need for a more "official" measurement was recognized and led to the establishment of the accreditation process which became very important. According to Adelman (1992, p.1314) accreditation is "a process of quality control and

assurance whereby, as a result of inspection or assessment, an institution or its programs are recognized as meeting minimum acceptable standards."

The primary role of accreditation is minimization of a risk and uncertainty, especially in the cases when individuals cannot predict the result of the process of interaction. It is in human nature to choose options where the payoff is the greatest and accreditation provides guarantees for identifying reliable and tested programs (Heitor & Horta, 2014), besides quality assurance accreditation helping universities to provide a benchmark process and enable networking. That is the reason why accreditation agencies became symbols of distinction that are recognized by many business schools. Urgel (2007) explains the three-way value of accreditation systems that universities can expect from the accreditation process: (1) an assessment of the quality of the school, (2) enhanced brand recognition and (3) advice for improvement.

1.2 International accreditation processes and institutions

Globalization of the HE industry had an extremely strong impact on the type of education that is being offered, increasing the numbers of emerging universities, as well as the number of students and academic staff. Being an exclusive privilege of élites in the past, today's education can be treated as "a commodity" available to the mass market. That makes accreditation itself more important than one might expect, especially in the case of universities with a long tradition. Since the focus of the thesis is on the students attending the SEBS, further discussion will be limited to the accreditation processes and institutions in business and management.

International accreditation in business and management education today can be found in two basic forms: institutional accreditation and program accreditation. Schools can be accredited as institutions by EQUIS (EFMD Quality Improvement System) and AACSB accreditation Association to Advance Collegiate School of Business) or get program accreditation (in most cases two programs per institution) such as EPAS (EFMD Program Accreditation System), which is representative of the European accreditation and Accreditation of Association of Master of Business Administration programs (hereinafter: AMBA)which is the United Kingdom (hereinafter: UK) accreditation.

Institutional accreditation is related to the general characteristics of the university, such as governance and academic policies, the quality of faculties, physical equipment and facilities, stability and other resources. On the other side, accreditation of the individual programs is focused on the quality of teaching and the support of learning, structure of curriculum, processes of assessment, feedback to learners, as well as learning environments, support and quality assurance systems, but only to those directly related to the accredited program(s). The choice about the type of accreditation for which a university decides to apply depends on

economic, social and market circumstances, the university's resources and capabilities for quality assurance but also on advantages which the accreditation system offers.

Lewis (2005) integrated the advantages of program accreditation and explained them as more credible in academic and business society in comparison to institution accreditation. These advantages are explained in the following way:

- Program accreditation in many cases has greater external credibility if the review is provided by the accreditation agency.
- Essentially, reviewers have more expertise in academic programs under the accreditation.

On the other side, according to same author (Lewis, 2005) institutional accreditation creates advantages for HEIs which are connected with efficiency and operationalization of the accreditation process:

- Accreditation agencies have less work to do especially in the cases where many HEIs operate in a country.
- Generally, it will be a less expensive process for the agency and the institution.
- Finally, the most important advantage of institutional accreditation is related to the fact that it will be an ongoing operation process and not the one that takes place periodically.

The easiest way for understanding differences between institutional and program accreditation is an analysis of the American and European approach to the accreditation process. Both approaches will be described in the text below.

1.2.1 American type of accreditation

The American system of accreditation was established in the period from 1885-1895 and it is the oldest one. The whole system consists of six regional accreditation bodies in charge of institutional accreditation and a great number of professional bodies authorized for professional study programs accreditation (Kuh & Ewell, 2010).

The Association for the Advancement of Collegiate Schools of Business (hereinafter: AACSB) has provided accreditation of business schools for more than a century. At the beginning, accreditation was provided mostly in the United States of America (hereinafter: USA), but now more and more globally (AACSB International, 2013). The Association is focused on continuous quality improvement in management education through engagement, innovation and impact (AACSB International, 2013). AACSB is a non-profit corporation of business schools, accounting programs, corporations and other organizations devoted to the promotion and improvement of HE in business administration and accounting (AACSB).In order to improve relevance, maintain actuality and increase the value, the Association regularly reviews its standards and processes of accreditation. Encouraging and supporting the

ethical behavior of students, faculty and professional staff, the commitment to corporate and social responsibility values are all included in AACSB accreditation after the Revision of Business Standards in 2013 (AACSB International, 2013, 2016; Morgan, Franklin, Heriot, Hadley, & Hazeldine, 2014). It is worth pointing out the fact that, in some disciplines, international accreditation and accreditation institutions changed the structure of HEIs into one that is typical of the companies and spreads their impact to many countries. Currently, AACSB accreditation is held by business schools in many countries.

1.2.2 European type of accreditation

After the American, the European approach to accreditation was developed and the European Foundation for Management Development (hereinafter: EFMD) as an independent institution for accreditation was founded in 1997 with the goal of enhancing excellence in management education in Europe and worldwide, and as a connection between the corporate and education worlds. The organization launched several types of accreditation systems; of these, EQUIS and EPAS are the most well-known. The international, non-profit institution EFMD currently includes over 800 institutional members and reaches over 25,000 management development professionals from academia, business, public service and consultancy across 82 countries worldwide (EFMD, 2016, p.1). Besides the accreditation processes, EFMD organizes advisory seminars, events and knowledge exchange networks and information sharing.

According to Helmig, Bürgisser, Lichtsteiner and Spraul (2010), accreditation is a rather new phenomenon in Europe, but it is becoming the most dominant form of quality assurance of HE. Even though the AACSB is much older than its European counterpart (EFMD), Shenton and Houdayer (2007) point out that the AACSB operations outside the USA are of similar maturity to EQUIS and that, regardless of their different philosophies, they have undergone similar learning practices.

EFMD accreditations provide many benefits for HEIs, starting with the higher credibility of information about the substance of universities and their programs. They also provide the international recognition of excellence that universities have achieved, support sharing good practice among similar and comparable education institutions, as well as support for the acceleration of improvement in quality and future development in international management education.

Both AACSB and EFMD propose very complementary models of accreditation and suggest that both internal and external stakeholders should be involved in the process of accreditation. As stated before, specific characteristics and differences between the American and European way of accreditation lies in the type and bases for accreditation. The American type of accreditation is a strictly formalized, standard-based accreditation which applies the very same standards for all business schools. On the other side, EFMD accreditations primarily make a difference between institutional and program accreditation and then, in the analysis,

takes into consideration the national context, the level of educational sector development and the dominant type of HEIs ownership. Two types of accreditation, EQUIS as the institutional accreditation and EPAS as the program accreditation, will be explained in the text below.

1.2.3 EFMD accreditations - EQUIS and EPAS

EFMD aims and goals have been focused on the improving quality of the HE in management and business areas and development of globalized network for knowledge and information sharing. The Institution uses different instruments for analysis, evaluation, comparison and certification of programs, which indicates that the accreditation process starts with different assumptions.

1.2.3.1 EQUIS accreditation

EQUIS was designed as an international accreditation system for providing continuous quality improvement, international recognition and effectiveness, while taking into account diversity of national cultures and educational systems around the world. This does not mean that EQUIS will lower its expectations regarding the basic standards due to some local constraints. Quite the opposite, it means that the assessment must accept wide differences in the organization and delivery of management education (EFMD, EQUIS Standards & Criteria, 2013, p.17) but within these boundaries, quality and excellence have to be achieved. This makes some authors' attitudes about the anachronistic nature of traditional models less relevant. (Salmi, 2000).

Level of accreditation	Meaning of the type of accreditation
Context, governance and strategy	Description of the national higher educational system with explanations of
	the current norms and limits in the country
Programs	Should be well designed with clear learning outcomes
Students knowledge and skills,	Proof of availability of professional qualified resources for helping
employability and salary	students in search for a job based on relationship with companies
Existence of permanent core	Academic staff working as full-time employees; The balance between
faculty	teaching, research, new program development and internal responsibilities
Research and development	Academic research – new knowledge, theory or methodologies
	Practice-oriented research and mission - effective advancement and
	impact on practitioners
	Pedagogic development and innovation – impact within the institution teaching mission and their impact on educational practitioners
Ethics, responsibility and	To have a clear understanding of the role as a "globally responsible
sustainability	citizens"
Corporate connection	Reflection of corporate dimension in the HEI strategy and policy
	Business leaders participation
	Explicit policy and strategy for managing interface with corporate world

Table 1. Main criteria of EQUIS accreditation

Source: European Foundation for Management Development, EQUIS Standards and Criteria, 2013, pp. 7-71.

The aim of the EQUIS process is not to establish a common norm for the design, content and delivery of programs for different types of institutions and organizations (EFMD, EQUIS Standards & Criteria, 2013, p.15). Its aim is rather to understand how faculties and universities make their programs internationally comparable and compatible and then use it for further improvement of the HE in management and business. In the process of EQUIS accreditation the effectiveness of the program design, delivery and assessment processes are evaluated. Reviewers carefully evaluate several types of programs, undergraduate (Bachelor), a pre-experience postgraduate (specialist Master) and a post-experience postgraduate (MBA) program in order to check the effectiveness of the overall program portfolio management (EFMD, 2013, p. 16).EQUIS is linked to both academic and corporate needs, it creates balance between academic and professional skills and emphasizes personal development. The main criteria that EQUIS accreditation uses in the process of evaluation and accreditation of the universities are compiled for the purpose of this thesis (Table 1).

1.2.3.2 EPAS – program accreditation

EPAS is EFMD program accreditation system, founded primarily as the support for the implementation of the Bologna reforms in Europe, but also in order to guarantee high quality academic programs and strong international perspective. Due to different levels of development of economic and education systems in the European countries, it is expected that HEIs and public institutions responsible for support and financing of the science and education development often need guidelines for the process of reforms. At the same time markets need the transparency for assuring vertical mobility for students.

EPAS accreditation supports academic excellence by establishing thresholds for the professional competences. Standards of this type of accreditation ensure that programs are designed and delivered as both academically rigorous and practically relevant (EPAS Standards & Criteria, 2016). Using traditional or emerging models of curriculum design, institutions have to balance requirements that promote comparability among programs and encourage programs' differentiation. Namely, EPAS Accreditation Model is designed as an input-output model – it starts with the program design, continues with the program delivery and ends with the program outcomes (EPAS Process Manual, 2016). EPAS Core standards are presented in the Table2.

Type of Standard	Focus and Concentration of the Standard
Standard 1 – Working in Organizations	Concentrates on team development, communication and the sharing and dissemination of the information
Standard 2 – Collaborative working	Focuses on multi-professional and integrated team work and development as the main issue for the achievement of the quality improvement
	table continues

Table 2. EPAS Core Standards

Continued	
Type of Standard	Focus and Concentration of the Standard
Standard 3 – User focused care	Emphasizes the importance of the reforming agenda, incorporating users' views into development and practice evaluation
Standard 4 – Continuous	Explores how individuals and teams incorporate the concept
Quality Improvement	of quality improvement in everything that they do, making quality part of everyday working practice
Standard 5 – Performance management	Highlights how improved performance and user satisfaction can be achieved in practice
Standard 6 – Measuring efficiency	Demonstrating efficiency and effectiveness in practice
and effectiveness	through the various systems and processes associated with
	measurement, benchmarking, audit and evaluation

Source: European Foundation for Management Development, EPAS Standards and Criteria, 2013.

EPAS assesses individual degree programs but, according to EFMD policy (2009), maximum two programs per institutions. Generic institutional aspects will be reviewed only to the extent they affect the quality of programs which are under review. EPAS accreditation includes four features of an integrated curriculum design: 1) program mission and goals; 2) the explicit curriculum, 3) the implicit curriculum and 4) the assessment (Council of Social Work Education, CSWE, 2016).

For the successful delivery of HE services and ensuring accreditation of the programs, universities have to assure program integration in the institution's strategy and also support of management, faculty and other resources. Basically, faculty's scientific and research qualifications and its commitment to the services and programs' delivering are key prerequisites for high quality of HE services. Nevertheless, institutions have to meet national regulations and international norms simultaneously (EPAS Standards and Criteria, 2016).

Similarly as the EQUIS, EPAS accepts diversity of the programs in different national contexts but also without compromising expected level of quality. System has to provide rigorous and detailed assessment of the quality, international recognition and also effectiveness of the program(s) (Urgel, 2008). It should cover design and review processes including approvals, maintenance of teaching quality, and rigor assessment of the programs. Through this type of accreditation institutions get assistance in the process of program's creating and its strategic development as well as implementation. EPAS is also safer platform on-the-job learning about international accreditation (Urgel, 2008).

Besides general advantages, EPAS accreditation has additional specific benefits for HEIs that include help on more functional level i.e. organization of the program. Schools emphasize the help they receive with structuring of the activities and setting up program-management systems that support the intended learning outcomes (Philippart, 2014), detailed analysis of the program team according to the EPAS framework and standards, and also signals about the

things that need to be improved. Furthermore it helps with the program focus and definition, processes of the program strategic development etc. (EFMD, 2013). It is often said that EPAS has "ripple effects" for the schools; after they get two programs accredited they can continue and apply for the accreditation of the entire school (Cornuel & Urgel, 2009), i.e. apply for EQUIS accreditation. So the EPAS can help schools in their preparation for obtaining EQUIS accreditation.

It is obvious that EFMD provides numerous benefits to schools, primarily through international recognition of excellence which helps them to become eligible to attract foreign students. While Miles, Grimmer and Franklin (2016) point out that EQUIS provides a clear benefit for the school's brand development, Rees (2009) state the same for the EPAS accreditation. Mutual learning and sharing of good practice is an additional benefit.

1.2.3.3 EFMD accreditation challenges

Despite all benefits and the advantages of EFMD accreditation systems in HEIs, Institution faces significant challenges in the process of service quality evaluation, monitoring and improvement. In the first place there is the fact that EFMD use the same accreditation process for different institutions assessment: national education systems, organization of HEIs, private and public institutions and schools. Taking into consideration different platforms, but even more so, their context of the operations, sources and levels of financing, it is obvious that the same or very similar standards cannot be adequate for wide diversity of institutions.

EPAS also applies similar standards for diversity of programs accreditation, undergraduate, graduate and post-graduate programs, but also different formats of programs and types of diplomas – single, dual, multiple or joint degrees. In those cases partner universities probably have different performances, resources and/or national standards. It will be even more complicated when geographical and cultural diversity are included, since partners, personally or institutionally advocates different values, have different expectations, leadership styles and professional roles. In these circumstances the biggest challenge is related to the possibility of quality assurance without sacrificing diversity.

As a response to identified challenges EFMD promote concept of diversity and keep different sources of innovation and creativity. Simultaneously, it uses different models for the evaluation and accreditation. Diversity is in the essence of models since the effectiveness of the model depends on the purposes and there is no best way for the assessment and accreditation.

2 ACCREDITATION PROCESSES IN BOSNIA AND HERZEGOVINA

Transformation of the HE sector in transitional countries is a part of many political, economic, social and legal changes caused by transition from one political system (self-

management economy) to another, defined as democracy and market economy. The regulation of HE sector in new political and social context, privatization and founding of new types of HEIs initiated strong competition among old and new universities and HEIs. In those circumstances new business and competitive environment quality, reputation and international recognition of the HEIs become crucial for the students attracting and winning the competitors. Here, even more than in European Union (hereinafter: EU) educational area, it is important that independent institutions and agencies, as well as process of accreditation and certificates of accredited institutions, offer guarantees for the potential students.

2.1 Accreditation institutions in Bosnia &Herzegovina

By joining the Bologna process at the Ministerial Conference in Berlin(2003) Bosnia and Herzegovina made commitment to establish quality assurance system in HE. Two years later, in 2005, at the Conference of European Ministries of Education in Bergen, the Standards and Guidelines for Quality Assurance in the European Higher Education Area (hereinafter: ESG) were adopted by the European Association for Quality Assurance in Higher Education (hereinafter: ENQA). They define a common European methodology in this area.

According to the ESG Standards and Guidelines and the obligations that bring the membership in the Bologna process, B&H has adopted Framework Law on Higher Education in Bosnia and Herzegovina (Official Gazette of B&H 59/07). Next two steps in the process of realization of the Bologna's goal of establishing system quality were the adoption of Standards and guidelines for quality assurance in higher education in B&H, completely harmonized with the ESG, and the foundation of the Agency for Development of Higher Education and Quality Assurance (hereinafter: HEA).

Higher education in B&H is based on the laws passed by the state and entities' government bodies. Framework Law on HE and Laws on entity/cantonal level stipulate academic freedom and criteria for appointment of the academic staff. Standards and norms for performing HE and input standards of HE authorities as sub-laws stipulate the quantity of staff, including academic staff workload. Finally, HEA documents related to the quality assurance, Criteria for Accreditation and output standards cover issues about the quality of staff and the human research development policies on the level of HEIs.

2.1.1 Accreditation Agencies

The big challenges and problems of accreditation in B&H are consequences of the fact that the process of accreditation is under the jurisdiction of several levels of authority – cantonal, entity and state level. In B&H two agencies for accreditation in higher education and quality assurance exist – the Agency for development of higher education and assurance quality B&H (hereinafter: HEA) and the Higher education accreditation agency of Republic Srpska (hereinafter: RS HEAA). Both of them are responsible for the whole process of planning,

implementation and monitoring the process of accreditation. In that process they use essentially the same accreditation criteria, while the process itself is slightly different.

Agency for higher education development and quality assurance (HEA) was founded at the national level in 2007 according the Framework Law of higher education in B&H (Official Gazette of B&H, No. 59/07). It is independent organization and its organizing, management, procedures and rules are determinate by the same Law and Decision of the Council of Ministry of B&H (2016). The Agency (HEA) is responsible for defining criteria for the accreditation of HEIs, setting norms for minimum standards in the field of HE, defining criteria for the selection of local and international experts, quality review and recommendations. It is financed from the budget of B&H, while activities in the process itself have been financed from the fees paid by the institution that apply for accreditation, and finally by the HEA. Under the supervision of the HEA the process of accreditation has been organized and recommendation for accreditation (or against the accreditation) prepared according to the criteria and standards for HEIs accreditation in B&H. Then recommendation is submitted to the responsible ministries.

Restructuring of study programs, providing recommendations on criteria for licensing of HEIs and their study programs, setting the quality standards and quality analysis, providing recommendations on student fees, and representing the country in international organizations, dealing with the quality assurance in higher education are also activities over which the Agency has authority. Providing all those processes related to the external quality assurance and evaluation the Agency follows the principles of legality, transparency, publicity, efficiency, effectiveness and professional impartiality (HEA, 2007).

Higher education accreditation agency of Republic Srpska (RS HEAA) was established by the Law on Higher Education in Republic Srpska (Official Gazette of RS, 73/10, 194/11 and 84/12) and the Law on System of Public Institutions (Official Gazette of RS 68/07). The basic task of RS HEAA is organization and implementation of the external quality evaluation process and accreditation of the HEIs according to the European standards and procedures outlined in the ESG document.

Goals of the RS HEAA imply recognition of the Agency within the academia, development of HEIs' quality assurance system and international recognition. The goals' achievement depends on some principles and policies that the RS HEAA has to define and apply. Essentially it has to work and operate as an expert body, not administrative one and be able to provide independence and professional competences. In those processes a lot of activities related to the quality assurance should be provided: organization of the experts' meetings, trainings and certification of the staff to make them able to work in different areas of the quality assurance, publishing information, statistical reports, as well as participation in the international projects from these areas. All those reports, documents and changes made in the process of accreditation should be publicly available.

It is difficult to define higher education system in Bosnia and Herzegovina as the unified one, despite certain level of coordination and cooperation. As a consequence many different regulations, laws and procedures for accreditation can be found in the country. It definitely impacts the organization, authority and responsibility of the accreditation agencies as well as their initiatives regarding the European institutions in higher education area.

2.1.2 Accreditation standards and criteria in Bosnia and Herzegovina

In order to get an accreditation in B&H, the HEI has to fulfill clear criteria defined by the European standards and guidelines for the quality assurance in the European Higher Education Area (ESG, 2015). Development and improvement of the quality assurance processes and systems assume multidisciplinary approach and mutual cooperation between different subjects and institutions under the Agencies' supervision. B&H national standards have to meet requirements defined by the ESG (2005), have to be formulated as the support of fundamental reform processes in the HE and must be monitored by the universities, ministries and the quality assurance agencies.

The standards and guidelines are formulated keeping the following objectives in the focus: needs for supporting continuous improvement of quality in the area of HE, making information about the quality and standards accurate, understandable and publically available, and also using the process of benchmarking – analyzing and applying international best practices for the monitoring and evaluating of the B&H higher education. This general overview of the goals is followed by several long-term objectives of the quality assurance system which are oriented towards stakeholders and related to their need in HE. Founded on the specific interests of variety of stakeholders these objectives are aimed to promoting research and knowledge transfer in B&H and equal social opportunities for all learners in B&H as the way of creating prerequisites for elementary human rights for education achievement. On the way of including in EU educational area and exploiting benefits of the students mobility within B&H and internationally. Consequently, accreditation processes at the national level supposed to ensure comparability with the EU across a wide range of areas such as learning support, feedback systems from graduates and employers and similar.

With the purpose of achieving presented set of objectives B&H standards and guidelines have been developed and structured in two parts. First group is focused on the internal quality assurance. These standards are related to the activities that university can control and which they are responsible for. They are defined according the logic of first part of the ESG standards (EFMD, 2013). An additional standard about institution's obligation for preparing for the external review of the quality procedures is added to the others already included in ESG.

The standards and guidelines for the external quality assurance create the basis for defining responsibilities of external bodies such as agencies, ministries and different commissions as well as the processes of external evaluation which they are supposed to provide. The external quality standards include seven standards – five of them for the external quality assurance of higher education and additional two that help bodies or agencies in the implementation processes of external quality assurance in B&H (see Appendix B). Based on the accreditation standards the Director of HEA had adopted Decision on accreditation criteria of higher education institutions in Bosnia and Herzegovina (2010); they are compiled by the author for the purpose of this thesis and presented in Table 3.

Accreditation criteria	Description of criteria
Development of strategy of HEI in	The strategy involves vision, mission, strategic goals and relevant plans
the process of public consultation	and activities which should be provided for adopted strategic goals
with different stakeholders	
Creating quality culture, its	HE institution is focused on the quality culture promoting and internal
management and the internal	quality assurance system developing as the improving teaching, scientific
quality assurance	research and management processes
Procedures for the quality	Procedures for proposing, adopting, monitoring and implementing the
assurance of the study programs	programs of study established and applied for each program of the study
are strictly formalized	
Student assessment procedures	Periodically collecting data about students' success and their analysis;
	they have been using for the improvement of students' success in the
	future education
Management of human resources in	Higher education entails ensuring adequate number of the professional
higher education	teaching staff focused on the achieving educational goals of institution
	and also establishing and supervising the academic rules and achieving
	sustainability of the institution and its study programs.
Quality of physical resources	Existences of the adequate resources for the staff and enrolled students
	and its continuous internal evaluations and assessment; except monitoring,
	this criteria implies permanent investment in different part of physical
	resources.
The information system	HEIs gather, analyze and utilize information relevant for quality assurance
	and improvement, create information system and collect data about
	students achievement and teaching staff accomplishment
Transparency of the HEI activities	Periodically publishing information relevant to the institution's
	stakeholder and understandable to public audience
Process of the national and	Cooperation with the international partners in the process of providing
international recognition and	different research projects which higher education institutions have been
accreditation of international	developing
relation	

Table 3. Accreditation criteria of higher education institutions in B&H

Source: Agency for Development of Higher Education and Quality Assurance of B&H, *Decisions of criteria for* accreditation of higher education institutions in Bosnia and Herzegovina, 2010.

2.1.3 The process of national accreditation in Bosnia and Herzegovina

Endeavoring to confirm high quality of educational services, reputation and competitiveness through the process of accreditation universities apply for the accreditation of national or international agencies or institutions. In the case of European countries, national standards and criteria have to be compatible with those which are already accepted and implemented in the European higher education area. Higher education in the B&H is not an exception; certain modification and differences had to be made because of the specific political structure. The subjects of accreditation in B&H are higher education institutions, their management processes, internal quality systems, capacities, resources and the potentials of the HEI as well as the capacities for improvement and reforms implementation, according the Chapter I of EQUIS Standards and Criteria (2013). According to the ESG standards of quality the accreditation of HEIs in Bosnia and Herzegovina is based on the assumption that HEIs have a primary responsibility for the assurance quality.

HEI is the one that obtains accreditation, not a part of the HEI (such as the organizational unit, school or the department) despite the fact that all parts and units of the HEI are evaluated during the process of accreditation. Similarly, study programs and their academic valorization will be evaluated in the accreditation process according to the standards of structuring and adopting the programs. The procedure of accreditation starts with the preparing of the Self-evaluation report by the HEI which is the basis for submission the application to the Agency and entitled Ministry at cantonal or entity level.

Complete and well founded application prepared and submitted by the HEI, the Ministry then forwards to the one of the Agencies with the proposal for the appointment on Evaluation team and implement further procedure. The Evaluation team, consisting of the academic, business and international experts, provides evaluation and audit of the quality on HEI through three phases a) the analysis of the Self-evaluation report of HEI, b) the visit to HEI and c) writing Report about the results of evaluation and auditing of the HEI quality. All three processes are strictly defined and formalized by the Agencies' standard and guidelines. Based on the comparison of Self-evaluation report prepared by the HEI and the factual situation Evaluation team writes Report of the external evaluation with the comments about level of completeness of accreditation criteria.

In the next phase HEA's recommendation are submitted to the same Ministry with one of three possible suggestions: a) completeness or significant completeness of all criteria – recommendation for the accreditation, b) partial completeness up to 4 criteria – recommendation for the conditional accreditation and c) failure to meet one or more criteria or partial fulfillment of more than four criteria – recommendation for the rejection of the application for accreditation. The Report and recommendation of the Agency must be published on the Agency's web page.

This process is slightly different in the entity of RS. According to the procedure of accreditation in RS, in the case when Evaluation team concludes that HEI doesn't fulfill all standards at the requested level it proposes to the RSHEAA to write a Letter of expectation to the HEI. All criteria that should be improved during the period no longer than a year are included in the letter together with a proposal of the methods and instruments that HEI can use. These standards are mandatory and before getting an accreditation, HEI must to apply them. Finally, based on the RSHEAA's Report and recommendation, Ministry for education of RS issues a decision about accreditation (up to 4 years), decision of accreditation with deadlines (no longer than three years) or decision on the rejection of accreditation.

Decision about accreditation is the end of the first phase when the process of evaluation implements but it is also the beginning of the next phase – post accreditation activities. In this phase HEI has to prepare, and submit to the Agency, Action plan for implementation of the Evaluation team's recommendations. After that, once a year HEI sends Report about the progress to the Agency. The process of external audit and the reaccreditation has to be repeated periodically.

Sixteen universities and three high schools in Federation of Bosnia and Herzegovina (hereinafter: FB&H) have passed the process of accreditation and accredited by HEA (HEA, 2016). On the other side 12 more universities and high schools are in the process of accreditation and their accreditation depend on the external reports of appointed Evaluation teams. Twenty one higher education institutions are enlisted in the Register of HEIs of Republic Srpska (universities or high schools/colleges). It is interesting that in this entity private institutions are more prone to get accreditation - only two universities and two colleges of accredited institutions are public whereas other institutions are private.

2.2 Accreditation processes at SEBS

School of Economics and Business (SEBS) is the leading HEI (faculty) in the economic and business area in Bosnia and Herzegovina. It was founded in 1952 as a member of University of Sarajevo, the oldest and the biggest university in B&H. During its long history SEBS was the base for founding and developing of other public faculties and universities in the economic area in B&H.

Currently SEBS has one national and three international accreditations. The first one is accreditation of the Agency for higher education development and quality assurance in Bosnia and Herzegovina. SEBS got this accreditation as the member of University of Sarajevo in September 2014, based on the Decision on granting the institutional accreditation to the University of Sarajevo adopted by the Ministry for Education, Science and Youth of Canton Sarajevo. Even before that, SEBS, as the individual Faculty obtained AQA and EPAS accreditations. Since the 2004/05 academic year, with the transition to the Bologna-based system, SEBS has developed many procedures aimed at ensuring the quality of its programs,

courses and programs outcomes. In that context the process of curriculum development and its revision was managed according to the AQA, EFMD and AACSB criteria and standards.

SEBS applied for the EFMD memberships in 2006. In 2008 it submitted application for the accreditation of undergraduate study programs which were delivered in English language. Four years later (2012) SEBS got the EPAS accreditation for bachelor programs Financial Management and Marketing Management. The School is a member of AACSB since 2007 and the institutional accreditation was granted in November 2015. SEBS is also a member of the European organization for quality (hereinafter: EOQ) where it is certificated by international norm ISO 9001:2008 (ISO 9004:2008, IWA 2:2007, 2009). The School also was in the process of accreditation by AQA from 2009 to 2011 and finally been accredited in 2011. AQA Accreditation includes the system of internal quality management for study area, learning and further education reviewed and evaluated them as effective trough Focus Audit (Agency for Quality Assurance and Accreditation Austria (AQ) Austria, 2013). This evaluation is implemented by Peer Review according to AQA quality standards. SEBS was awarded AQA certificate for six years, the period from 2011 to 2017.

According to the Framework Law of Higher Education in Bosnia and Herzegovina universities are the only subjects of accreditation and SEBS had no possibility to individually apply for the national accreditation; thus it obtained national accreditation in September 2014 as the member of University of Sarajevo. As a consequence, SEBS obtained international accreditations before the national one. Following the accreditation processes which were running simultaneously in the period of innovating and improving curriculums of the Financial Management (FM) and Marketing Management (MM) majors (2009/2010 academic year), SEBS used guidelines from the Joint Project 'Strengthening Higher Education in B&H' (SHEII) developed and published in 2008 (founded by Erasmus+ Program of the EU) and the Curriculum Development Good Practice Guide (part of the Joint Project SHEII, 2008).

In the processes of developing, monitoring, evaluating and revising the content and delivery of the curriculum and quality assurance procedures, SEBS was focused on basic stakeholders, starting from the students, employees, parents and business community. In order to accomplish its mission the priority was given to the creation and building high quality knowledge and research as well as to education of high-quality graduates whose competences and skills are compatible to the local and international market needs. Through establishing Business Advisory Board (BAB) - the body which includes the Chief Executive Officers (hereinafter: CEOs) and leaders of the most successful B&H companies - SEBS maintains permanent relations with the business community. Thanks to this cooperation SEBS gets information about needs and trends on the labor market, as well as necessary professions and skills that future employees have to have.

Following intention for achieving accreditation certificates, SEBS directed its activities specifically on developing two undergraduate study programs which were submitted for the

EPAS accreditation – Marketing Management and Financial Management. From the 2011/2012 academic year both programs have been fully delivered in English. General objectives of these programs are extracted from the SEBS mission and defined according to the EFMD standards and criteria. They are defined as gaining new knowledge, developing thinking and communication skills, foster IT skills and introducing ethics, social responsibility and international perspective. More precisely, the objectives are:

- to meet international standards in business/management education by educating highly motivated professionals who will be able to use acquired knowledge and skills and be qualified to work in international or domestic companies in finance and marketing area.
- to set high academic standards for the graduates and enable them to continue with the master programs at SEBS or universities abroad; in the second case they are becoming promoters of the SEBS educational brand.

All processes of internal self-evaluation and preparing of the Self-evaluating report, organizing a visit of the commission for external quality evaluation and auditing, and also applying recommendation gave by the Commission during the process were successfully completed at SEBS. The accreditation was approved in 2012 for the period of three years. In the post-accreditation period quality improvement has been implemented in order to monitor quality and implement internal processes of the quality assurance. As the result, SEBS was positively evaluated and reaccredited by the EPAS commission in 2015, now for the period of 5 years. These facts confirm SEBS's responsibility for assuring improvement of the quality practice in the future.

For the purpose of this thesis the focus will be on the EPAS accreditation. Namely, the research will be conducted among students of the undergraduate program and first year of master study. Since the master study semester start later than the undergraduate program, students still aware of the perception they have about courses, academic or administrative staff or other issues related to the education process at undergraduate study, more than similar feelings regarding the current study they just started with. As the new accreditation, acquired in 2016, AACSB is the one that students didn't have information or knowledge about at the moment when they had applied to the SEBS. It is obvious that this accreditation couldn't be the reason or factor influencing students' choice and decision about enrolling the university.

Neglecting this fact (and including some questions about the AACSB accreditation) would probably have negative effects on reliability of the research. Even then, students' responses and attitudes could be under the certain influence of the improvement of the SEBS image after receiving the AACSB accreditation. That could be treated as a moderating variable such as the image in the Grönroos (1984) technical – functional quality model. But including this effect would exceed the purpose of the master thesis; hence it will not be studied.

2.3 Do accreditations guarantee quality?

When it comes to the critical evaluation of the concept and idea of accreditation some authors (Ewell, 2015; Osbaldeston, 2014) argue that too much emphasis is put on the best practice instead of the new and inventive ways that could be used in the future and pose the question: is accreditation discouraging experimentation? It is possible that this point of view is supported by schools which are not able to achieve accreditation and are, as a consequence, in disadvantageous position. But one can find similar attitudes even in the schools that are being re-accredited but do not feel like having adequate autonomy; so they search for additional ways to improve their processes (Pears, 2014).

So-called American system of accreditation is especially the subject of criticism when it comes to the follow-up phase and checking the changes in quality levels of the HEI which were already accredited. With no responsibility for the continuous quality improvement, this space is filled by regional accreditation agencies that are concerned with the changing universities' capabilities to deliver what they market to the students. Unfortunately, B&H is far from this winning combination of the institutions for quality control.

Hernes and Martin (2008) state in their work that even though all universities are equal some are more equal than others meaning that even if they have the same accreditation they can differ greatly. But if all of them are accredited and if the primary EQUIS notion is that there is no "one right way" how come there are such strong assumptions about the great differences in quality. They offer a simple answer: "Universities are caught out by their own success" (Hernes & Martin, 2008, p. 19) and they are not trying to increase quality once when they receive the accreditation. The most serious critics of the accreditation process are connected to the motives and goals of the accreditation institutions (McFarlane, 2010). He refers to accreditation agencies, are private ventures and as so, they have profitmaximizing motives. Thus, strategies of these agencies are influenced by competitors and they often struggle with others trying to improve their own reputation (Knight, 2008). The relationship between competing agencies can sometimes be so severe that it creates so called "accreditation discrimination" which refers to discrimination of the institutions based on the fact that they are accredited by a specific agency (McFarlane, 2011).

Besides accreditation, HEIs in both developed and developing countries are concerned with the considerable growth in the private provision for HE. Globalization of education offers great opportunities for the students and academic staff but also creates a greater pressure for institutions to meet the standards defined and applied in highly developed countries and create programs that are comparable with counterparts in other countries which are in one hand also their competitors. All of them compete for the same international students who are necessary for achieving the accreditation and also for keeping it. Putting the accreditation aside, the key problem in the management of the quality of higher education services stays the same and it is related to the fact that educational sector cannot realize the direct implementation of the traditional concept of the quality control in the area of HE. Academic freedom and individual autonomy creates a culture that makes quality management approach more challenging than the one in other production or service areas (Lagrosen, 2004; J. C. Vinzant & D. H. Vinzant, 1996). If we add Hittman's (1993) critiques regarding traditional approach to quality assessment in tertiary institutions as too narrowing and too academically focused in higher education, it is obvious that new concepts of understanding, measurement and management of quality should be designed and applied.

Globalization brought new way of behaving in HE and participants accepted new rules: students embraced their role as a fee-paying customer but in return they expect "value for money" like any customer would (Watson, 2003;Narasihman, 2001). These facts put the universities in the position of answering properly to needs and wishes of students. So, providing high quality educational services and creating satisfaction amongst students became top priority of universities (Appleton-Knapp & Krentler, 2006; Thomas & Galambos, 2004).

Students' attitudes regarding meaning and effects of accreditation and also perception of universities and quality of HE services are more important than ever. High competitiveness and market rules of behavior in HE area push the universities in the positions of service providers struggling for the students' attention and loyalty. Therefore they have to treat students as valuable customers and create a mutual dialog in which students have a chance to evaluate, complain or make suggestions about the academic and non-academic issues at universities. These topics – quality of HE services and students' satisfaction will be presented in the next chapter.

3 THE FRAMEWORK FOR EVALUATION OF SERVICE QUALITY IN HIGHER EDUCATION INSTITUTIONS

The importance of service quality in higher education became very important issue (Shekarchizadeh, Rasli, &Hon-Tat, 2011) which is a direct consequence of increasing competition among different types of HEIs i.e. providers of HE services (Cubillo-Pinilla, Zuniga, Losantos, & Sanchez, 2009). On the other side, students simultaneously have been transforming from beneficiaries of non-paid public services to the customers and becoming the most important subjects of evaluation of higher education service quality (Henard & Roseveare, 2012). Consequently HEIs are supposed to monitor the quality of services and protect interests of the students and other stakeholders (Al-Allak & Alnasar, 2012).

3.1 Nature of higher education services and implications for service quality

Based on an analysis of service characteristics and industry and its comparison with HE services Henning-Thurau, Langer and Hansen (2001, p. 332) classified educational services into the *field of service marketing* while Oldfield and Baron (2000)define HE as intangibly dominant services and portrayed universities as providers of mental processing and, in most cases, high-contact services. According to many sources HE services are predominately intangible, perishable and heterogeneous. Moreover, professors and students participate in service interaction and both professor's teaching efforts and student's learning experiences are being simultaneously provided (Shank, Walker, & Hayes, 1995.).

In that context Clayson and Haley (2005) discuss the education as partnership in which students have responsibilities to other stakeholders; through the education they can contribute to the university and society. In the discussion about the nature of HE services Firdaus (2006b) adds an inherent problem caused by the service nature and dynamics which will further increase debates about the service quality definition and possibility for applying models for service quality measurements. It will be discussed in next few paragraphs how characteristics of HE services increase problems of the quality assessment and evaluation among the students.

Inseparability in the context of HE services implies direct contact among the students and the teachers, as well as contact with the learning environment and other service users i.e. other students in the classroom. This means that the bad lectures and classes actually mean poor service (Lovelock & Writz, 2011).Keeping in mind the nature of the lecture as the basic educational service and lecturers as main service providers, HE institutions must ensure high quality academic and non-academic staff if they want the provided services to be ones of high quality. Intertwining with this is the role of the students as the participants in the service delivery process (Palmer & Cole, 1995).

Perishability as another HE services characteristics creates additional limitations for the universities. HE services cannot be prepared in advance, inspecting and storing for the future students (Lamb, Hair, & McDaniel, 2011). Therefore perishability presents a potential barrier which, in majority of the cases, means that the service has to be "used" all at once. After it's done it only states in the customer memory without a physical evidence that the exchange ever took place. Introduction of distance learning as a new form in contemporary HE makes perishability and inseparability less relevant. At the same time, other service characteristics are kept similar relevance which they had before. However, it is hard to imagine that information which will correspond to written and prerecorded material in the case of distance learning could be a real and adequate alternative to interaction with the lecturer and other students. Interaction in the classroom, teacher professionalism and organizing skills as well as students participation affect the quality of HE services. Together with high level of

subjectivity typical for students' experience and evaluation of services, these issues have the highest importance for the process of quality evaluation.

Heterogeneity is also an important characteristic of HE services. Customers are crucial inputs in the service process and in most cases their behavior is unknown to the service providers in advance, so they cannot be put to the control test as some production inputs do. That makes the service delivery process hard to predict and control (Hoffman& Bateson, 2011). Except for the customers, service employees as human beings are also responsible for lower possibility of standardization since their mood and readiness for the cooperation are changing in different occasions. That for sure leads to a lack of consistency in providing of the HE services and as a consequence customers have different experience and perception of the service quality (Brochado, 2009; Firdaus, 2006b; Lamb et al., 2011). Most of the researchers support an idea about impacts of service characteristics on the higher education as well as quality of HE services.

3.2 Students as the customers in higher education

These days when students are surrounded by dozens of universities and have chance to share worldwide educational platform, the question imposes how it can be possible to regulate and standardized reliably the whole area. However three major groups are interested in maintaining the standards: universities, students who are looking for education and employers who want to be sure that the actual qualifications of their new workers match the degrees and the professions certified by the universities. Students get a lot of possibilities from the HE in 21st century which amongst other things enables them to move from the one university to another during the study and complete degrees at different universities (Crosier & Parveva, 2013; Teichler, 2004). These facts opened new opportunities for them "to try something new" and decrease their "switching costs" of changing a "service provider" i.e. the university (Burnhan, Frels, & Mahajan, 2003; Jones, Mothersbaugh, & Beatty, 2000). This clearly urges universities to treat their students as the customers and try to retain them.

In the educational process students have a double role: they have been categorized as the primary beneficiaries and also as the participants of the service interaction. That is the reason why they are referred as the customers in literature. Owlia and Aspinwall (1997) in their survey among the professionals concluded that HE students are the most important customers of the universities so it is obvious that service quality dimensions should be observed from the students' point of view. Alongside with that, the rising numbers of students who pay for their education cost reinforces the attitude that students should be treated as customers (Kanji & Tambi, 1999). For retaining current students and attracting new ones universities have to deliver high quality services and continually research students' perception of the quality as well as their satisfaction. Keeping that in mind meeting students' requirements and achieving their satisfaction are the major components for certification and accreditation of both private

and public HEI today. Following paragraphs are focused on the discussion about the quality and models for service quality evaluation.

3.3 Defining service quality in higher education

Educational sector is one of those where the nature of the industry does not allow direct implementation of the concept of the quality control. In the essence of the HEIs is the academic freedom and individual autonomy; none of them can be precisely regulated nor controlled. So, in educational sector, quality control process can only be observed together with other elements that students experience (Becker& Brookes, 2006).

Generally speaking, quality indicates the conformance to requirement or specification, and meeting or exceeding customer's expectations. Quality is also explained as a concept which compares performance and expectation (Kahn, Strong,& Wang, 2002; Reeves & Bednar, 1994) while Crosby (1979) defines the quality as defect avoidance. Researchers agreed that there is no single or superior way to define and measure service quality (Clewes, 2003), but they accept Parasuraman, Zeithaml and Berry's (1985) conclusion that the consumer-perceived service quality is a multi-dimensional construct.

Definition of the quality and the terms connected to the quality have been changing and evolving, from the ideas that quality should be treated as an excellence (Pariseaau & McDanie, 1977) or excellence in education (Peters& Waterman, 1982) to those where quality is defined as the level of conformance to the specification, and the most accepted, that quality is meeting and/or exceeding customers' expectations (Angel, Hefferman, & Megicks, 2008; Parasuraman, Zeithaml, &Berry, 1985). In the assessment of the service quality, it is recommended to adopt a long-term perspective, as it takes time to change people's attitudes, habits, knowledge and skills.

Grönroos (1990) connects service quality evaluation and the essence of services. He suggests defining overall service quality as unity of technical quality, or quality of service outputs, and functional quality, or the quality of service process; finally he proposes corporate image as a moderator variable (Grönroos, 1990; U. Lehtinen & J. R. Lehtinen, 1992). In this definition technical quality deals with *what is being delivered* to the customer and consider as relatively objective measurements of the quality. On the other hand, functional quality presents the quality of interaction between the service provider and the service recipients and focuses on *how it is being delivered*. Finally, corporate image is the result of cumulative efforts for creating reputation of HEIs in the past (Babić-Hodović, Mehić, & Arslanagić-Kalajdžić, 2011) and often impacts customers' perception of technical or functional quality.

Kotler (2003) also used categorization on the technical and functional quality but his attitude and understanding were explained differently. He had described quality as a characteristic of the product or service and he basically used technical quality for explaining tangible aspects of the service (for example safe environment or access to information) and relate functional quality to the way how the services would be provided to the customers, as well as relationships between employees and customers during the services process. Similar approach is supported by Murgulets, Eklöf, Dukeov and Selivanova (2002). They use the term technical quality for the evaluation of physical part of the service process, i.e. physical evidence; which is in literature included in the service marketing mix (Babić-Hodović, 2010; Hoffman& Bateson, 2011; Lovelock& Wright, 1999).

Obviously, the quality in HE is a complex concept and a single accurate definition is still missing (Harvey & Green, 1993). Stakeholders have different views on the quality depending on their positions, needs and interests. Anyway authors agree that service quality is subjective category and that the quality of HE services should be measured as a perception of students who are primary customers (Hill, 1995;Sanders, 2000; Ravidran & Kalpana, 2012) but also as a perception of secondary customers of universities such as parents, business or government. Everything leads to the conclusion that HEIs are facing with high challenges in providing high quality of services in globalized educational industry.

3.4 Quality, Satisfaction and Loyalty

In the service marketing theory and practice, service quality, customer satisfaction, loyalty and behavior are strongly interrelated concepts, but authors face the problems how to clearly separate one concept from the others. Most of them claim that service quality is antecedent of the customer satisfaction (Cronin, Brady, & Hult, 2000; Ferrell, Souchon, & Durden, 2001; Zeithaml & Bitner, 1996) thus satisfaction results in customer loyalty and behavior. Explaining customer satisfaction as the outcome of service quality perception Zeithaml (2000) assumes that customer satisfaction is influenced by the service quality, but also some other factors such as personal and situational factors, including individual's perception of potential risks or prices.

Cronin and Taylor (1992) and Boulding, Kalra, Staelin and Zeithaml (1993) take slightly different approach claiming that satisfaction has a mediating role between the customer perceptions of service quality, and on the other hand, their loyalty and behavior expressed as a positive reaction in a form of repurchase intentions and positive word-of-mouth spreading. Similar attitude about the impact of high service quality on satisfaction and, ultimately, the financial performance of service providers regardless of the industry can be found in the study provided by Žabkar, Makovec-Brenčič and Dmitrović (2010). On the contrary, if customer experience low quality they will probably complain or switch to competitors expressing in that way negative reactions on the low service performances(Chen, 2012).

Some authors connect explanation of the customer satisfaction to the type of the industry and service delivery always insisting on its multidimensionality (Marzo-Navarro, Pedraja-Iglesias, & Rivera-Torres, 2005; Richardson, 2005). In these studies customers' satisfaction is understood as an emotional reaction, a response to the specific service experience or

reflection of repeated contacts, i.e. aggregate experiences (Jeong & Lee, 2010). Similarly, Mittal and Kamakura (2001) state that customer satisfaction is a key factor of customer's desires for future purchase. Oliver (1999) connects satisfaction with the customer's sense about service outcome and its ability to fulfill standards of pleasure or displeasure, again defined from the customer point of view. Elliott and Shin (2002) also advocate the attitude that student satisfaction can be explained as the favorability of students' subjective evaluation of the service outcomes, process and experiences with HEI.

Students' satisfaction has crucial role for the university survival and development. Management of universities expect that satisfied students will share positive word of mouth, as satisfied customers usually do, and help universities to attract and recruit new candidates (Helgesen & Nesset, 2007; Mavondo, Tsarenko, & Gabbot, 2004; Wiers-Jenssen, Tensaker, & Grogaard, 2002). They also expect to be able to retain current students and to develop further cooperation with them; these attitudes are confirmed in different studies about service quality (Bloemer & deRuyter, 2010; Kumar, Smart, Maddern, & Maull, 2008; Storbacka, Strandvik, & Grönroos, 1994; Zeithaml, 2000).

As the third part of the chain **quality** – **customer satisfaction** –**customer loyalty**, loyalty could be expressed as an attitudinal or behavioral concept. In the first case loyalty implies emotional reaction on the relationships between service provider and service customers and customers' tendency to advise the service offer to other customers (Mosahab, Mahamad, & Ramayah, 2010). It could result in repeated purchasing of the customers, but not always. On the other side loyalty manifested as purchase behavior (Bolton, Kannan, & Bramlett, 2000) and repurchasing (Jacoby & Kyner, 1973; Fournier, 1998) will directly impact business performances. Based on that concept Bloemer (1999) define the loyalty as *observed behavior*. Discussions about the effects of loyalty on financial performances often end with the conclusions that attitudinal loyalty has more potential for the organizations' sustainability (Jensen& Hansen, 2006; Yi & Jeon, 2003).

3.5 Models for service quality measurement

Starting from the understanding of services as behavioral more than physical or tangible entities and the fact that higher education belongs to the service industry Brochado (2009) has concluded that the expected and perceived quality varies from customer to customer and consequently requests some form of the service quality models for quality assurance and monitoring. Her conclusion is very similar to those made by Firdauz (2006b) and earlier by Parasuraman et al. (1985), who also claimed that service quality needs a different perspective of definition and measurement in comparison to the products.

When discussing about the concept of service quality authors opt for one of two approaches: a) a *disconfirmation theory*, i.e. measuring a difference between customer experience in the service process and their previous expectation or differences among service performances and previous expectations and b) *performances measurement approach* that means measuring only perceived performances which are the result of customer experience. The theory of disconfirmation served as the basis of O'Neill and Palmer (2004, p. 42) definition of the service quality in higher education. They state that service quality in HE is"the difference between what a student expects to receive and his/her perception of actual delivery" which imply measurement of differences among the customers' experience (HE service performances) and their expectations. Parasuraman et al. (1988, p.17) have used the disconfirmation theory for defining perceived service quality as a "global judgment, or attitude, relating to the superiority of the service". Furthermore, they also define expectations in a form of "desires or wants of consumer's beliefs concerning the service received" (Parasuraman et al., 1988, p.17).

3.5.1 Disconfirmation based models for service quality measurement

Regardless of the approach, the disconfirmation or performance measurement, in all cases subjectivity is a "measure" of quality (Patterson & Johnson, 1993) since each customer uses his/her own criteria and attitudes in the service quality assessment. It is presumed that disconfirmation is a subjective belief, but the truth is that subjective nature of evaluation is also unavoidable characteristic of the performance based evaluation of the quality. In both cases, disconfirmation and performance based models, services are essentially individual experience with dimensions of higher educational services. For the service quality measurement, researchers developed different scales for the expectation as well as performance based models. Typical representatives and the most known disconfirmation-based models for the service quality measurement are presented below.

3.5.1.1 The GAP model for service quality measurement

The GAP model is disconfirmation model of service quality which measures a discrepancy between the customer expectation about the services, their performances and the service processes (Parasuraman et al., 1985). The discrepancy calculates by subtracting customers' expectations from service performances. After the service interaction customers' expectations can be met, exceeded or failed, so the results of the customer experience during the service interaction is the base for customers' evaluation of the service quality. The level of perceived service quality is higher when the size of negative gap scores is lower; it is a sign that the customers' experience comes closer to their expectation. The authors suggest calculation of the perceived quality through five (Parasuraman et al., 1985) or seven gaps (Luk& Layton, 2002). Festinger (1957) was one of the first authors who presented disconfirmation theory which was widely accepted after the GAP model was designed by Parasuraman et al. (1985).The model indicates main points of interaction as the key factor which influence customer perception of service quality, known as the "moments of truth" (Carlzon, 1987, p.3).

Gap 1 – **Knowledge gap** represents the difference among customers' expectations and managers' perception of customer expectations or wrong interpretation or understanding of

the customers' expectations from the management point of view. In this case the existence and size of the first gap has impact on the final customers' perception of the quality.

Gap 2 – **Standards gap** is the difference among managers' perception of the customers' needs and specifications which they prepare for the employees about the services that should be provided to customers. If the specifications are founded on wrong or misleading assumptions about the customers' preferences (which is a consequence of the 1st gap), it will be impossible to prepare adequate job specification and instruction for employees. The problems could also appear due to the managers' personal inability for giving instruction about duties or assigning authorities and obligation to employees.

Gap 3 – **Delivery gap** represents the difference between service specifications given to employees and the services they are providing. For the analysis of this gap it is important to take into consideration several issues, such as discrepancies among the managers' perception of customers' expectations and managers ability for expressing specification in a form understandable to the employees, but also employees' attitudes regarding the job, their feelings about the roles and positions which they have in the company and possible stress of individuals caused by the role conflict and the role ambiguity (Haltier & Ferrell, 1996). Factors related to employees feelings and self-perception may have negative influence even in the cases when the service specifications are clear and defined according to customers' wishes.

Gap 4 – **Information and communication gap** can be explained as the differences between previous communications and promises created and distributed by the company to the potential customers and provided services. Since companies' communication is one of the main factors influencing customers' expectations (Parasuraman et al., 1988) the Gap 4 is a logical consequence of the company's communication and excessive promises about services. Especially in the cases when companies create this kind of overpromising, despite the fact that it is obvious they cannot be provided with available resources and skills.

Gap 5 – **Perception gap** represents the difference between customers' experiences of provided services and their previous expectations about the services. Essentially the Gap 5 is a function of four previous gaps (Luk & Layton, 2002) which makes clear that each gap impacts customers' perception of the service quality (Parasuraman et al., 1985; Brown, Churchill,& Peter, 1993). Customers perceive low service quality and they are dissatisfied in the cases when service performances are below their expectations, i.e. when disconfirmation between the experience and expectation is negative.

Further analysis of the GAP model (Parasuraman et al., 1991) and additional studies that were done later as the answer to the critics addressed by the opponents, resulted in the extension of the model and identification of two additional gaps. These gaps are strongly related to the customer psychology, their ability of interpretation of the organization's communication and

messages provided by the service organization, as well as customers' feelings about different dimensions of the service experience and the level to which that experience impacts customer future behavior, decision and finally future expectations.

Gap 6 – Interpretation gap is the difference between advertising and sales promotion communicated by the service provider and customers' interpretation of that communication and these messages (Luk & Layton, 2002). This gap can be simply explained as a consequence of wrong perception of the company's values and internal culture by the customers, which is often caused by wrong "coding" of the messages. In most cases this is a consequence of the lack of connection among the operational and the marketing department, but also situations where the company consciously communicates more favorable conditions in order to improve its reputation between customers.

Gap 7 – **Service gap** represents the differences between the customers' total experience that includes perception of delivered services and the service process related to their interpretation of the company's promises on one side and the customers' previous expectations established before the beginning of the service process on the other. The main difference between the Gap 7 (Service gap) and the Gap 5 (Perception gap) lies in the issues which customers compare. The Perception gap (Gap 5) compares the service outcome and the service process during the service encounter with the previous expectations while the Service gap (Gap 7) integrates the whole experience, the one "before" and "after" the interaction, including customers' understanding of the company's messages and promises in a certain kind of *internal comparison*. In both cases previous expectations are the same, but other side of the equation is different.

3.5.1.2 SERVQUAL model

For the measurement of the Perception gap identified as the 5th discrepancy in the Gap model authors (Parasuraman et al., 1988) created a specific scale and the model – SERVQUAL model (Service Quality Model), today most known disconfirmation based model. Initially it was consisted of ten dimensions of service quality, but later a number of dimensions was reduced(Table 4).Currently the SERVQUAL model includes five dimensions: reliability, assurance, responsibility, empathy and tangibility (Parasuraman et al., 1985).

The model implies measurement of customers' expectations and, after the service process, customers' experience with the service performances. The difference between the experience (performances) and expectation results in the perception of quality. According to proponents (Parasuraman et al. 1988) the crucial characteristic of the model is wide applicability for different types of services such as tourism, banking and also HE services.

Original model	Refined Model	Description
Tangibility	Tangibility	Physical aspects of what is provided to users.
Reliability	Reliability	The ability to accurately and promptly provide the service, capturing the notion of flexibility and the ability to adjust the service to the users' needs.
Responsiveness	Responsiveness	Ability to help users and promptly provide the service, capturing the notion of flexibility and the ability to adjust the service to the users' needs.
Competence Courtesy Credibility Safety	Assurance	Competence and courtesy extended to users and the safety provided through operations.
Access Communication Understanding the user	Empathy	Individual attention provided to users

Table 4.Original and Refined SERVQUAL Model

Source: A.V. Zeithaml, A.Parasuraman. &L. L. Berry, *Delivering Service Quality: Balancing customer perception and expectations*,1990,pp. 22-25.

The main dimension of the model – **reliability** generally means that what is promised will be fulfilled and, in that sense, in service industry reliability is a synonym for consistency of good performances. **Responsiveness** simply means that employees will provide the service according specific customer requests even in the case when that practices imply neglecting formal rules. **Tangibility** refers to all physical "evidence" of the service i.e. physical facilities where the interaction is taking place and the equipment which is used for service providing. **Assurance** includes customers' trust and confidence in service providers. Employees have critical role in the process of confidence and trust creating; thus employees in the service sector have the most challenging role. The fifth, and final, dimension of the service quality **Empathy** which is related to politeness, friendly attitudes, understanding of the customers and the compassion in the cases when customers face some problems.

In the original form of 22 items, SERVQUAL was used in numerous service industries but even with the desire of uniformity authors argue that "context-specific items can be used to supplement SERVQUAL" (Parasuraman et al., 1991, p. 445). Wording adjustments are believed to yield more accurate results since they will make questions more specific and help respondents to understand questions better. One specific example of that can be found with Faganel (2010) who actually applied the model to a Slovenian business school where he had changed the word "employees" in number of statements to those of "administrative staff" or "academic staff" (on the basis of the focus groups' results).

When using SERVQUAL model authors are opting for one of two alternatives: choosing to use weighted or non-weighted model. The main difference between the two lies in measuring the relative importance of service quality dimensions. Discussion about importance of the service quality dimensions comes from different academic and operational research where the
results have confirmed the fact that customers tend to be more demanding and sensitive in terms of quality when it comes to dimensions that are more important to them (Cui, Lewis, & Park, 2003; Sachdev & Verma, 2004). Customers' attitudes regarding the importance of reliability, assurance, responsibilities, empathy and intangibility impact the level and the nature of service quality perception (Parasuraman et al, 1988). Results of previous studies confirm existing differences between scores in weighted and non-weighted SERVQUAL model (Parasuraman et al, 1988; Shahin, 2010). Interestingly, in most of the studies reliability and assurance were identified as the most important dimensions of service quality.

Although the SERVQUAL is proclaimed as the most influential and mostly used model in different fields, many theoretical and operational critiques are directed towards the model. Some of the most cited critiques are related to the ways and means of dimensions measurement, for example which factors are supposed to be included in the customer expectations and perception and also how the Gap 5, as the integral part of the model, is calculated from the four previous gaps (Babakus & Boller, 1992; Buttle, 1996; Lam, 1997; Newman, 2001; Smith, 1995). The criticisms are also directed to the idea of the universality of the SERVQUAL model and its five dimensions (Buttle, 1996; Carman, 1990; Cronin & Taylor, 1994). In this context Babakus and Boller (1992) had advocated attitudes that the number of dimensions depend on the type of services and service offer.

Some authors have been discussing statistical analysis of the SERVQUAL questioning convergent and discriminant validity of the model in the same service industry (Buttle, 1996). Others have been complaining on the measurement scales. Lewis (1993) was arguing against a seven-point Likert scale (Likert, 1932) and stated that the usage of this scale may cause respondents to overuse the extreme of the scale, since they can hardly clearly express and perceive differences that rise among levels two to six. Discussing about the same topic Babakusand Mangold (1992) stated that five-point Likert scale is a better option since it reduces level of frustration of the respondents and increase response rate and quality.

In the context of these critiques authors (Iacobucci, Grayson, & Omstrom, 1994) are questioning whether customers truly assess the service quality as the difference between perception and expectations; they remind that customers often use standards instead of the expectations to evaluate service quality. Other critiques are related to the following issues: inter-correlation between quality dimensions, focus on the service delivery but not on the outcome of service process, low number of items that cannot capture variability of each service dimension and finally the fact that the SERVQUAL score accounts for a low proportion of the items variances.

Despite all critics and discussions about the model, SERVQUAL still applies in various contexts and service industries; various modifications of the model were used in the field of HE as well. The goal of these modifications and combinations of the models is to monitor and measure students' experience about universities' academic and non-academic dimensions in

the integrated quality assurance process (Athiyaman, 1997; Brochado, 2009; Hill, 1995; McElwee & Redman, 1993; O'Neill& Palmer, 2003; G. Smith, A. Smith,& Clarke, 2007; Soutar & McNeil, 1996; 2003; Yang & Yeh, 2006; Yorke, 1992).

When it comes to the SERVQUAL's applicability many authors advocate the model simplicity (Sower, Duffy, Kilbourne, Kohers, & Jones, 2001)and its practicability since it could be used for benchmarking purposes (Brysland & Curry, 2001). Generally speaking academics and practitioners insist that the model is suitable because it measures key aspects of the service quality. Furthermore, Asubonteng, McCleary and Swan (1996) insist that SERVQUAL is popular among the managers because of its flexibility and applicability and the fact that it represents something similar to the skeleton that can be adapted to various organizational needs. The explanation of SERVQUAL model in this text is more extensive than the discussion about other disconfirmation models, as most of them are more or less extensions of the SERVQUAL.

3.5.1.3 Evaluation Performance model – EP model

In the discussion about service quality and its measurement Teas (1993) has been discussing conceptual and operational problems of the disconfirmation concept as the basis for service quality model designing. In the focus of his study are the expectations issues and the result of the analysis is a new model of the service quality measurement – Evaluation performance (EP model) which is also based on disconfirmation paradigm. One of the definitions of EP model has been offered by Firdaus (2006a, p. 75) in which he states that the EP scale measures "the gap between perceived performance and the ideal amount of a feature rather than the customer's expectation".

As the result of his research Teas (1993) developed two alternatives for expectations clarifying **Evaluation Performance quality model (EP quality),** where service performances (people behavior, physical facilities and educational environment) are compared with the ideal standards and **Normative quality model (NQ model)** in which service performances are compared with the normative quality. His conclusions were that EP model outperforms both SERVQUAL and NQ model although all of them belong to the group of disconfirmation-based quality models.

3.5.1.4 Other disconfirmation models for service quality measurement

Plenty of service quality models have been identified in last four decades starting from 1984 and the overview was offered in the research completed by Ghotbabadi, Feiz and Baharun, (2015). Some of them are presented in the text below.

Attribute service quality model (Haywood-Farmer, 1988) is essentially based on the calculation of performance – expectations differences. The category of "high quality" in this

model can be achieved only if the organization meets customer preferences and expectations consistently. The model includes three basic attributes: physical facilities and processes, people's behavior and the professional judgment.

Synthesized model of service quality (Brogowicz et al., 1990) also measures service quality gap but here previous experience with the service as the base of expectation forming is not mandatory. According to the authors, information getting through word of mouth, advertising or other media of communications sometimes would be sufficient for the customers evaluation of quality. They state that the company image and other external influences impact a customer expectations even without their personal experience with the service and the service provider.

Even if it is not as obvious as in previously discussed models **Ideal value model of service quality** (Mattsson, 1992) is also based on the theory of disconfirmation. In this case perceived ideal standards will be compared with the customers' experience. The ideal standards here are explained as beliefs about having desired attributes as the standard for evaluation. It is similar as the previously explained Evaluation performance model designed by Teas (1993).

All in all many different disconfirmation-based models were developed in recent decades, but still the SERVQUAL is the most favorite and the most criticized. The model criticisms became a base for development of the group of performance-based models.

3.5.2 Performance based models

Second stream in the service quality measurement is leaded by work of U. Lehtinen and J. R. Lehtinen (1992) and Cronin and Taylor (1994) and their *performance based models* for service quality measurement. The Service performance model - SERVPERF (Cronin& Taylor 1994) is the most prominent among them. In the text below except the discussion about SERVPERF model, characteristics and elements of other, most known performance based models is presented.

3.5.2.1 SERVPERF model - Service Performance model

Supporters of performance based models advocate that customers' assessments of the service quality, especially in the cases of continuously provided services, depend on the service performances only (Cronin & Taylor, 1992; Oliver, 1989; Quester, Wilkinson, & Romaniuk, 1995). The authors suggested that expectation items in the process of evaluation are unnecessary (Babakus & Boller, 1992; Cronin& Taylor, 1992) since the customers, consciously or unconsciously, include their previous expectations in the process of performances evaluation. Cronin and Taylor (1992) have insisted that results of the performance-based models are more reliable estimations and less biased in comparison to

SERVQUAL or EP scales (Cronin& Taylor, 1992; Llusar & Zornoza, 2000; Quester et al., 1995).

Critical analysis and evaluation of the SERVPERF model leads to the conclusion that the model is essentially unweighted perception of SERVQUAL components, i.e. the same as the SERVQUAL when it comes to service dimensions. It means that Cronin and Taylor (1992) have retained SERVQUAL dimensions: reliability, assurance, responsibility, empathy and tangibility and the same 22 items which had been proposed in the original model (Parasuraman et al., 1988). Measurement of the expectations is the only issue which is excluded from the SERVQUAL model when Cronin and Taylor (1992) had designed the SERVPERF one.

Expressing serious criticism against the SERVQUAL model and its scale, but still keeping the same dimensions of service quality, Cronin and Taylor (1992) tested their assumptions about role of the expectation in several industries in order to confirm arguments about superiority of the 'performance only' scale over the SERVQUAL scale. They find that SERVPERF shows better predictive power than the expectation-based models. According to them it is not relevant whether the customers are directly asked about their expectations regarding services. The authors assume that during the service interaction, when customers "process" service performances, comparison of the experience and expectations are inevitable. Looking from this standpoint one can conclude that elimination of the expectation determinant from SERVQUAL is formal, not essential change. This is the reason why Firdaus (2006a) concluded that both instruments share the same concept of the perceived quality and that difference lies in the way of calculation. Another argument for the SERVPERF model acceptance is the one related to the simplification of the research administration and customers' convenience, is not questionable even in the cases where the previously mentioned formal or essential changes were being discussed.

Boulding et al. (1993) also discard the basics of the SERVQUAL model and confirmed principles of SERVPERF by saying that the best way for service quality measurement is the evaluation of performances related to the customers' experience. Quester et al. (1995) has confirmed similar results about SERVPERF's superiority compared to the SERVQUAL in the research about advertising industry in Australia and concluded that SERVPERF model performs the best in the service quality evaluation.

On a somewhat different note, Francois and Carillat (2007) in their meta-analysis discovered that in spite of all discussions and arguments provided by the researchers about the superiority of SERVPERF over SERVQUAL, their results suggest that both scales are adequate and equally valid predictors of overall service quality. The truth is that SERVPERF is simpler alternative for collecting data and more acceptable to the respondents during the research process, but it is proved that SERVQUAL has significantly higher importance and power as a diagnostic tool in the company.

3.5.2.2 Importance Performance analysis - IPA analysis

Importance-Performance analysis (hereinafter: IPA; Slack, 1991) is also one of multi-attribute models and it is focused on identifying strengths and weaknesses of services providers as well as the possible areas that should be improved due to their importance for the customers. Through this instrument two dimensions will be identified: the relative importance of service attributes for customers and service performances evaluated by the customers. This analysis is very useful in the cases when companies have scarce resources. The IPA matrix helps companies not only to identify customers preferences and perception of different attributes importance, but also the level to which the company is able to respond to the customers' preferences. Basically, it gives clear sign which are priorities that the company should define in its future strategic orientation.

3.5.2.3 Kano model

Most of the models for service quality measurements are essentially one-dimensional models. They evaluate dimensions of the service(s), relations between quality dimensions and satisfaction concluding that the level of performances causes customers satisfaction or dissatisfaction (Kuo, Chen, & Deng, n.d.). Those quality models are mutually distinct based on the quality criteria and quality dimensions which customers evaluate. Very few of them investigate importance of the quality dimensions for customers satisfaction. Moreover, the models generally ignore mutual correlation among dimensions or criteria.

Kano model (Kano, Seraku, Takahashi, & Tsjui, 1984) has different approach. Authors created two-dimensional model, studying simultaneously performances or sufficiency of dimensions (attributes) and customers' satisfaction with the performances. The assumption of the Kano's model is that higher quality does not necessarily lead to higher satisfaction for all quality dimensions (Bilgili & Ünal, 2008). The authors of the model concluded that in some situations availability of quality dimensions and/or good performances are not related with the customer satisfaction. Despite the fact that attributes of those dimensions provided with above the average quality, or even with the high quality, customers do not show satisfaction.

For the analysis of service or product quality Kano model (Kano et al., 1984) uses relationships of the performances of quality dimensions and the customer feelings about those dimensions; the positive feelings i.e. customers' satisfaction or the negative feelings i.e. customers' dissatisfaction. The logic of the model is similar to Herzberg's Motivation-Hygiene Theory applied in management(Herzberg, Mausner, & Snyderman, 1959, 1993). In both models authors assume that dimensions of the quality and instruments for the motivation do not have the same importance. Using quality dimensions' performances and also customers' feelings about the quality dimensions, authors' of the Kano model defined five basic groups of attributes:

Basic attributes – known also as "must-be" or "must-have" attributes include the group of quality characteristics that customers perceive as basic and expect them to be always available, so the service providers must identify those attributes at the very beginning of the service process designing. Namely, if those attributes are available customers do not feel satisfied, but in the case when they are not available customers will be very dissatisfied. The problem that service providers face with is related to the fact that customer will never ask for those attributes since they consider them as basic necessities, but probably will leave the company which are not ready or able to offer such basic attributes. In the case of HE services students expect physical conditions and the facilities that can be used to develop students' interests and talents, up to date books and journals in the library, effective communication with the university and similar.

One-dimensional quality – "differentiators" or differentiation attributes are characterized by proportional changes of perceived quality and customer satisfaction. The higher the level of quality is the higher customer satisfaction will be. Companies use these attributes as the basis for development of the competitive advantages, and as the factors for attracting new customers and also for successful positioning. In the case of HEIs differentiation attributes can be the staff readiness to help students and lecturers recommendation about the appropriate textbook as well as useful additional sources or the fact that academic staff is always available to the students. This group of attributes sometimes has the most important role in the HEI reputation creating.

Attractive attributes – "delighters" or exciting attributes make the group of dimensions or elements of experience which customers do not expect. Potential customers start buying of the products or services with information collected from different sources (previous experience, marketing campaigns, word-of-mouth) but sometimes they are surprised by the level of quality, additional services, employees attitudes and empathy. Students are exciting when up to date equipment is available for the learning process supporting, especially in the cases when those issues are highly above the standards in other universities.

Indifferent attributes – include essentially neutral factors and quality attributes that have no impact on the customers' feelings. In the case of indifferent attributes customers' perception is not affected by their availability. For example students don't care about the sports facilities or the way how employees are dressed (especially in the context of transitional economies).

Reverse quality – these elements have negative impact on the customer satisfaction. When they are present customers will be dissatisfied. Large groups of students assigned to the course, number of classes and many tasks they have to provide during the semester are typical examples of the reverse quality elements in higher education.

3.5.3 Quality models designed for the higher education services

The SERVQUAL and SERVPERF models, as the most known and applied disconfirmationbased and performance-based models have been often used for measurement of the higher education services quality. Except them other models are specifically designed for the higher education such as **H**igher Education Total Quality Model HETQMEX (Ho & Wearn, 1996), HEdPERF - **H**igher Education **PERF**ormance Model (Firdaus, 2004) and **H**igher Education **Qual**ity - HiedQual (Annamdevula & Bellamkonda, 2012); we mention only some of them. The authors of the models specifically developed for the higher education services advocate their benefits and superiority over the original and modified SERVQUAL, SERVPERF or other models applied in many educational researches. In the text below, these models will be explained by the chronological order of their creation.

3.5.3.1 HETQMEX

SERVQUAL model has been used in different areas with or without adjustment of the original service quality dimensions to the specific characteristics of measured services. Ho and Wearn (1996) used SERVQUAL in combination with the TQM for quality assurance in the higher education services. The result was HETQMEX model, the Higher education TQM excellence model which is based on the fundamental concepts of service quality. Authors started with the idea and basic principles of the Total Quality Model (hereinafter: TQM model) defined by Tobin (1990) and advocate continuously improving of the operational dimensions and the organizational culture with keeping focus on gaining the competitive advantages. Broadly speaking TQM may express itself as the continuous improvement through increases of the effectiveness, efficiency, cohesiveness, flexibility and competitiveness (Ünal, 2001).

These authors have identified main components of the TQM process in a form of 5S: Structurize (organization), Systemize (eliminate the obsolete and duplicate files and pieces of the equipment), Sanitize (cleaning inspection on fittings and the equipment), Standardize (the process of standardization of the way how service providing, or the form how they are documented) and Self-discipline (individual control according to the organizational culture and principles). In that framework several TQM processes have been developed including quality control in marketing and education, quality control circles, ISO 9000, total preventive maintenance and the total quality management.

The disconfirmation-based concept is accepted in the HETQMEX model and the expectations and the perceptions have been taken into consideration. Quality specifications are based on the teaching and learning plans (Ho & Wearn, 1996) where aims and objects are specified together with the purpose of modules, the assessment format and other detailed information about the course. Creators of the model consider the HETQMEX as self-explanatory and simple gradual and ongoing long-term process, but the process which suppose to result with the sustainable competitiveness.

Despite the positive attitudes and arguments presented by the originators, institutions in higher education industry have to be very careful when they consider HETQMEX for the purpose of researching students' perception of service quality. Explaining the model as seven phases and emphasizing that HEI can start with the quality management at any part of the chain, Ho and Wearn (1996) still insist that the operations management should be the first step. Obviously, the base for the HETQMEX model is the same as it was for the traditional TQM i.e. strict procedures and processes of designing and implementing quality dimensions. However, the nature of HE services as mental processing services and in most cases high contact services make strict standardization as well as "zero-defect" implementation impossible in HE. The service process inseparability as well as students and teachers participation in the teaching and learning process confirm that precisely defined process of the service quality measurement is not acceptable for the HE services. Since the evaluation and perception of educational (academic or non-academic) services quality is subjective, highly standardized processes are not the optimal way of monitoring and management of the service quality (Palmer, 2008).

3.5.3.2 Higher Education Performances - HEdPERF model

Respecting the facts that the nature of services will impact customers' perception of the quality and dimensions which they perceive as important Firdaus (2004) had developed HEdPERF as a special model for measurement of the quality of higher education services. It comprises of six quality dimensions and 41 items, which are already used or specially created for the higher education services. Namely, for the purpose of this model, Firdaus (2004) adopted some dimensions and items from the SERVPERF scale and developed additional dimensions assuming that students are the main customers of the HEIs. Finally, the model ended up as HEdPERF – combination of 13 SERVPERF items and 28 items creating specifically for the HE services which are generated based on the literature and qualitative research (Firdaus, 2004).

Reliability and validity of the HEdPERF model have been tested in several Firdaus's studies (2004, 2005, 2006a). In the research conducted on Malaysian universities the author concluded that students' perceptions of the service quality can be measured through the academic and non-academic aspects, reputation, access to different issues, program issues and understanding. He also stressed that similar studies should be applied for the secondary customers of universities – parents, governments, business corporation (as future employers) and the society. According to his understanding, the previously mentioned research of the consumers' perception does not cover all aspects of higher education services. Therefore, Firdaus (2006a) included more educational related dimensions in the HEdPERF model:

a) Factor 1 - Non-academic aspects - include dimensions that are explaining variables necessary for the students to complete different obligations related to the administrative procedures, enrolment, contacts for using other universities' resources and similar. All those activities have been provided by non-academic staff and their function is to create support for the students. Like in other types of high contact services, non-academic staff is supposed to be available, supportive and ready to resolve potential problems or administrative failures. Randheer (2015) describes this factor as the paper work with non-academic staff from the admission to the end of the course.

b) Factor 2 – **Academic aspects** – include different areas related directly to the essence of HE services. Universities have to have highly educated and experienced academic staff able to offer high quality programs with flexible structure. Furthermore, it is expected from academic staff to respond on the students' request for assistance, to have good communication skills and provide feedback about students' progress. Everything has to be based on the university's ability to offer locally and internationally recognized degrees. Factor analysis in Firdaus's (2006b) research confirms an importance of this factor similarly as the evidence of previous studies (Surprenant & Solomon, 1987;Leblanc&Nguyen, 1997).

c) Factor 3 - **Reputation** - shows success of the HEI in building and projecting an institution professional image. This factor is consisting of the items related to the recognition of universities' degrees and diplomas by the national and international accreditation agencies, other universities and business community. The reputation as the factor influencing customer perception of service quality can be found in the research provided by Grönroos (1984), Nguyen and LeBlanc (2001) and other authors' studies (Adee, 1997; M. Joseph & B. Joseph, 1997; Joseph et al., 2005; Sohail & Shaikh, 2004).

d) Factor 4 - **Access** – consist of the elements which are related to the universities' ability to offer different channels of communication with the current and potential students, availability of supporting services, convenience and simplified processes that help students at different way. The *access* has also identified as very important factor in other studies about the service quality, such as Parasuraman et al. (1985), Stewart and Walsh (1989), Owlia and Aspinwall's (1997) research.

e) Factor 5 - **Program issues** – is related with the core of mission of the HEI and reasons why students enroll in the university. Reputable academic programs, professions and specializations present the key competitive advantages of the university and reasons for choosing specific university instead of some other universities. Academic programs have been included in many studies as the crucial factor for the evaluation of educational services quality and have been always considered as the factor that has extremely high importance (Angell et al., 2008; Cook, 1997; Joseph et al., 2005; Sahney, Banwet, & Karunes, 2006; Singh, Grover, & Kumar, 2008; Soutar & McNeil, 1996).

f) Factor 6 - **Understanding** – is related with certain kind of additional services, those related to the academic issues, different dimensions of social life and personal needs. In the first case it includes university's ability to provide counseling and coaching while in the second case it could be campus location, accommodation or health services. Once again this factor and its elements can be found in other papers and works, sometimes differently explained. Some elements of HEdPERFsuch as "physical conditions" Parasuraman et al. (1985) previously included in the tangibility; the same categorization is accepted by Cronin and Taylor (1992).

3.5.3.3 HEdPER-SERVPERF

Apart from the HEdPERF as industry-specific scale Firdaus (2004, 2005, 2006b) had decided to combine this model with the SERVPERF one. Since the HEdPERF started with the same logic as the SERVPERF, the author wanted to make comparison between two of them and combination of these models, i.e. comparison between SERVPERF, HEdPERF and the HEdPERF-SERVPERF. His intention was to determine which of these models is superior in terms of unidimensionality, reliability, validity and which of them explain more variance of the service quality. For merged HEdPERF-SERVPERF scale Firdaus (2006a) used scale adopted from the original HEdPERF. By creating merged HEdPERF-SERVPERF scale for the purpose of comparative analysis of different models Firdaus (2006b) included the "full package", dimensions and items of both models, 22 SERVPERF items classified in five dimensions.

After the factor analysis **four factors** are identified in merged HEdPERF-SERVPERF scale: the first two belong to the original HEdPERF – **non-academic and academic aspects** while the last two were basically derived from SERVPERF model – **reliability and empathy**. Since the HEdPERF factors are already explained and we do not want to repeat that explanation, while the SERVPERF factors are just named as the dimensions of the model and shortly explained in the analysis of the SERVQUAL model, reliability and empathy in the context of HE services quality as dimensions of the quality evaluation will be discussed here.

Reliability - includes items related to the academic and non-academic staff ability to provide services dependably and accurately. This is the factor confirmed as the most important in most of the SERVQUAL and later on SERVPERF researches in different service industry. Because of the specific characteristics of services, high risks in pre-purchase phase and dominance of the experience and credence attributes in the process of service evaluation, customers in most cases consider reliability as the crucial quality dimensions (Babić-Hodović, 2010). The customers have confidence in the companies which are ready and able to provide service outcome and the service experience as promised before the interaction. In regards with universities, reliability are strongly connected to academic issues because the programs, knowledge, skills and the degrees depend on the universities and mostly academic staff ability to provide and offer high quality and superior educational services.

Empathy- includes personalized communication, understanding and sympathy of employees and service providers for customers and users who are facing with the problems and inconvenience during the process of services buying or using. Those problems are sometimes caused by providers who refuse to respond to customers' special requests or by the providers' internal failure. In both cases customer is the one who has negative experience. In the case of higher education, empathy implies an access, communication and student understanding, direct contact and the ability to answer and react on their specific needs and questions. If we look at the original HEdPERF scale similar items can be found in the Access factor.

Comparing only these three presented models, one can see a lot of similarities and overlapping areas. Many authors have already mentioned importance of academic and non-academic aspects of the higher education services (Gibson, 2010; Soutar & McNeil, 1996) while reliability and empathy were discussed and analyzed as the important dimensions of SERVQUAL and SERVPERF models (Parasuraman et al., 1988; Cronin& Taylor, 1992). They also have been applied and tested numerous times as a part of earlier researched models. When it comes to the number of factors it is important to stress that HEdPER-SERVPERF as the merged model is not exactly consistent with the six-factor structure in the original HEdPERF model nor the five-factor structure in the SERVPERF model.

Comparative testing and analysis of all three models has been provided in terms of unidimensionality, reliability, validity and comparative regression analysis in order to evaluate which of them is more suitable for the service quality evaluation in the HE industry. Firdaus (2006a) compared performances of SERVPERF, SERVPERF-HEdPERF and HEdPERF scales and pointed out the benefits of HEdPERF and its usage in HE. The result of analysis showed that original HEdPERF model with six factors (Non-academic aspects, Academic aspects, Reputation, Access, Programs issues and Understanding) and 41 items offer more reliable estimations, construct validity explain more variance and finally resulted in a better fit. In addition, the model itself is more focused on the specific areas in HE and this fact makes process of researching easier for the students and for the analysis (Firdaus, 2006b). Alongside with the superior position which HEdPERF earned for itself, a great advantage of this scale is the fact that it is more detailed and specific in areas that are important when one evaluates the service quality in higher education sector. Therefore, Firdaus (2005) in his researches concluded that SERVPERF model despite superiority in different service industry did not prove its superiority in the case of higher education services.

Another important recommendation made by this author was the proposal for widening the measurements by including the opinions of other interest groups, primarily employees as internal customers. That would provide a better insight in the HE service quality and potentials for its improvement. Quality improvements, done only externally, without in-house improvements would result in a lesser satisfaction of employees. Since they are crucial element in service providing, the effects of that improvement will be short-term.

Brochado (2009) continued discussion about service quality models appropriateness by conducting a comparison between the instruments for measuring quality in HE institutions. He analyzed the adequacy and impact of the SERVQUAL, SERVPERF, importance-weighted versions of both of those models and HEdPERF, and stated that HEdPERF and SERVPERF have the best capability for service quality measurement. However he was not able to say which one is superior (Al-Alak & Alnasar, 2012).

3.5.3.4 HiEdQual – Higher Education Quality

Annamdevula and Belamkonda (2012) developed the Higher Education Service Quality model (HiEdQual) for the evaluation of service quality in the HE sector. The model includes five service dimensions: teaching and the course content, administrative services, academic facilities, campus infrastructure and support services. Furthermore, for the specific use of services quality measurement in HE authors suggest the "theory-based model for program quality evaluation", understanding it as a combination of two approaches: a) the system approach developed by Mizikaci (2006) and b) the higher education application framework (Lewis & Smith, 1994).

According to the **system approach** total quality is supposed to be understood as a combination of a social, technical and management systems. On the other side, in the **program approach** operations are explained as the transformation processes that include inputs to the organization, techniques and methods for their transformation, and finally, outputs i.e. services (or products) designed and delivered to the students or customers for whom the process was planned.

It is clear that challenges in developing the performance indicators for measurement of the HE quality are caused by changes in higher education services. In addition to the university culture, different social values, skills which graduates supposed to have (Ginsberg, 1991) and students' perception (Bemowski, 1991) have increasing importance in the context of contemporary competition at the educational market. Once students start to behave as customers, HEIs have to start to behave as companies and work on identifying determinants and critical factors for students' understanding of the education service quality. As a consequence, nature and structure of the higher education market as well as independent institutions for evaluating quality of the universities' performances became factors and subjects having strong influence on the management of HEIs and their business strategies.

After discussions about HEIs accreditation and models for measurement of the HE services quality next chapter presents the results of the research conducted at SEBS among students enrolled in the accredited and non-accredited programs with the purpose of evaluating differences in their perception of the service quality and their satisfaction, and eventually the impact that accreditation has on perception and students satisfaction. Both issues are very

important, as the bases for differentiation in education business and as the strategy for acquiring and enrollment of potential students.

4 EMPIRICAL RESEARCH ABOUT THE IMPORTANCE OF FACTORS AFFECTING SERVICE QUALITY AT SEBS

4.1 Research objectives and methodology

The purpose of this thesis is to discern the students' perception of the quality of the accredited programs and to weigh the importance accreditation has in their decision to enroll at the School of Business and Economics Sarajevo, i.e., the role accreditation has in the student's decision process about their choice of university. The contribution of the thesis was theoretical: systematic reviewing of the types of accreditation and the models of service quality measurement; also, an empirical evaluation of the current situation regarding availability and acceptance of international accreditations in B&H and finally the impact that accreditation has on the students perception of HE service quality.

The main objective of the thesis and research is to find out what role accreditation plays in assessing service quality. The set of additional empirical goals are defined:

- To see if accreditation affects the student service quality perception measured by the HEdPERF model.
- To see if students are assigning the same weight to all factors impacting upon their perception of quality or do they find accreditation to have a greater impact.
- To draw parallels between students attending accredited and non-accredited programs at the School of Economics and Business which will show differences in their expectation and whether the accreditation provides additional value to their perception of the institution.
- To see if accreditation influences students' expectations about their career prospects and employability after completing the program.
- To see whether the level of quality perceived by students attending EPAS accredited courses and non-accredited courses is different and whether accreditation in any way altered the expectation and perceived satisfaction of students attending SEBS.

The method of data collection was by a questionnaire which consisted of a total of 64 questions, including demographic questions. The entire questionnaire can be found in Appendix C. Prior to the distribution of the questionnaire, a focus group with students was organized as a way of assurance that the areas and questions in the questionnaire are relevant to SEBS students, i.e., whether the HEdPERF model is applicable. The second step was testing the validity of the questionnaire and, for this purpose, 20 students were asked to undertake pilot testing, in order to check for omissions, errors, duplications or potential

ambiguities in the questionnaire. After the finalization of these phases and language adjustments, the final version of the questionnaire was prepared and distributed to students from EPAS accredited programs: Marketing Management and Financial Management and to students from non-accredited programs including the following programs: Accounting and Auditing, Actuarial Studies, Banking and Insurance, Global Business, Management and Informational Technologies, Management and Organization. Data from 416 completed questionnaires were analyzed using SPSS and STATA and the CFA analysis was reported in LISREL. After testing for the reliability and validity of the scales, a hierarchical linear regression and an independent t-test were done. In the following parts, a detailed explanation for each phase is presented, starting with the operationalization of the constructs.

4.2 Operationalization of the constructs

A conceptual model was developed in order to explain the influence of seven factors explained above, on the quality of the HE services that SEBS provides (see Figure 1), based upon the following factors: Academic staff (HPAA), Reputation (HPR), Program (HPP), Administrative staff (HPNA), Access (HPA), Understanding (HPU) and Accreditation (HPACC). When it comes to the operationalization of constructs, we extended a six-factor HEdPERF model that was developed by Firdaus (2004) with an additional factor for the accreditation of higher-educational institutions. HEdPERF has 13 items from SERVPERF scales adapted to the HE and 28 items concerning higher education specifically, resulting in 41 items in total, grouped into six factors/dimensions. Accreditation is included as an additional factor which is important for students in evaluating the quality of the Institution (SEBS)that provides HE services. Coding for all the items in the questionnaire is in Appendix D.

Academic Staff, Reputation, Program issues, Administrative issues, Access, Understanding, and Accreditation were measured by using a five point Likert-type scale (ranging from 1 = completely disagree to 5 = completely agree). For all items concerning overall quality, a five point scale was also used but with adjustments in the descriptive explanations joined to values. The variables in the model are defined as latent, thus each one is measured through various items that are included as statements in a questionnaire.

Five demographic variables were measured as controls in the model and those are: gender, level of study, student status, program major and the highest qualification the student is planning to achieve. The questionnaire had two parts; demographic information and questions regarding the perceived quality grouped in seven sections for each factor. Both factors for service quality perception evaluation and control variables directly affect the quality of services. Since one of the research questions is whether there are differences between students attending EPAS accredited and non-accredited programs, this variable is also included in the model.

Non-academic aspect looks into the quality and responsiveness of the administrative staff of the Institution (SEBS). The efficiency of dealing with student complaints, attention, accurate information, availability and communication quality are some of the dimensions of the relationship between students and non-academic staff. The support of non-academic staff is important for enrolment, administrative procedures, record of grades, paperwork for thesis etc.

Academic staff is a primary provider of services in HEIs. Educational background, expertise and professionalism are the most important determinants of the level of service quality which academic staff will provide, but they are certainly not the only ones. Having devoted time for students, providing feedback and readiness to respond to students' requests for assistance are also crucial for successful interaction.

Reputation plays an important role in creating students' expectations before enrollment at HEI. In order to have a good reputation, an institution has to display a professional appearance and provide adequate facilities, optimum sizes of class groups and have established some sort of internal quality program

The factor that Firdaus (2004) named **Access** describes the accessibility and availability of the staff for communication with students, as well as for convenience, and clear and simple processes that students will face. Essentially, dimensions of Access are at the core of the process of HE services provided and, in many cases, have crucial importance for the student's perception of HEI.

Program and its flexibility is a factor presented in Firdaus' work connected with the quality and variety of programs a higher education institution offers. As explained earlier in the thesis, reputable academic programs, professions and specializations present the key reasons for choosing a specific university and key competitive advantages for education service providers.

As sixth factor named **Understanding** refers to some additional services students need and the university's ability to recognize the existence of a need for these services. This factor includes performance feedback, certain academic issues, as well as responding to personal needs, such as providing health services, accommodation, the setting and functioning of various student bodies, such as the Student Union.

Besides these six factors that are part of HEdPERF model, **Accreditation** is added as a seventh factor for the purpose of this thesis, since it plays an important role when students decide at which university to enroll. It is one way in which an educational institution proves that the programs are of high quality and variety, the staff is professional, that the institution is recognized as a prestigious one and the one which fulfils standards established for the higher education area. Accreditation is an added dimension and the items included stem from

a theory which, later on, is face validated (approved and/or rejected at the student focus group). Items were further validated through the pilot survey with 20 students. This process resulted in a 5-item scale for accreditation which was used for further analysis.



Figure 1. Conceptual Model

Based upon research questions defined for the purpose of the thesis, as well as on the general theory of service quality, the following hypotheses are developed:

H1: Perception of the professionalism of HEI's academic staff positively impacts upon the overall perception of the institution's service quality.

H2: Perception of HEI's reputation positively impacts upon the overall perception of the institution's service quality.

H3: Perception of HEI's program quality positively impacts upon the overall perception of the institution's service quality.

H4: Perception of HEI's administrative staff helpfulness positively impacts upon the overall perception of the institution's service quality.

H5: Perception of HEI's fair and respectful treatment positively impacts upon the overall perception of the institution's service quality.

H6: Perception of the HEI's feedback and procedure quality positively impacts upon the overall perception of the institution's service quality.

H7: Perception of the HEI's accreditation quality, based upon the information that is known to students, positively impacts upon the overall perception of the institution's service quality.

H8: There are differences in the perceptions of quality amongst students enrolled in accredited and in non-accredited programs.

4.3 Data collection and the sample

In order to evaluate and test the conceptual model developed, qualitative and quantitative research methods were used. The main focus of the research was placed on the test of eight identified hypothesis related to student perception of the quality of the HE services provided by SEBS.

Qualitative research is recommended by Hennik (2007) as the first step in the collection of primary data. According to his study, focus groups are a way of "encouraging a range of responses which provide a greater understanding of the attitudes, behavior, opinions or perceptions of participants on the research issue" (Hennink, 2007, p.6). Having in mind this recommendation, as well as the need to check the questionnaire before starting with the research, a focus group was chosen as the prerequisite step before distribution of the questionnaire.

The focus group was organized in order to test whether the opinions and attitudes of SEBS students match the model used in the thesis. It was important to check whether there were any extreme discrepancies which could make the research obsolete. A focus group of nine students was gathered at SEBS, out of which five students were from accredited, and four from non-accredited programs. To ensure the representativeness of the focus group, the age, gender and year of study structure were aligned with the general structure of the programs. The students were invited to participate after at least one semester/year was completed, so they had attended and passed more than five courses in their programs.

Students were asked what they found to be the most important factors for the evaluation of SEBS service quality. They were also asked to name the most influential factors that helped them to make the final decision, at which University and Faculty to enroll. After comparing the focus group report with the factors in HEdPERF, substantial similarities were found between them as was well as with previously identified factors in the literature. Respondents discussed and identified activities and issues in the area of teaching/learning services, the timely release of information, support services, the attitudes and effectiveness of employees

working in administrative, student and library services, IT support and the possibility of contacting their professors, teaching assistants and administrative staff. Student feedback and opinion about service quality is extremely important for the institution. Alongside that, three professors of the Marketing department have been contacted for discussions about the quality dimensions identified by the students. Several additional elements were identified; they pertained to student effort and academic performance.

Based on the findings obtained from the focus group and the analysis of factors students identified as important, high similarities could be found with the findings arising from specific models created for higher education service quality measurement. This justifies the choice of the HEdPERF scale (Firdaus, 2005) since its dimensions include most of the factors and elements which have been identified as important by the students of SEBS. This represented enough confirmation about the suitability of the questionnaire to continue with the process of testing.

The next phase was to test the HEdPERF questionnaire on students of accredited programs – Marketing management and Financial management and also students of non-accredited programs. The original questionnaire designed by Firdaus (2005) was subjected to a face validity test. Consequently, some statements that are not relevant for the SEBS were excluded from the questionnaire, including students' opinions on sport facilities, health care provided by the School and campus organization.

Testing was undertaken in a pilot survey with 20 students, in order to check their perceptions about potential ambiguities, errors or omissions in the questionnaire. Their comments and suggestions about possible improvements were included in a form of additional explanation for respondents in the pre-phases of the research process. Some expressions were adjusted so they would fit the local language more appropriately and also make it easier and more understandable for students. After the completion of this phase, the final version of the questionnaire was prepared.

Students attending accredited programs filled out the questionnaire in English whilst students of non-accredited programs completed the questionnaire in Bosnian. The survey was conducted during the exam week in venues when students were supposed to take their tests but half an hour prior to the final exams, in order to avoid the influence of the final exam's results on students' attitudes regarding the program quality. Students attending accredited and non-accredited programs were completing the same questionnaire with the exception of two questions that were added only for accredited program students. The questions were about the perceived level of advantages they may feel they have in comparison with their peers, due to the accreditation of the program which they enrolled.

Data were collected by means of hard copy questionnaires which were distributed directly to the students during the month of May 2016. The fact is that the "personal-contact" approach

is recommended because researchers have the chance to approach the potential respondents and explain procedures personally for answering and completing the questionnaires in detail. The questionnaires were distributed in university premises and with teaching assistants' support, regarding time for students to fill out the questionnaires.

All students from two EPAS accredited programs, Marketing Management and Financial Management, were given a copy of the questionnaire to fill out. The second group of students consisted of students from other non-accredited, SEBS programs mentioned earlier. Besides collecting over 85% of the data through the "personal-contact" approach, one part of the data was collected simultaneously through the online questionnaire for students of non-accredited majors. Since SEBS has a significant part to play for students enrolled in distance learning programs it was necessary to use this mode of data collection for validity purpose. Moreover, web-based research and questionnaires posted on the SEBS web page helped to entice students who are not present in the classrooms to participate in the research. An additional argument is the fact that many students prefer marketing and financial majors who were forced to apply for distance learning study since those majors are delivered on-site only in the English language.

Quota sampling was used in order to improve the representativeness of the sample. This technique increases the possibility of obtaining a large number of questionnaires quickly and economically and it is also an option in cases when other means are unfeasible because of time and financial constraints (Zikmund & Babin, 2007). After excluding all the questionnaires with incomplete or missing data, a total of 416 questionnaires were retained: 150 from students attending EPAS accredited courses at SEBS and 266 from students attending non-accredited courses at SEBS.

4.4 Methods of analysis

Quantitative data was analyzed using the SPSS, STATA and LISREL software. First, the descriptive statistics which provided a data overview in terms of demographic information, frequency analysis and mean values, was calculated. After that, the reliability and validity of scales was tested and then a hierarchical linear OLS regression was performed to test the hypotheses of the survey. Finally, an independent sample t-test was performed to identify the mean differences between two groups of students; accredited program students (A) and non-accredited program ones (B).

4.5 Empirical analysis and results

A summary of the full descriptive statistics of the items in the questionnaire is presented in Appendix E. All items appear in the full range (both minimums and maximums). Skewness is mostly negative and this kind of situation seems to be more of the rule rather than an isolated case on the obtained sample of 416 individuals. The mostly skewed data is seen in the

following cases: for reputation (professional appearance and academic facilities), ideal location of the institution and also the offering of highly respected programs where skeweness exceeds -1.The next phase was the assessment of the validity and reliability of the measures. Since the model used in this master thesis is developed by Firdaus, the usage of the HEdPPERF model does not fall under explorative factor analysis (EFA) but rather confirmative factor analysis (CFA) as there is no real need to explore the factor structure. However, keeping in mind that, to the initial 6 factors an additional factor/dimension was added, "Accreditation", an exploratory factor analysis was undertaken for each factor separately in order to see if there were any factors or statements that should be removed from any of the dimensions. The extraction method used was the Principal Components Analysis. The results of the exploratory factor analysis are presented in the Appendix G. Factor loadings ranged from 0.626 to 0.901 (λ >0.6), whilst average variances extracted for each factor are higher than 0.5.

The reliability of the concepts in the model was further checked by using the Cronbach's alpha coefficient test. Generally, the reliability coefficient of >0.70 is considered "acceptable" Cronbach (1951); a relatively high internal consistency of all of the seven variables is confirmed. Coefficients range from 0.785 to 0.938, with the latter being for administrative staff are presented in Table 5.

Variable	Code	Cronbach's Alpha	N of Items
Academic staff	HPAA	0.880	8
Reputation	HPR	0.785	5
Program	HPP	0.786	3
Administrative staff	HPNA	0.938	10
Access	HPAC	0.852	6
Understanding	HPU	0.802	3
Accreditation	HPACC	0.881	5

Table 5.Cronbach's Alphas for independent variables

4.6 Results

After testing the reliability and validity of constructs and checking for reliability with the Cronbach's Alpha coefficient, confirmative factor analysis (CFA), using the LISREL program was conducted. All items were included in the CFA, with specified relationships between the reflective items and seven respective dimensions. The goodness of fit indices for CFA[x^2 statistics = 2073.283, df = 798; root mean square error of approximation (RMSEA) = 0.067; standardized root mean square residual (SRMR) = 0.0530; goodnes-of-fit index (GFI) = 0.792; comparative fit index (CFI) = 0.976, non-normed fit index (NNFI) = 0.974, adjusted goodness of fit index (AGFI) = 0.764] show a very good fit of the model.

The next step was testing of the Average Variances Extracted (AVE) and composite reliabilities of the constructs. Here, it is observed that some loadings were not high enough for two items. The first one was a part of dimension Academic Aspects (HPAA1) and is actually the first item in the set - the statement that *Academic staff has the knowledge to answer students' questions related to the course* content that loaded with 0.565 together with a standard error of 0.680. The second one was the item regarding the Program issues which was formed as follows: *The institution has an ideal location* which loaded with 0.376 and standard error of 0.858. So HPAA1 and HPP3 were excluded. Even with these eliminations, there are still enough items left to continue with the analysis of academic staff and program issues.

After excluding these two variables, CFA was repeated. Construct validity and fit improved. Full presentation of the results is enclosed in Appendix I. [x^2 statistics = 1916.104, df = 719, root mean square error of approximation (RMSEA) = 0.0682; standardized root mean square residual (SRMR) = 0.0530; goodness-of-fit index (GFI) = 0.798; comparative fit index (CFI) = 0.976, non-normed fit index (NNFI) = 0.974, adjusted goodness of fit index (AGFI) = 0.769] show an even better fit of the model. In the second run, AVEs are now good together with loadings and composite reliabilities (CRs). Dimensions of academic staff (HPAA) and access (HPAC) have bordering AVEs (equal to 0.5) but are also acceptable and all other AVEs are larger than 0.5. The results for all factors are presented in Table 6.

Variable	Code	Composite Reliability (CR)	AVE
Academic staff	HPAA	0.886	0.495
Reputation	HPR	0.835	0.507
Program	HPP	0.789	0.555
Administrative staff	HPNA	0.939	0.608
Access	HPAC	0.900	0.495
Understanding	HPU	0.817	0.602
Accreditation	HPACC	0.900	0.598

Table 6. CRs and AVEs for independent variables

Table 7. Corr	elation between s	seven independent	variables and	overall quality	y

Code	HPAA	HPR	HPP	HPNA	HPAC	HPU	HPACC	OQ
HPAA	1							
HPR	0.591	1						
HPP	0.545	0.632	1					
HPNA	0.636	0.530	0.542	1				
HPAC	0.629	0.594	0.608	0.663	1			
HPU	0.618	0.578	0.576	0.625	0.671	1		
HPACC	0.448	0.547	0.572	0.432	0.577	0.553	1	
OQ	0.518	0.498	0.506	0.462	0.499	0.464	0.492	1

Note: All correlations are significant at the level of p<0.001

After establishing that the measures were valid and reliable, the analysis was proceeded with, accessing firstly the correlation coefficients between each dimension and overall quality. Correlation coefficients presented in Table 7 show that all of the dimensions are correlating positively and significantly with the overall perceived quality as assumed. The greatest correlation between overall quality and the quality dimensions observed is for the Academic staff (HOAA) with 0.518 and Program issues (HPP) with 0.506 (p<0.01). Also, all dimensions are positively correlated with other dimensions (p<0.01). Especially strong is the positive correlation between dimensions Understanding (HPU) and Access (HPAC) with positive correlation of 0.671(p<0.01).

4.7 Hypothesis testing

After establishing correlations, the Ordinary Least Squares (OLS) regression model was used for testing the hypotheses. In the previous section of the thesis, the conceptual model (Figure 1) was explained and the way the model is created shows the quality of institution services as a dependent variable affected by two different groups of variables. On the one hand, there are control variables and on the other hand, seven variables: academic staff, reputation, program issues, administrative staff, access, understanding and accreditation. In order to weigh in on the effects of these seven variables and differentiate their effect from the control variables, we conducted hierarchical regression analysis and developed two separate models.

Model 1 includes only the controls: planned qualification (PC), sex (S), specialization stream, (STRE), student status (STAT) and study level (NS), whilst the *Model 2* includes all control variables as well as independent variables – the constructs included in the conceptual model: accreditation (HPACC), administrative or non-academic staff (HPNA), reputation (HPR), academic staff (HPAA), program (HPP), understanding (HPU) and access (HPAC). All control variables were categorical and respondents had the opportunity to choose a relevant option. For a planned qualification, students could choose from the following; bachelor degree, master degree and PhD. Status included three categories that the students could choose from: full-time student, full-time self-financing student and distance learning student. In regression, full-time students are observed against self-financing students which also includes distance learning students.

Level of study represents the year the student is currently attending; i.e., whether the student is in the first, second or third year of Bachelor studies (BS) or enrolled in a Master study (MS). Since the MS semester starts later than the BS semester, master students are still more aware and conscious of the service quality of BS courses than those belonging to MS; in that sense, they are very similar to the students from the third year of BS. So in the context of the topic of the thesis – evaluating perception of service quality of undergraduate programs, data collected from students of MS are combined with those collected from third year students of BS in regression analysis. Stream is for the seven streams that were included in the research and students should check the one they attend. However, for the purposes of regression,

streams are presented as two groups: accredited (Marketing Management and Financial Management) and non-accredited (remaining five streams); finally, the sex is for the gender of the respondents.

All possible options are listed in Appendix D, alongside the general coding(used for descriptive analysis and means' testing) and the coding used in regression. The first aim of the analysis was to establish whether there is a significant difference between the explanatory power of two models (assessed with R^2 - coefficient of determination). These results are presented in Table 8.

Change Stati					stics			
Model	\mathbf{R}^2	Adjusted R ²	Root MSE	\mathbf{R}^2	F	df1	df2	Sig. F
				Change	Change			Change
1	0.115	0.102	0.639	0.115	8.93	6	409	0.000
2	0.434	0.416	0.516	0.319	32.66	13	402	0.000

Table 8. Explanatory power of two models assessed by R^2 change

The results for Model 1, which includes only the control variables, are as follows: $R^2 = 0.115$ for Model 1 that includes only the control variables, df = 6, F change = 8.93 (p<0.01). For Model 2, which also includes independent variables, $R^2 = 0.434$. It is noticeable that the R^2 change between the models is 0.319, df = 13, F = 32.66 (p<0.001), in favor of Model 2, which shows that the quality variables did indeed contribute to the model.

After establishing the difference between the two models, regression results together with the hypothesis tests were presented (Table 9). Model 1 contains only control variables and it can be seen that only two of them; level of study (NS) and stream (STRE), are statistically significant. It is noticeable that students attending their second year of study are dissatisfied with regard to students from the first and third year. Looking at the coefficients, it seems that the overall perception of quality decreases as the students advance in their education on SEBS; i.e., as they move from year to year, recorded values for their satisfaction are lower. Students who recently started attending SEBS appear to be the most satisfied ones. Looking at the two stream categories, it is visible from the table that the perceptions of students from non-accredited programs. Sex, student status and planned qualifications were not statistically significant. By adding quality variables (Model 2), the control variables (NS and STAT) remained statistically significant.

Variable	Code	Model 1	Model 2	Н	Hypothesis test
		β (t)	β (t)		
Sex	S	-0.015 ^{NS} (-0.23)	-0.006 ^{NS} (-0.11)		
NS 2	NS2	-0.288** (-3.45)	-0.209** (-3.06)		
NS 3	NS3	-0.381*** (-5.02)	-0.144*** (-2.27)		
Student status	STAT	-0.106 ^{NS} (-0.87)	-0.132 ^{NS} (-1.33)		
Stream (accredited)	STRE	-0.383** (-3.06)	-0.306** (-2.99)		
Planned qualification	PQ	$0.001^{\rm NS}(0.01)$	-0.037 ^{NS} (-0.41)		
Academic staff	HPAA		0.138*** (3.64)	H1	Supported
Reputation	HPR		0.074 (1.92)	H2	Not supported
Program	HPP		0.094** (2.55)	H3	Supported
Administrative staff	HPNA		$0.026^{NS}(0.68)$	H4	Not supported
Access	HPAC		0.039 ^{NS} (0.94)	H5	Not supported
Understanding	HPU		-0.031 ^{NS} (-0.78)	H6	Not supported
Accreditation	HPACC		0.148*** (4.30)	H7	Supported
Number of observations		416	416		
\mathbb{R}^2		0.116	0.434		
F test stat		8.93	23.73		
Prob>F		0.000	0.000		
Skewness/Kurtosis tests for		0.013	0.001		
Normality Prob>chi2		0.015	0.001		
Ramsey RESET test for correct		0.035	0.019		
functional form Prob>chi2		0.055	0.019		
Breusch-Pagan test for		0 571	0.145		
heteroskedasticity Prob>chi2		0.571	0.145		

Table 9. Regression results for Model 1 and Model 2

Notes: Overall quality is dependent variable; H = hypothesis; NS - not significant; * - p<0.1, ** - p<0.05, *** - p<0.001

Model 2 in Table 9 also shows the effects of individual dimensions on overall perceived quality. Besides level of study and stream which remained significant as it was in the Model 1, Academic staff $\beta = 0.138$ (p < 0.001), Program $\beta = 0.094$ (p < 0.05) and Accreditation $\beta = 0.148$ (p < 0.001) turned out to have a significant effect on the Overall Quality of the institution. Administrative staff, Reputation, Access and Understanding turned out to be insignificant for perception of overall quality. These results supported hypotheses H1, H3 and H7whilst no support was found for the remaining four hypotheses (H2, H4, H5 and H6).

In the next step of the analysis, the differences between the two groups of students who were included in the research, students attending EPAS accredited programs (Group A, with Model 3 and Model 4) and students attending non-accredited programs (Group B, with Model 5 and Model 6), were evaluated. As in the previous analysis, Model 3 and Model 5 include only control variables: Planned qualification (PC), Sex (S), Stream (STRE), Student status (STAT) and Study level (NS), whilst Model 4 and Model 6 include all variables, i.e., control variables as well as seven independent variables: Accreditation (HPACC), Administrative or non-academic staff (HPNA), Reputation (HPR), Academic staff (HPAA), Program (HPP), Understanding (HPU) and Access (HPAC). The aim of the analysis was to establish whether

there is a significant difference between explanatory powers of groups present in these two models (assessed with R^2 - coefficient of determination). The results are presented in Table 10.

Crown	Madal	\mathbf{D}^2	A directed \mathbf{P}^2	Doot MSE	Change Statistics				
Group Mode		N	Aujusteu K	KOOU MISE	R ² Change	F Change	df1	df2	Sig. F Change
А	3	0.031	-0.003	0.661	0.031	0.92	5	144	0.468
	4	0.290	0.228	0.580	0.259	3.75	12	137	0.000
В	5	0.119	0.102	0.619	0.119	7.05	5	260	0.000
	6	0.476	0.451	0.484	0.357	12.11	12	253	0.000

Table 10. Explanatory power of two groups of students in two models assessed by \mathbf{R}^2

The measures for Group A in Model 3 are $R^2 = 0.031$, as well as the R^2 change, with df = 144, F = 0.92, p = 0.468 which shows that if we would look only at the impact of control variables on students attending accredited programs, we would not get any significant information since these variables alone do not contribute to the model (they are statistically insignificant). Model 4 has $R^2 = 0.290$, and the R^2 change is 0.259 with df = 137, F = 3.75, p<0.001 and one can see that when including variables of interest for the conceptual model of the study, explanatory power increases. For Group B, Model 5 that assumes only control variables, the results are $R^2 = 0.119$, as well as the R^2 change is 0.119, with df = 260, F = 7.05, p<0.001, whilst Model 6 includes variables of interest and the results are $R^2 = 0.476$; R^2 change 0.357 with df = 253, F = 12.11, p<0.001. This means that for Group B, Model 6 is significantly better than Model 5. In the case of Group B (students from non-accredited courses) full models explain a greater portion of variance, since the percentage is almost twice as high in Group B, explaining 45.1% of overall quality. After establishing differences between the two groups in each model regression results, together with the hypothesis tests are presented in Table 11.

Table 11. Regression for models 3, 4,5 and 6

Variable	Code	Model 3 Group A ACCP – controls only	Model 4 Group A ACCP controls and QD	Model 5 Group B NACCP – controls only	Model 6 Group B NACCP – controls and QD	Н	Hypothesis test
		β (t)	β (t)	β (t)	β (t)		
C	S	-0.009 ^{NS}	0.009 ^{NS}	-0.024 ^{NS}	-0.013 ^{NS}		
Sex		(-0.08)	(0.09)	(-0.29)	(-0.20)		
Lovel of study and Veen	NS2	-0.271 ^{NS}	-0.216 ^{NS}	-0.226**	-0.195**		
Level of study 2nd Year		(-1.88)	(-1.67)	(-2.12)	(-2.28)		
Level of study 3rd Year	NS2	-0.079 ^{NS}	-0.079 ^{NS}	-0.517	-0.156**		
	1100	(-0.53)	(-0.60)	(-5.86)***	(-2.09)		
							table continues

Continuation							
Variable	Code	Model 3 Group A ACCP – controls only	Model 4 Group A ACCP controls and QD	Model 5 Group B NACCP – controls only	Model 6 Group B NACCP – controls and QD	Н	Hypothesis test
		β (t)	β (t)	β (t)	β (t)		
Student status	STAT	-0.069 ^{NS} (-0.25)	-0.100 ^{NS} (-0.40)	-0.151 ^{NS} (-1.12)	-0.162 ^{NS} (-1.52)		
Planned qualification	PQ	0.235 ^{NS} (0.75)	-0.032 ^{NS} (-0.11)	0.021 ^{NS} (0.18)	-0.029 ^{NS} (-0.31)		
Academic staff	HPAA		0.099 ^{NS} (1.32)		0.158*** (3.57)	H1	Partially supported
Reputation	HPR		0.056 ^{NS} (0.69)		0.087* (1.98)	H2	Partially supported
Program	HPP		0.099 ^{NS} (1.33)		0.079 ^{NS} (1.83)	Н3	Not supported
Administrative staff	HPNA		-0.007 ^{NS} (-0.09)		0.050 ^{NS} (1.06)	H4	Not supported
Access	HPAC		-0.002 ^{NS} (0.02)		0.058 ^{NS} (1.20)	Н5	Not supported
Understanding	HPU		-0.055 ^{NS} (-0.08)		-0.039 ^{NS} (-0.75)	H6	Not supported
Accreditation	HPACC		0.169* (2.53)		0.133* (3.24)	H7	Supported
Number of observations		150	150	266	266		
\mathbf{R}^2		0.031	0.290	0.119	0.476		
F test stat		0.92	4.67	7.05	19.16		
Prob>F		0.469	0.000	0.000	0.000		
Skewness/Kurtosis tests for Normality Prob>chi2		0.047	0.049	0.006	0.012		
Ramsey RESET test for con functional form Prob>chi2	rect	0.897	0.013	0.956	0.714		
Breusch-Pagan test for heteroskedasticityProb>chi	2	0.712	0.804	0.127	0.502		

Legend: ACCP - accredited program; NACCP - non-accredited program, QD - quality dimensions

Notes: Overall quality is dependent variable; H = hypothesis; ^{NS} – not significant; * - p<0.1, ** - p<0.05, *** - p<0.001

Table 11 with coefficients for A (accredited) and B (non-accredited) groups show the most interesting results. If we are looking at the predictors of overall quality by groups, for students from non-accredited programs, academic staff, reputation and accreditation will be predictors for the overall quality score with academic staff with 0.158 (p<0.001), accreditation following with 0.133 (p<0.05) and reputation rounding the top 3 reasons with 0.087 (p<0.05). On the other hand, analysis of the results of the coefficients for group A clearly shows that the only significant variable that affects the total quality is actually Accreditation with 0.169 (p< 0.05) which means that the factor affecting whether students from accredited programs perceive overall SEBS quality as satisfactory or not depends on accreditation which presents a relevant predictor. This indicates that accreditation serves as a summary antecedent of quality

perception making it a very important factor in their decision to enroll somewhere. In a way, it helps students form an idea about the quality the organization will offer.

For students from accredited programs, the level of study is not statistically significant but the case is different with students attending non-accredited programs. This indicates that as the students are progressing to higher years of study, they seem to be less satisfied or they perceive that the overall quality is lower. The reason behind this can be that the students start with high expectations and have limited experience at the beginning of their first year and are not able to evaluate all of the aspects of SEBS. Furthermore, as time passes, they will inevitably be exposed to a greater number of academic staff and different programs, some of those they will find to be of low quality which in return will influence their overall perception of the quality of the institution. Out of seven hypotheses, only H7, that observes the importance accreditation has on the perception of SEBS's HE service quality, has been fully supported. H1 and H2 hypothesis are partially supported while H3,H4, H5 and H6 were not supported throughout this research.

When discussing expectations and differences in perceived quality level and its antecedents, which are outlined by Hypothesis 8, even prior to conducting independent-sample t-tests, it can be seen that there are differences between accredited and non-accredited program in terms of the effects of independent variables. To formally test the H8, an independent-sample t-test was performed (results are shown in the Appendix J). It can be seen that the mean values for students who are attending accredited courses are lower than the mean values of students attending the non-accredited courses and this is the case in every dimension. Mean for each dimension is obtained as a mean of all items, i.e., questions in that particular dimension. For HPAA mean is obtained from nine questions where the following six ones were significant: HPAA3, HPAA4, HPAA6, HPAA7, HPAA8 and HPAA9. HPR was composed out of five questions with HPR3, HPR4 and HPR4 being statistically significant. Four items were in HPP construct and only HPP2 is statistically significant. All ten items in the HPNA construct are statistically significant. Five out of six items in the HPAC dimension are statistically significant, with the exception of HPAC2. HPU is statistically significant with all items whilst in the HPACC dimension, differences between groups are statistically significant in the item HPACC3. In Figure 2, it is possible to see the differences in means per dimensions for two observed groups.





Besides giving lower scores for each dimension, students from accredited programs show a lower overall quality perception, lower level of satisfaction and lower loyalty to SEBS. Out of ten questions measuring satisfaction and loyalty, students from accredited programs also showed lower means than their peers on all but one question, "My experience at the School (SEBS) exceeded previous expectations". The consistency of these results indicates that some of the expectations of these students have not been met. However, it is possible to see the differences between these two groups better if we observe an independent sample test where we can test for the differences.

A point that should be kept in mind is that, apart from the main difference between these two groups of students enrolled in accredited and non-accredited programs, all the other dimensions are common. Students are sharing (1) the same premises – in terms of the location and appearance of the school, (2) administrative staff is the same for all students, including working hours, ways of contacting them and the same employees, (3) academic staff is the same since the same professors are teaching on both type of courses, etc. Having said that, based on the test results, it is noticeable that, when it comes to academic staff, there are no significant differences when asked about the knowledge of the teachers to answer the questions and the educational level and professionalism a teacher holds. This comes as no surprise since we are talking about the same individuals. However, when asked about the way teachers treat students, i.e., treating them in a caring way and never being too busy, the results showed that students from accredited programs are more negatively disposed toward their teachers, in comparison with the students from non-accredited programs. Based on just these four questions, so far it seems that the evaluations of the professional credentials of teachers are pretty balanced but that the students who are enrolled in accredited courses expect a more active relationship with their teachers; i.e., they might expect a more collaborative approach where they will get more attention. This can also be connected with the size of the group so, if a student expected that the groups in the accredited courses are considerably smaller, then it might be that, accordingly, they expected a greater level of dedication and attention shifted towards them. Also, some other items measuring the dimension of academic staff indicate that students from accredited courses expressed a higher level of criticism: they evaluated readiness for problem solving, good communication in the classroom, providing feedback and making enough time for appropriate consultation time with lower scores than their peers in non-accredited programs. It seems that students expected a more inclusive and devoted approach by SEBS as an accredited school and which is slightly different than the conventional one. This might be something that was promised to them in the process of acquiring or they created their expectations, based upon the ideas and understanding of the superior quality which an accredited university is supposed to provide.

Out of five items in the Reputation construct, for three items, statistically significant differences between the evaluations of students in both groups were detected: the opinion of respondents that the Institution runs programs with excellent internal quality; that the size of the class is kept at the minimum to allow for personal attention and that the graduates are easily employable. Students attending the accredited courses recorded a lower quality perception than their peers from non-accredited programs. The results are higher for the disagreement with internal quality programs, class size and easy employability of graduates which comes as a great surprise, keeping in mind that the accreditation is the only relevant predictor of quality and consequently, better performances, as well as competitive advantages in a job market. It also plays a crucial role in deciding upon the program and presumably school, so it comes as a surprise that the students from group A(accredited program) are more sceptical than their colleagues about their employability.

The Construct Program offers an area where it is possible, with a statistical significance, to discuss the changes in attitudes and perception levels between the two sample groups. Items regarding the structure of the syllabus and the flexibility of the syllabus explain differences in the greatest effect. This logically connects with the general attitudes towards academic staff and the expectation of students that, due to the fact that they are attending selected courses or maybe due to the fact that their scholarship fee is higher (self-financed students), they will have more say in the lectures. An evaluation of the remaining three items: ideal location, highly reputable programs and a wide range of programs with specialization, show no significant differences between the two groups of students. One might expect that students from group A would tend to have slightly more favorable attitudes and sayings about the high reputation of the school's programs but that was not the case.

In a set of 10 statements regarding the non-academic staff, each item recorded a significant difference between the groups and every time the answer offered by students from accredited programs was less favorable. The full data is in Appendix K but it will be interesting to extract the items where the greatest differences were recorded: offices keep accurate and retrievable records, administrative staff provide caring and individual attention, administrative staff show positive work attitudes towards students, administrative staff do something by a

certain time, if they promised to do so, and finally, administrative staff deal with complaints concerning efficiency and promptness. The fact that on each individual item there are significant negative differences, indicates that the dimension of administrative staff as it is now is not completely satisfactory to students attending accredited programs. Items related to access dimension also registered differences between the groups. Only a statement that the institution and its staff treated students equally and with respect did not register differences. Situations where some students would not be treated with respect would be equal to discrimination and the absence of the same is pretty much a hygienic factor in any environment let alone educational. If we for a moment look at the term "equally" in the sense of the participation and autonomy of students and, if this is not detectable, then this corresponds to the situation that accredited courses are generally attracting more active students who wish to be involved in the educational process but, when they are approached and treated like those on non-accredited courses, this may be displeasing to these students. The most variation is seen on the item HPAC6 and HPAC5. The first one stands for the situation where the Institution and its staff ensure that they are easily contacted by telephone and that the Institution makes students feel secure and confident while they are dealing with the Institution.

Understanding is the dimension that recorded the greatest differences, where students from group A, to a lesser degree, find that the institution encourages and promotes the setting of the Student Union, finds that the institution values' feedback from students, to improve service performance, is significantly less than their peers from non-accredited courses and they do not feel that the institution has a standardized and simple enrolment and administrative procedure to the extent that their counter colleagues do. Five items, regarding the accreditation that were added to the questionnaire, showed that there are no significant differences between groups when they are asked about the increasing of the higher students' mobility, due to accreditation, its influence on programs' quality improvement, or even the role accredited programs, have in confirming the academic superiority, i.e., its high quality and content. It seems that both groups, including the students from non-accredited courses, feel this way. The only item that created a bit of polarity is the one which concerns whether the accredited programs engage academic staff teaching with appropriate qualifications. Here students from accredited courses showed slightly higher standards, (since the same academic staff is teaching both groups), that is slightly less in satisfaction when it comes to qualifications of their lecturers: t(297.792) =-2.494, p=0.05.

These differences lead to the visible lower overall quality with group A: t(306.255) = -5.051, p=0.001. The differences are reflected in both satisfaction and loyalty indicators, so 4 out of 5 satisfaction indicators and also 4 out of 5 loyalty indicators showed differences. The only items that were not visibly different are the delight in the School and its performance and the decision to choose the SEBS once again, if one had the chance to decide again, even though their mean value is not that different, in comparison to other items' means from the same set. If we look at the highest qualifications respondents want to achieve, these results are next:

64.9% of them want to finish their master studies, 31.8% are planning to go on to PhD and 3.3% will stay on the bachelor level. However, if one looks at some of the indicators of loyalty, i.e., the behavior that respondents are planning to employ, then it is possible to see that only 13.9% of respondents say their future contact with SEBS will be very high. About 41% of the school's current students chose the option "high" whilst 36% said "moderate", which is the equivalent of passive clients and where there is a danger that some of these students will not stay with the school but finish their education somewhere else.

Furthermore, approximately only a third of respondents said that they were pleased that they decided to enroll into SEBS while 14% were neutral, i.e., they do not feel comfortable enough to say they are happy with their choice. Additionally, when asked whether SEBS exceeded their initial expectations, 24.5% of respondents were indecisive (neither satisfied nor dissatisfied), whilst 9.3 were dissatisfied. This together gives us more than a third of students on accredited programs who do not feel SEBS exceeded their expectations. Approximately the same percentage of respondents said that if they were to choose a school today, they are neutral or would not choose SEBS. The situation is the same with recommendations and positive words of mouth (hereinafter: WOM) to relatives and friends. The results about student skepticism regarding WOM and recommendation spreading, is very dangerous for SEBS' future on the "HE services market".

5 **DISCUSSION**

5.1. Model performance and result implications

In the context of the research provided for the purpose of this thesis, the HEdPERF model has been applied separately to two groups of students – those who study at non-accredited regular SEBS programs and another group of students studying at EPAS accredited programs. The results of the analyses of collected data in the first group – students of non-accredited programs didn't confirm the impact of all the variables from the original model. Academic staff and reputation are the only HEdPERF variables that have significantly positive impact upon the students' perceptions of the SEBS service quality. Accreditation, as an additional dimension added for the purpose of this research, is also significant. When it comes to the other group, students of EPAS accredited programs, none of the original HEdPERF model's dimensions turn out to be significant. The only relevant dimension that positively influences students' perception of service quality is accreditation.

It implies that, in comparison with the original model and other service quality models applied in HE, the results of research on the students' perception of the quality of higher education services at SEBS showed different results. When applied in the context of HE services, SERVQUAL and SERVPERF models recognized reliability and empathy as relevant dimensions of quality, consistent with the structure of the model. This implies HEI's ability to provide services according to previous promises delivered to the potential students and readiness to help and support students during the study.

The HEdPERF model (Firdaus, 2014) is specifically created for HE services with six variables measuring different dimensions of HEI services and has proved itself to be the most reliable one and also having the highest explanatory power. The combined HEdPERF-SERVPERF model also tested by Firdaus (2006) identified four variables which have a significantly positive impact on service quality perception, non-academic and academic aspects, as well as reliability and empathy; it has less explanatory power than HEdPERF.

Obviously, results of the research provided between SEBS students are significantly different since only two of the HEdPERF dimensions are confirmed as significantly relevant for the students of non-accredited programs. On the other side, students of accredited programs do not consider as relevant any of the dimensions of the original model. For them, accreditation is the only factor relevant for quality perception.

As seen from the model that was performed on two samples of students, the main finding is that the students attending the non-accredited courses include academic staff, program issues and accreditation as predictors of overall quality, whilst students from accredited programs base their overall perceived quality on only one factor: accreditation. All other antecedents (academic staff, non-academic staff, reputation etc.) do not affect the overall quality perceptions for this group of students. It seems that the accreditation serves as a summary construct for all quality dimensions and individual factors do not override it. So, the main conclusion that can be made from the analysis that was done in the thesis is the existence of differences between students from accredited and non-accredited programs which goes in favor of the research question and simultaneously supports the H8 hypothesis.

As seen from the independent sample t-tests, students from accredited programs generally have a more negative viewpoint on total quality but also on all the dimensions individually. The main issues where their negative attitudes are expressed could be grouped into two elements: participation and attention. It seems that the students who enrolled into accredited programs feel that they themselves should participate more in the lecturing process or, at least, that is the impression they have upon enrolling. They also think syllabuses are not flexible enough. On the other hand, they would appreciate more regular feedback about their progress, as well as a dedicated individual approach from the teachers. They also feel there is room for improvement when it comes to professors' individual approaches to each student, in a sense of caring for them and devoting more time. Additionally, students from accredited programs had similar attitudes, about the knowledge and professionalism of teachers, to their peers from non-accredited programs. However, the result was lower for the accredited group when they were asked if the school hired the academic staff with appropriate qualifications. Overall, it seems that the expectations of students from accredited programs are higher and, as they transfer from year to year and their expectations are not being met, their dissatisfaction grows.

There could be several reasons for these findings. Firstly, the format of accredited programs, due to their general idea and the way they are presented (number of projects and group works,

teaching visits etc.) but also the active fields (Marketing Management and Financial Management), are prone to attracting students with certain psychological traits: outgoing, active, involved, etc. These specific traits may impact upon the general perceptions and expectations of students. The second issue is related to the idea about future professional development and professors' attitudes regarding skills that students from accredited programs should develop. Unfortunately, the same professors are not ready to devote enough to the mission of "student support" and students of the second and third year of study become aware of this inconsistency. When that is the case, this could lead to a service quality gap.

Particularly interesting are the results regarding easier employability of the graduates of the accredited programs. Even though they are attending accredited programs, they are more skeptical about their first job. However, they do feel more confident regarding the future of their professional development due to the fact that they will graduate from an accredited program: 31.1% of respondents said they completely agree with that statement while 51.7% agreed, i.e., gave it a score of4 on 5-point Likert scale. Furthermore, respondents think that their background in accredited studies will make them superior to other students who completed non-accredited studies. Even though we have the same percentage of the respondents who completely agree with the statement, 31.1% some of those who agree with the previous statement redistributed to the neutral ones (score3): 44.4% of respondents gave a score of 4 on the Likert scale and 18.5% gave a score of 3.

It might also be assumed that part of this skepticism occurs from the awareness of the situation in the country and high rates of unemployment or that it can be connected with the preferred place of employment. Almost half, i.e.,46.4% of students from accredited programs, expect, upon graduation, to work in international companies or daughters of international companies, and 23.2% in international institutions, whereas these percentages are 21.1% for both options with students from non-accredited programs. In the case of the latter group of students, an option of finding a job in a regional or domestic company is placed first with 39.8% of total responses. Non-academic staff seemed to be the quality dimension factor which both groups of student evaluated with low scores but this was expressed more by students from the accredited programs, again pertaining to the areas of attention and positive work attitude.

Based on these results, some managerial implications for SEBS might be suggested. Some areas of improvement include:

- syllabus creation for accredited programs include new and up-to date content and enable the syllabus to respond to the time and conditions we live in;
- empowerment of students by including them in the decision-making process on minor issues, e.g., let them choose which out of three case studies the group will work on;
- reshape the form of consultations to use them in the form of small group meetings where a professor will reach out to the students and provide feedback; therefore, tearing down the

barrier and, at the same time, open space for possible questions and fill this need for an individual approach (professor calls a group of students to come during consultation time for a discussion, gives them suggestions as to what they can do better, recommend some additional reading etc.)

However, far more important than these tasks are the crucial areas that SEBS has to focus on. First and foremost, students that are enrolling for accredited courses use the accreditation label as the sole factor influencing their overall quality perception of the SEBS. At the same time, the same group of students expresses a higher level of criticism regarding all quality dimensions, as well as regarding overall quality, and shows reservations when it comes to employability. Perceptions regarding the quality of academic staff and program elements are not on a satisfactory level so possible adaptations of the curriculums of these programs might be reconsidered. Leaving the format of teaching which is used in non-accredited programs and embarking on a different collaborative approach where students can propose and take active part, not just in completing activities but also in creating activities which may lead to improvements in quality assessments. A small group size, that is typical for these programs, facilitates this approach.

A more in-depth look into the way that the administrative staff is working with students should be taken. The greatest complaints were not regarding professionalism, in the sense that employees are not familiar with the procedures. Quite the opposite; work attitude, attention and in general, behavior towards students, from the process of enrollment until the finalization of studies were evaluated as not satisfactory. Additionally, maybe a short survey could be undertaken on just the topic of the administrative staff, to see whether the prevailing reason for dissatisfaction is waiting time, strict procedures and unwillingness to meet the student's request and help him/her, a lack of an empathetic approach or some other issues.

Students also recognized the nonexistence of the program of internal quality assessment, despite the fact that SEBS regularly organizes surveys about students' perceptions of the courses, professors and exam criteria. The internal quality measurement is a necessity but its importance rises even more if we have quality-conscious students because, then, the lack of quality measurements can potentially trigger some negative reactions and create dissatisfaction.

Having in mind the theoretical framework presented in the thesis, it is extremely important to meet and exceed the expectations of students. This is particularly important for potential students to whom SEBS markets itself as one amongst 5% of the best schools, relying upon image, reputation and accreditations. One of the goals of the thesis was to establish whether accreditation could be a source of competitive advantage over other public and private HEIs and the answer is not as straightforward as anticipated. Accreditation makes SEBS appear attractive and a significant number of students attending accredited programs apply to SEBS primarily because of the accreditation. Results indicate that accreditation is an antecedent of

service quality and students who are planning to attend accredited programs are also expecting a high level of quality. So, the difference in the perceived quality levels and the lower scores of students from accredited programs can be attributed to the higher expectations they came with. Results show that the expected level of quality is not entirely met since only a third of respondents said they are pleased that they enrolled to SEBS and furthermore, one third of respondents said they probably wouldn't choose SEBS if they were to choose HEI today. SEBS definitely has a differential advantage and, at the moment, it has an edge over the competitors who target similar student groups (excluding the segment of students who mostly value faster and lower effort private schools). However, since competitive advantage should be something that is fairly permanent and reassuring and more desirable to customers, there are some limitations for approving that statement, since it seems that the execution of services doesn't fulfill customers' expectations. Student attrition can also possibly be one of the problems for School if it doesn't tackle the issue. SEBS invested substantial funds to obtain and maintain its accreditations and if it intends to continue to pull countries most prospective students or to be perceived as a high quality HEI, there is a clear need for improving the quality of services.

5.2. Limitations and further research

Although the research has reached its aims, there are some limitations that can serve as suggestions for further research:

- The number of students enrolled in EPAS accredited programs is substantially lower than the number of students enrolled in non-accredited programs, which makes these two populations different in size. It was taken into consideration that a representative sample of both groups is included but this means that the great majority of all students attending EPAS accredited programs were included in the research and only some students from non-accredited programs (because of a significantly higher number of those students).
- The respondents may not be fully honest in providing their feedback since they are still attending SEBS which might partly alter the way they answered the questions. Alongside that, self-reported data may be one of the limits, since respondents' answers were taken at face value, i.e., as they are. However, students might have some unintentional biases whilst filling in the questionnaire: selective memory, attribution and exaggeration.
- The assumptions of normality were disrupted so the obtained regression results should be interpreted with caution.
- A possible limitation can be that students attending EPAS accredited programs filled out the questionnaire in English whilst the students attending non-accredited programs received questionnaires in Bosnian. Even though the translation was completed carefully, this fact might cause some differences and inconsistencies.

• A limitation of this thesis is the lack of a structural model because only confirmatory analysis was done. Including the structural model could give a better and more reliable insight.

A suggestion for further research would be to check the attitudes and satisfaction levels of students at the time of enrollment and then, repeat the questionnaire after a year or two, to see the effects. In the case of this research, there was no pre-existing data, prior to this research, about the expectations students came with, so only the answers about the fulfillment of students' expectations after semesters can be collected, which can also be affected by some unintentional biases. It would be interesting to get information about the effects of accreditation in student employability so a follow-up research of students, who took part in research but found a job in the meantime, could show if there are differences in the time and difficulty of finding a first job.

CONCLUSION

The landscape of higher education has changed substantially in the last decades but the goals of higher education institutions remain greatly as they were: to provide high quality education that will give a good prerequisite to their students for a successful professional life, as well as to provide the state and society with professionals that will work on maintaining and improving different spheres of life. However, many changes in the environment also forced higher education institutions to act in a more corporate-like way and to provide visible ways in which they are superior to their competitors to win students. Keeping in mind the great subjectivity when assessing the quality of the important decisions in life, accreditation imposed itself as the most universal way of assessing the quality of HEIs. In the thesis, a distinction between the USA and European accreditations was made, as well as distinctions between the institution and program accreditations.

In B&H in the past six to eight years, the number of HEIs has increased greatly and more and more students are opting for private schools. At the same time, with the B&H population maturing, which is a situation present in other European countries as well, it becomes harder for schools to attract students. On the other hand, SEBS holds one national and two international accreditations that it received in the last few years and it was important for the Institution to find out how important as a factor "accreditation" was to students when they enroll at the university and also does the accreditation provide the necessary competitive advantage for SEBS.

One of the objectives was to present a comprehensive analysis of the development, scope and character of the EPAS accreditation on SEBS which was presented in the theoretical part alongside the description of the accreditation process and agencies in B&H. The time-line of the phases in achieving the accreditations is presented together with the objectives of the
programs and evaluation activities. The focus was on two EPAS accredited programs, Financial Management and Marketing Management. A strong relationship and interrelation between quality, satisfaction and loyalty is discussed in-depth since student satisfaction has a crucial role for the survival and development of HEIs.

In order to measure the effect of different dimensions that are affecting the student's perception of quality, the HEdPERF model was comprised out of the following dimensions: Non-academic aspects, Academic staff, Reputation, Program issue, Understanding and Access together with additional add-on dimension for purpose of this thesis - Accreditation. Eight hypotheses were developed, each targeted to one dimension, with the presumption that it positively affects the quality of service SEBS provides and the eight hypotheses that assume there are no differences between students attending accredited and non-accredited programs.

Upon establishing the difference between the effect of control variables and the HEdPERF dimension, regression results supported the four hypotheses; that the perception of academic staff, reputation, program and accreditation positively affect the perception of the entire institution (SEBS). A further distinction between students from accredited and non-accredited programs was made; the results indicated that the only significant factor for students from accredited programs was accreditation whilst, in the case of students from non-accredited programs, overall quality was affected by the following factors: academic staff, reputation, program and accreditation. Hypothesis 7, which states that the perception of Accreditation positively affects the institution quality was the only one that was fully supported whilst hypothesis concerning academic staff, reputation and program were partially supported. The remaining three hypotheses related to dimension included in the HEDPERF model were not supported. The comparison of quality evaluation by students enrolled in accredited programs and those enrolled in non-accredited programs showed that students from accredited programs gave lower quality scores for each dimension, recorded lower levels of satisfaction, lower overall quality and lower loyalty to SEBS, indicating an existence of differences in quality perceptions between the two groups of students.

For the case of SEBS, international accreditation has a strong appeal for students and it is singled out as the attribute that most the quality of the institution. When it comes to students attending two EPAS accredited programs, accreditation is the most important factor in their assessment of the quality of the institution. At the same time, this group of students is less satisfied and is becoming more so with every year they attend the School. The differences are reflected in both satisfaction and loyalty indicators, so 4 out of 5 for satisfaction and also 4 out of 5loyalty indicators showed differences. The only items that were not visibly different were the "delightfulness" about the School and its performance and the decision to choose the SEBS once again, if one had to decide again, even though their mean value is not that different in comparison to other item means from the same set. The reason can be that the students formed too high expectations or thought that accredited programs are something different to that which they had opportunity to experience or that SEBS currently does not

deliver the level of quality that its customers expect. Considering a large number of SEBS students who took part in the research for the purpose of this master thesis, SEBS should look into the findings and address the issues that are underlined in this thesis. It seems that SEBS sees its accreditations as a way of differentiating itself and as a means of attracting students so it is of utmost importance that the quality delivered is aligned to student expectations.

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APPENDIXES

TABLE OF APENDIXES

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Appendix A: List of abbreviations

AACSB - Association to Advance Collegiate Schools of Business AGFI - Adjusted goodness of fit index AMBA - The Association of MBAs AQA - Agency for Quality Assurance and Accreditation Austria AVE - Average Variances Extracted **BAB** - Business Advisory Board B&H - Bosnia and Herzegovina CFA - Confirmative Factor Analysis CFI - Comparative fit index CR - Composite reliabilities EACEA - Education, Audiovisual and Culture Executive Agency EFA - Explorative factor analysis EFMD - European Foundation for Management Development ENQA - European Association for Quality Assurance in Higher Education EOQ - European organization for quality ESG - The Standards and guidelines for quality assurance in the European Higher Education Area EP - Evaluation Performance (quality model) **EPAS - EFMD Programme Accreditation System** EQUIS - EFMD Quality Improvement System **EU-** European Union FB&H - Federation of Bosnia and Herzegovina FM - Financial Management GFI - Goodnes-of-fit index HE - Higher Education HEA - Agency for development of higher education and assurance quality HEAA - Higher Education Accreditation Agency HEI - Higher Education Institution HEdPERF - Higher Education PERFormance Model HETQMEX - Higher education total quality model excellence HiEdQual - High Education Quality (model for higher education services quality measurement) HRD - Human Research Development **IPA - Importance Performance Analysis** ISO - International Organization for standardization MBA - Master of Business Administration MM - Marketing Management NFI - Non-normed fit index

NQ - Normative quality (model)

RMSEA - Root mean square error of approximation

RS - Republic Srpska

RS HEAA - Higher education accreditation agency of Republic Srpska

SEBS - School of Economics and Business in Sarajevo

SEE - Southeast Europe

SERVPERF - Service performances model

SERVQUAL - Service quality model

SHEII - Strengthening Higher Education in B&H (Project of)

SRMR - Standardized root mean square residual

TQM - Total quality management

UK - United Kingdom

USA - United States of America

Appendix B: Internal and external standards for quality assurance in B&H

Internal standards for quality assurance include standards about: (Standards and Guidelines for Quality Assurance in Higher Education in Bosnia and Herzegovina, 2007):

- Clearly defined quality assurance policy and procedures published and available to all stakeholders and derived from institution's vision, mission and strategy
- Clearly stated objectives of the program, documented evidence of the program's objective meeting and also procedure for correcting possible deficiencies and program improvements
- Transparent procedures for the assessment of students' work which should be consistently applied across the institution
- Criteria for ensuring competent teaching staff and procedure for monitoring and evaluating their effectiveness
- Procedures for periodical review of efficiency in the premises, equipment and facilities which are using for academic and non-academic activities
- Mechanisms for collecting, analyzing and using information relevant for an efficient management of study programs and they publishing.

Standards for internal service quality assurance present a starting point for **external quality assurance** processes and consequently all procedures for internal standards implementation should be open for periodical evaluation conducted by external agencies and bodies. External evaluation for quality assurance implies

- A review of the effectiveness of the internal quality assurance procedures and validation of degree programs
- The process, structured in four phases self-review report, site visit, published evaluation report and follow-up
- Publishing evaluation reports and make them available to institution's stakeholders
- Continuous follow-up procedures for quality assurance processes based on commissions' recommendations
- Periodical evaluation of external and internal quality assurance and study programs
- Formally recognized and also independent institutions and bodies responsible for external quality assurance
- Institutions authorization and recognition accepted in European Higher Education Area and also autonomy from the local authorities, universities and other stakeholders.

Appendix C: Questionnaire

QUESTIONNAIRE

This questionnaire is conducted for the purpose of Master's thesis that is focused on higher education quality. Your participation is very important since you are the most important and the most authorized to evaluate academic and supporting services at your faculty.

Thank you very much for the effort and readiness to participate in the research

All responses will be kept confidential. Your co-operation in providing this information will be greatly appreciated. There is no right or wrong answer, just your personal opinion. Please circle the response.

Section A

The following personal information is necessary for validation of the questionnaire.

- A1 Gender
- (1) Female (2) Male

A2 Level of study

a) Undergraduate lev	vel b) Master level	c) Doctoral level

- 1^{st} 2^{nd} 3^{rd} 1^{st} 2^{nd} 1^{st} 2^{nd} 3^{rd}
- A3 <u>Student status</u>
- (1) Full-time (2) Part-time (3) Distance Learning
- A4 Program Major
- (1) Marketing Management (2) Financial Management
- (3) Management information systems (4) Management and Organization
- (5) Accounting (6) Economics (7) Others (please indicate): _____

A5 <u>Highest qualification planned</u>

a) Bachelor degree b) Master's degree c) PhD

Section B

This section is related to certain aspects of the service that you experienced in your Faculty. For each of the following statements, please circle the number which best reflects your opinion of such service.

Likert scale meaning	Completely disagree	Disagree	<u>Neutral</u>	Agree	Completely agree
Likert scale numbers (1-5)	1	2	3	4	5

Academic aspects - Academic staff

	Academic staff	Compl.	Disagr.	Neutral	Agree	Compl.
		disagr.				agree
		1	2	3	4	5
B1	have the knowledge to answer my questions relating to the course content	1	2	3	4	5
B2	are highly educated and experience in their respective field	1	2	3	4	5
В3	deal with me in a caring and courteous manner	1	2	3	4	5
B4	are <i>never</i> too busy to respond to my request for assistance	1	2	3	4	5
B5	are prepared to help me in solving the problem if I have it	1	2	3	4	5
B6	show positive attitude towards students	1	2	3	4	5
B7	communicate well in the classroom	1	2	3	4	5
B8	provide feedback about my progress	1	2	3	4	5
B9	allocate sufficient and convenient time for consultation	1	2	3	4	5

Reputation

	The institution	<u>Compl.</u> disagr.	<u>Disagr.</u>	<u>Neutral</u>	<u>Agree</u>	<u>Compl.</u> <u>agree</u>
		1	2	3	4	5
B10	has a professional appearance	1	2	3	4	5
B11	has adequate and necessary academic facilities	1	2	3	4	5
B12	runs excellent internal quality programs	1	2	3	4	5
B13	keeps class size at the minimum to allow personal attention	1	2	3	4	5

B14 graduates are eas	sily employable	1	2	3	4	5
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Program issues

	The institution	Compl.	Disagr.	Neutral	Agree	<u>Compl.</u>
		<u>disagr.</u>				agree
		1	2	3	4	5
B15	offers a wide range of programs with various specializations	1	2	3	4	5
B16	offers programs with flexible syllabus and structure	1	2	3	4	5
B17	has an ideal location	1	2	3	4	5
B18	offers highly reputable programs	1	2	3	4	5

Non-academic aspects – Administrative issues

	Administrative staff	Compl.	Disagr.	Neutral	Agree	Compl.
		<u>disagr.</u>				<u>agree</u>
		1	2	3	4	5
B19	show a sincere interest in solving the problem if I am faced with it	1	2	3	4	5
B20	provide caring and individual attention	1	2	3	4	5
B21	deal with complaints efficiently and promptly	1	2	3	4	5
B22	are always ready to respond to a request for assistance	1	2	3	4	5
B23	and offices keep accurate and retrievable records	1	2	3	4	5
B24	do something by a certain time if they promised to do that	1	2	3	4	5
B25	show positive work attitude towards students	1	2	3	4	5
B26	communicate well with students	1	2	3	4	5
B27	have good knowledge of the school procedures	1	2	3	4	5
B28	are available and the opening hours of administrative offices are personally convenient for me	1	2	3	4	5

Access

	The institution	Compl.	Disagr.	<u>Neutral</u>	Agree	<u>Compl.</u>
		<u>disagr.</u>				<u>agree</u>
		1	2	3	4	5
	provides services within	1	2	3	4	5
B29	reasonable/expected time frame	1	2	5	-	5
	and its staff treat students equally and with	1	2	3	4	5
B30	respect	1	2	5	4	5
	gives students fair amount of freedom for	1	2	3	4	5
B31	participating in school processes	1	2	5	-	5
B32	and the staff respect my confidentiality when I disclosed information to them	1	2	3	4	5
B33	and the staff ensure that they are easily contacted by telephone	1	2	3	4	5
B34	makes me feel secure and confident while dealing with this institution	1	2	3	4	5

Understanding

	The institution	Compl.	Disagr.	Neutral	Agree	Compl.
		<u>disagr.</u>				agree
		1	2	3	4	5
	encourages and promotes the setting up of					
B35	Students Union	1	2	3	4	5
	values feedback from students to improve					
B36	service performance	1	2	3	4	5
	has a standardized and simple enrolment					
B37	and administrative procedures	1	2	3	4	5

Accreditation

	Accreditation	Compl.	Disagr.	Neutral	Agree	Compl.
		<u>disagr.</u>				<u>agree</u>
		1	2	3	4	5
	Accredited programs increase opportunities for	1	2	3	4	5
B38	higher students' mobility	1	2	5	4	5
	Accreditation influences programs' quality	1	2	2	4	5
B39	improvement	1	2	5	4	5
	Accredited programs engage academic staff	1	2	2	4	5
B40	teaching with appropriate qualifications	1	2	5	4	5
	Administrative support (procedures) in the					
	accredited programs implementation is according	1	2	3	4	5
B41	to defined standards					
B42	Accredited programs confirm academic programs	1	2	3	4	5
D42	superiority (high quality of programs and	1	2	5	4	5

content)			

Section C – Overall Quality, Satisfaction and Recommendation

C1 The overall quality of the institutions services is

1	2			
1	2	3	4	5
Very poor	Poor	Average	Good	Excellent

C2 I'm satisfied for studying at SEBS

1	2	3	4	5
Complet. disag.	Disagree	Neutral	Agree	Completely agree

C3 I'm pleased that I decided to enrolle at the SEBS

1	2	3	4	5
Complet. disag.	Disagree	Neutral	Agree	Completely agree

C4 I'm delighted about the School and its performances

1	2	3	4	5
Complet. disagr.	Disagree	Neutral	Agree	Completely agree

C5 My experiences at the School exceeded previous expectations

1	2	3	4	5
Very dissatisfied	Dissatisfied	Nor dissatisfied or	Satisfied	Very satisfied
		satisfied		

C5 It gives me a sense of pride that I have decided to enroll at SEBS

1	2	3	4	5
Complet. disagr.	Disagree	Neutral	Agree	Completely agree

C6 My future contacts intention with the institution on future occasions will be

1	2	3	4	5
No intentions for	Low	Moderate	High	Very high
contact				

C7 If I had to decide again I would choose the School/Faculty again

1	2	3	4	5
<u>Compl. disagr.</u>	<u>Disagr.</u>	<u>Neutral</u>	Agree	Completely agree

C8 I will recommend the SEBS to friends and relatives

1	2	3	4	5
Compl. disagr.	<u>Disagr.</u>	<u>Neutral</u>	Agree	Completely agree

C9 I will speak highly of the SEBS

1	2	3	4	5
Compl. disagr.	Disagr.	Neutral	Agree	Completely agree

C11 I will advise my friends and colleagues to enroll in this institution

1	2	3	4	5
Compl. disagr.	Disagr.	Neutral	Agree	Completely agree

Section D - Expectation regarding employability

D1 After graduation I expect to work in:

a) international company/daughter of international company

b) international institution

c) regional company/domestic company

d) family business

D2 I expect to find first job/employment in my field (one I am studying) in a period shorter than

a) 6 months b) 12 months c) 2 years d) 3 years e) I do not expect to find job in my field

D3 I feel more confident regarding the future of my professional development due to the fact that I will graduate from an accredited program

1	2	3	4	5
Completely	Disagree	Neutral	Agree	Completely agree
disagree				

D4 I think that my background in accredited studies will make me superior to other students who finished non-accredited studies

1	2	3	4	5
Completely	Disagree	Neutral	Agree	Completely agree
disagree				

Appendix D: SPSS codes for the items

Dimension	Code	Code used in regression
Demographics		regression
Gender	S	S
Male	0	0
Female	1	1
Level of study	NS	NS
	1.0	NS11 for 1 st
1 st vear (Bachelor)	1	vear students.
	-	otherwise 0
		NS21 for 2 nd
2 nd vear (Bachelor)	2	vear students.
		otherwise 0
3 rd year (Bachelor)	3	NS3 (0)
4 th year (Master)	4	NS4 (0)
5 th year (Master)	5	NS5 (0)
Student status	STAT	STAT
Full time students	1	0
Full time self-financing students	2	0
Distance learning	3	1
Program major	STREAM	STREAM
Marketing Management	1	1
Marketing of Informational Systems	2	0
Financial Management	3	1
Management and Organization	4	0
Accounting	5	0
Economy	6	0
Banking	7	0
Highest qualification planned	PQ	PQ
Bachelor	1	1
Master	2	0
PhD	3	0
Academic aspects		
Academic staff has the knowledge to answer my questions	ΗΡΑΑ1	ΗΡΛΛ1
relating to the course content	III AAI	
Academic staff are highly educated and experience in their	ΗΡΑΑ2	ΗΡΑΑ2
respective field	111 / 11 / 12	1117112
Academic staff deals with me in a caring and courteous	НРААЗ	HPAA3
manner		
Academic staff is never too busy to respond to my request for	HPAA4	HPAA4
Assistance		
Academic starr is prepared to help me in solving the problems	HPAA5	HPAA5
Academic staff shows positive attitude towards students	НРААб	НРААб
Academic staff communicate well in the classroom	HPAA7	HPAA7

Table: Codes for the items for the analysis in SPSS program

Academic staff provides feedback about my progress	HPAA8	HPAA8
Academic staff allocates sufficient and convenient time for	μρλλο	ΗΡΛΛΟ
consultations		
Reputation		
The institution has a professional appearance	HPR1	HPR1
The institution has adequate and necessary academic facilities	HPR2	HPR2
The institution runs excellent internal quality programs	HPR3	HPR3
The institution kept class size at the minimum to allow personal attention	HPR4	HPR4
The institution graduates are easily employable	HPR 5	HPR 5
Program related issues	III K5	
The institution offers a wide range of programs with various		
specializations	HPP1	HPP1
The institution offers programs with flexible syllabus and		
structure	HPP2	HPP2
The institution has an ideal location	HPP3	HPP3
The institution offers highly reputable programs	HPP4	HPP4
Non-academic aspects	11111	
Administrative staff shows a sincere interest in solving the		
problem if I face it	HPNA1	HPNA1
Administrative staff provides caring and individual attention	HPNA2	HPNA2
Administrative staff deals complaints with efficiency and		
promptly	HPNA3	HPNA3
Administrative staff is always ready to respond to a request		
for assistance	HPNA4	HPNA4
Administrative staff and offices keep accurate and retrievable		LIDNA 5
records	IIFNAJ	IIFNAJ
Administrative staff does something by a certain time if they	HDNA6	HPNA6
promised to do so	III NAU	III NAU
Administrative staff shows positive work attitude towards	ΗΡΝΔ7	ΗΡΝΔ7
students		
Administrative staff communicates well with students	HPNA8	HPNA8
Administrative staff has good knowledge of the school	HPN A 9	HPNA9
procedures		mmy
Administrative staff is available and the opening hours of	HPNA10	HPNA10
administrative offices are convenient for me personally		
Access		
The institution provides services within reasonable/expected	HPAC1	HPAC1
The institution and its staff treats students equally and with	HPAC2	HPAC2
The institution give students fair amount of freedom for		
participating in school processes	HPAC3	HPAC3
The institution and the staff respect my confidentiality when I disclose information to them	HPAC4	HPAC4
The institution and the staff ansura that they are easily		
contacted by telephone	HPAC5	HPAC5
The institution makes me feel secure and confident while dealing with this institution	HPAC6	HPAC6

Understanding		
The institution encourages and promotes the setting up of the		LIDI 1
Students Union	HPUI	HPUI
The institution values feedback from students to improve		
service performance	HPU2	HPU2
The institution has a standardized and simple enrollment and		
administrative procedures	HPU3	HPU3
Accreditation		
Accredited programs increase opportunities for higher student		
mobility?	HPACCI	HPACCI
Accreditation influences on programs quality improvements	HPACC2	HPACC2
Accredited programs engage academic staff for teaching with		
appropriate qualifications	HPACC3	HPACC3
Administrative support (procedures) in the accredited		
programs implementation is according to defined standards	HPACC4	HPACC4
Accredited programs confirm academic programs superiority		
(high quality of programs and content)	HPACC5	HPACC5
(high quality of programs and content)		
The overall quality of the institution services is	00	00
Satisfaction	υų	υų
Lam satisfied for Lam studying at SERS	§ 1	§ 1
I am plaged that I decided to aproll at SEPS	\$1 \$2	<u> </u>
I all pleased that I decided to elifoli at SEBS	<u>52</u>	<u>S2</u>
1 am deligned about the School (SEBS) and its performances	30	33
My experience at the School (SEBS) exceeded previous	S 4	S4
It gives me a sense of pride that I have decided to enroll at	S 5	S5
SEBS		
Loyalty Ma fatana and at intention with the institution (SEDS) or		
My future contact intention with the institution (SEBS) on	L1	L1
further occasions will be		
If I had to decide once again I would choose the School	L2	L2
(SEBS) again		
I will recommend SEBS to friends and relatives	L3	L3
I will speak highly about the SEBS	L4	L4
I will advise my friends and colleagues to enroll in this	L5	L5
institution	20	20
Job/employment expectations		
After graduation I expect to work in:	JEXP1	JEXP1
I expect to find first job/employment in my field (the one I am	IEXP2	IEXP2
studying) in a period shorter than:	JL/11 2	JL 2 XI 2
Credentials/Confidence in job prospects due to		
accreditation		
I feel more confident regarding the future of my professional		
development due to the fact that I will graduate from an	CRE1	CRE1
accredited program		
I think that my background in accredited studies will make		
me superior to other students who finished non-accredited	CRE2	CRE2
studies		

Code Min Max Mean Std. Deviation Skewness (Std. error) Kurtosis (Std. Error) PQ 1.0 3.0 2.09 .5124 .151 (120) .662 (239) HPAA1 1.0 5.0 4.262 .6630 .647 (120) .919 (239) HPAA3 1.0 5.0 3.808 .9244 547 (120) 137 (239) HPAA4 1.0 5.0 3.904 8645 450 (120) 242 (239) HPAA5 1.0 5.0 3.916 8809 621 (120) 292 (239) HPAA6 1.0 5.0 3.940 8819 654 (120) 162 (239) HPAA8 1.0 5.0 3.940 9588 654 (120) 125 (239) HPAA9 1.0 5.0 3.940 9588 654 (120) 126 (239) HPRA 1.0 5.0 3.726 1.0985 591 (120) 337 (239) HPR1 1.0 5.0 3.726 1.0984 200 (1	Table:Descriptive statistics for the whole sample						
PQ 1.0 3.0 2.099 5124 .151 (.120) .642 (.239) HPAA1 1.0 5.0 4.262 .6630 647 (.120) .919 (.239) HPAA2 2.0 5.0 3.808 .9244 753 (.120) 137 (.239) HPAA3 1.0 5.0 3.904 .8645 450 (.120) 244 (.239) HPAA4 1.0 5.0 3.916 .8809 621 (.120) 222 (.239) HPAA6 1.0 5.0 3.916 .8809 621 (.120) 125 (.239) HPAA7 1.0 5.0 3.940 .9588 656 (.120) 162 (.239) HPAA9 1.0 5.0 4.401 7111 1406 (.120) 883 (.239) HPA3 1.0 5.0 4.322 7712 1069 (.120) 387 (.239) HPR3 1.0 5.0 3.726 1.0985 591 (.120) 387 (.239) HPR4 1.0 5.0 3.726 1.0986 591 (.120) <th>Code</th> <th>Min</th> <th>Max</th> <th>Mean</th> <th>Std. Deviation</th> <th>Skewness (Std. error)</th> <th>Kurtosis (Std. Error)</th>	Code	Min	Max	Mean	Std. Deviation	Skewness (Std. error)	Kurtosis (Std. Error)
HPAA1 1.0 5.0 4.262	PQ	1.0	3.0	2.099	.5124	.151 (.120)	.642 (.239)
HPAA2 2.0 5.0 4.315 .7041 738 (.120) 106 (.239) HPAA3 1.0 5.0 3.808 9244 547 (.120) 137 (.239) HPAA4 1.0 5.0 3.904 8645 456 (.120) 244 (.239) HPAA5 1.0 5.0 3.916 8809 621 (.120) 292 (.239) HPAA6 1.0 5.0 3.685 1.0752 656 (.120) 169 (.239) HPAA8 1.0 5.0 3.940 9588 654 (.120) 122 (.239) HPAA9 1.0 5.0 4.401 7111 1406 (.120) 838 (.239) HPR2 2.0 5.0 4.322 712 1069 (.120) 638 (.239) HPR3 1.0 5.0 3.839 1.1268 501 (.120) 387 (.239) HPR4 1.0 5.0 3.873 9722 738 (.120) 244 (.239) HPP1 1.0 5.0 3.873 972	HPAA1	1.0	5.0	4.262	.6630	647 (.120)	.919 (.239)
HPAA3 1.0 5.0 3.808 .9244 547 (120) 137 (239) HPAA4 1.0 5.0 3.572 1.0201 450 (120) 1244 (239) HPAA5 1.0 5.0 3.904 8645 465 (120) 199 (239) HPAA6 1.0 5.0 3.916 8809 621 (120) 292 (239) HPAA7 1.0 5.0 3.685 1.0752 656 (120) 169 (239) HPAA9 1.0 5.0 3.940 958 654 (120) 125 (239) HPR1 1.0 5.0 4.401 711 1406 (120) 288 (239) HPR2 2.0 5.0 4.322 7712 1069 (120) 387 (239) HPR4 1.0 5.0 3.783 7128 200 (120) 387 (239) HPR4 1.0 5.0 3.873 7128 200 (120) 387 (239) HPP1 1.0 5.0 3.512 1.0482 524 (120) <	HPAA2	2.0	5.0	4.315	.7041	738 (.120)	.106 (.239)
HPAA4 1.0 5.0 3.572 1.0201 450 (120) 244 (239) HPAA5 1.0 5.0 3.904 .8645 465 (120) 190 (239) HPAA6 1.0 5.0 3.916 .8809 521 (120) .292 (239) HPAA7 1.0 5.0 4.060 .8911 755 (120) .162 (239) HPAA8 1.0 5.0 3.940 .9588 654 (120) 125 (239) HPR1 1.0 5.0 4.432 .7712 -1.069 (120) .853 (239) HPR2 2.0 5.0 4.322 .7712 -1.069 (120) .853 (239) HPR3 1.0 5.0 4.322 .7712 -1.069 (120) .6661 (239) HPR4 1.0 5.0 3.783 .9722 .738 (120) .234 (239) HPP1 1.0 5.0 3.512 1.0482 .524 (120) .337 (239) HPP3 1.0 5.0 3.512 1.0482 .524 (120) .337 (239) </td <td>HPAA3</td> <td>1.0</td> <td>5.0</td> <td>3.808</td> <td>.9244</td> <td>547 (.120)</td> <td>137 (.239)</td>	HPAA3	1.0	5.0	3.808	.9244	547 (.120)	137 (.239)
HPAA5 1.0 5.0 3.904 8645 465 (.120) 199 (.239) HPAA6 1.0 5.0 3.916 8809 621 (.120) 292 (.239) HPAA8 1.0 5.0 3.685 1.0752 555 (.120) 162 (.239) HPAA9 1.0 5.0 3.940 9588 654 (.120) 125 (.239) HPR1 1.0 5.0 4.401 7411 -1.406 (.120) 2808 (.239) HPR2 2.0 5.0 4.322 7712 -1.069 (.120) 853 (.239) HPR3 1.0 5.0 4.322 7712 1006 (.120) 287 (.239) HPR4 1.0 5.0 4.323 843 1208 591 (.120) 387 (.239) HPR4 1.0 5.0 3.873 9722 738 (.120) 234 (.239) HPP1 1.0 5.0 3.512 1.0482 524 (.120) 337 (.239) HPP2 1.0 5.0 3.428 1.079	HPAA4	1.0	5.0	3.572	1.0201	450 (.120)	244 (.239)
HPAA6 1.0 5.0 3.916 .8809 621 (120) .292 (239) HPAA7 1.0 5.0 4.060 .8911 .755 (120) .162 (239) HPAA8 1.0 5.0 3.685 1.0752 656 (120) 125 (239) HPA1 1.0 5.0 4.401 .7411 -1.406 (120) .2808 (239) HPR1 1.0 5.0 4.402 .7712 -1.069 (120) .653 (239) HPR3 1.0 5.0 4.082 .8463 636 (120) 028 (239) HPR4 1.0 5.0 3.726 1.0985 901 (120) 687 (239) HPR5 1.0 5.0 3.737 .9722 738 (120) .234 (239) HPP3 1.0 5.0 4.534 .6878 -1.948 (120) 4.260 (239) HPP4 1.0 5.0 3.512 1.0482 .524 (120) 337 (239) HPNA1 1.0 5.0 3.512 1.0482 524 (120) 4238 <td>HPAA5</td> <td>1.0</td> <td>5.0</td> <td>3.904</td> <td>.8645</td> <td>465 (.120)</td> <td>199 (.239)</td>	HPAA5	1.0	5.0	3.904	.8645	465 (.120)	199 (.239)
HPAA7 1.0 5.0 4.060 .8911 755 (.120) .162 (.239) HPAA8 1.0 5.0 3.685 1.0752 656 (.120) 169 (.239) HPAA9 1.0 5.0 3.401 7411 -1.406 (.120) 2.208 (.239) HPR2 2.0 5.0 4.322 7712 -1.069 (.120) 853 (.239) HPR3 1.0 5.0 4.082 .8463 636 (.120) 028 (.239) HPR4 1.0 5.0 4.082 4663 200 (.120) 661 (.239) HPR5 1.0 5.0 3.873 9722 738 (.120) 234 (.239) HPP1 1.0 5.0 4.594 6878 1948 (.120) 4.250 (.239) HPP3 1.0 5.0 3.512 1.0482 524 (.120) 337 (.239) HPNA1 1.0 5.0 3.543 9979 361 (.120) 4263 (.239) HPNA3 1.0 5.0 3.645 1059 500	HPAA6	1.0	5.0	3.916	.8809	621 (.120)	.292 (.239)
HPAA8 1.0 5.0 3.685 1.0752 656 (.120) 169 (.239) HPAA9 1.0 5.0 3.940 .9588 654 (.120) 125 (.239) HPR1 1.0 5.0 4.401 .7411 -1.406 (.120) .8363 (.239) HPR3 1.0 5.0 4.302 .7712 -1.069 (.120) 853 (.239) HPR4 1.0 5.0 3.3726 1.0985 591 (.120) 387 (.239) HPR4 1.0 5.0 3.389 1.1268 200 (.120) 661 (.239) HPP1 1.0 5.0 3.873 .9722 738 (.120) 234 (.239) HPP2 1.0 5.0 3.512 1.0482 524 (.120) 337 (.239) HPA3 1.0 5.0 3.512 1.0482 524 (.120) 356 (.239) HPA4 1.0 5.0 3.543 .9979 361 (.120) 428 (.239) HPNA3 1.0 5.0 3.618 1.0645 419 (.120	HPAA7	1.0	5.0	4.060	.8911	755 (.120)	.162 (.239)
HPAA9 1.0 5.0 3.940 .9588 654 (.120) .125 (.239) HPR1 1.0 5.0 4.401 .7411 -1.406 (.120) 2.808 (.239) HPR2 2.0 5.0 4.322 .7712 -1.069 (.120) .853 (.239) HPR3 1.0 5.0 3.726 1.0985 591 (.120) 287 (.239) HPR4 1.0 5.0 3.726 1.0985 501 (.120) 661 (.239) HPP1 1.0 5.0 4.038 .9043 842 (.120) 661 (.239) HPP2 1.0 5.0 4.594 .6878 -1.948 (.120) 4.234 (.239) HPP3 1.0 5.0 4.524 .6878 -1.948 (.120) 4.326 (.239) HPP4 1.0 5.0 3.512 1.0482 -524 (.120) 337 (.239) HPNA1 1.0 5.0 3.618 1.0645 419 (.120) 495 (.239) HPNA3 1.0 5.0 3.825 1.0299 667 (.120) </td <td>HPAA8</td> <td>1.0</td> <td>5.0</td> <td>3.685</td> <td>1.0752</td> <td>656 (.120)</td> <td>169 (.239)</td>	HPAA8	1.0	5.0	3.685	1.0752	656 (.120)	169 (.239)
HPR1 1.0 5.0 4.401 .7411 -1.406 (.120) 2.808 (.239) HPR2 2.0 5.0 4.322 .7712 -1.069 (.120) .853 (.239) HPR3 1.0 5.0 4.322 .7712 -1.069 (.120) .028 (.239) HPR4 1.0 5.0 3.726 1.0985 591 (.120) 387 (.239) HPR5 1.0 5.0 3.839 1.1268 200 (.120) 661 (.239) HPP1 1.0 5.0 4.038 .9043 842 (.120) .234 (.239) HPP2 1.0 5.0 4.594 .6878 -1.948 (.120) 4.250 (.239) HPP4 1.0 5.0 3.428 1.0482 .524 (.120) 337 (.239) HPNA1 1.0 5.0 3.428 1.0798 326 (.120) 596 (.239) HPNA3 1.0 5.0 3.618 1.0645 419 (.120) 495 (.239) HPNA4 1.0 5.0 3.625 1.1528 .616 (.120) <td>HPAA9</td> <td>1.0</td> <td>5.0</td> <td>3.940</td> <td>.9588</td> <td>654 (.120)</td> <td>125 (.239)</td>	HPAA9	1.0	5.0	3.940	.9588	654 (.120)	125 (.239)
HPR2 2.0 5.0 4.322 .7712 -1.069 (.120) .853 (.239) HPR3 1.0 5.0 4.082 .8463 636 (.120) 028 (.239) HPR4 1.0 5.0 3.389 1.1268 200 (.120) 661 (.239) HPP1 1.0 5.0 3.389 1.1268 200 (.120) .504 (.239) HPP1 1.0 5.0 4.038 .9043 842 (.120) .504 (.239) HPP2 1.0 5.0 4.534 .6878 -1.948 (.120) 4.250 (.239) HPP3 1.0 5.0 4.238 .8437 -1.127 (.120) 1.336 (.239) HPN4 1.0 5.0 3.428 1.0798 326 (.120) 596 (.239) HPNA3 1.0 5.0 3.618 1.0645 419 (.120) 495 (.239) HPNA4 1.0 5.0 3.625 1.1528 616 (.120) 386 (.239) HPNA5 1.0 5.0 3.637 .9239 .7702 (.120) <td>HPR1</td> <td>1.0</td> <td>5.0</td> <td>4.401</td> <td>.7411</td> <td>-1.406 (.120)</td> <td>2.808 (.239)</td>	HPR1	1.0	5.0	4.401	.7411	-1.406 (.120)	2.808 (.239)
HPR3 1.0 5.0 4.082 .8463 636 (.120) 028 (.239) HPR4 1.0 5.0 3.726 1.0985 591 (.120) 387 (.239) HPR5 1.0 5.0 3.389 1.1268 200 (.120) 661 (.239) HPP1 1.0 5.0 4.038 .9043 842 (.120) .504 (.239) HPP2 1.0 5.0 4.594 .6878 1948 (.120) 4.250 (.239) HPP4 1.0 5.0 4.238 .8437 -1.127 (.120) 1.336 (.239) HPN41 1.0 5.0 3.512 1.0482 524 (.120) 337 (.239) HPNA2 1.0 5.0 3.543 .9979 361 (.120) 285 (.239) HPNA4 1.0 5.0 3.642 1.0645 419 (.120) 495 (.239) HPNA5 1.0 5.0 3.889 .9169 590 (.120) 140 (.239) HPNA6 1.0 5.0 3.625 1.1528 616 (.120)	HPR2	2.0	5.0	4.322	.7712	-1.069 (.120)	.853 (.239)
HPR4 1.0 5.0 3.726 1.0985 591 (.120) 387 (.239) HPR5 1.0 5.0 3.389 1.1268 200 (.120) 661 (.239) HPP1 1.0 5.0 3.873 .9722 738 (.120) .234 (.239) HPP2 1.0 5.0 4.594 .6878 -1.1948 (.120) 4.250 (.239) HPP4 1.0 5.0 4.238 .8437 -1.127 (.120) 1.336 (.239) HPNA1 1.0 5.0 3.512 1.0482 524 (.120) 337 (.239) HPNA2 1.0 5.0 3.543 .9979 361 (.120) 285 (.239) HPNA3 1.0 5.0 3.618 1.0645 419 (.120) 495 (.239) HPNA4 1.0 5.0 3.889 .9169 550 (.120) 140 (.23) HPNA5 1.0 5.0 3.625 1.1528 .616 (.120) 386 (.239) HPNA6 1.0 5.0 3.647 1.1586 .617 (.120)	HPR3	1.0	5.0	4.082	.8463	636 (.120)	028 (.239)
HPR5 1.0 5.0 3.389 1.1268 200 (.120) 661 (.239) HPP1 1.0 5.0 4.038 .9043 842 (.120) .504 (.239) HPP2 1.0 5.0 4.594 .6878 -1.1948 (.120) .234 (.239) HPP3 1.0 5.0 4.594 .6878 -1.127 (.120) 1.336 (.239) HPP4 1.0 5.0 3.512 1.0482 .524 (.120) 337 (.239) HPNA1 1.0 5.0 3.543 .9979 361 (.120) 285 (.239) HPNA3 1.0 5.0 3.618 1.0645 .419 (.120) .495 (.239) HPNA4 1.0 5.0 3.889 .9169 .500 (.120) .140 (.239) HPNA5 1.0 5.0 3.825 1.0299 .667 (.120) 386 (.239) HPNA6 1.0 5.0 3.625 1.1528 .616 (.120) 386 (.239) HPNA7 1.0 5.0 3.647 1.1586 .617 (.120)	HPR4	1.0	5.0	3.726	1.0985	591 (.120)	387 (.239)
HPP1 1.0 5.0 4.038 .9043 842 (.120) .504 (.239) HPP2 1.0 5.0 3.873 .9722 .738 (.120) .234 (.239) HPP3 1.0 5.0 4.594 .6878 .1.948 (.120) 4.250 (.239) HPP4 1.0 5.0 4.238 .8437 .1.127 (.120) 1.336 (.239) HPNA1 1.0 5.0 3.512 1.0482 524 (.120) 337 (.239) HPNA2 1.0 5.0 3.428 1.0798 .326 (.120) 285 (.239) HPNA3 1.0 5.0 3.428 1.0798 326 (.120) 495 (.239) HPNA4 1.0 5.0 3.618 1.0645 419 (.120) 495 (.239) HPNA5 1.0 5.0 3.825 1.0299 667 (.120) .107 (.239) HPNA6 1.0 5.0 3.625 1.1528 616 (.120) .386 (.239) HPNA7 1.0 5.0 3.647 1.1586 617 (.120)<	HPR5	1.0	5.0	3.389	1.1268	200 (.120)	661 (.239)
HPP2 1.0 5.0 3.873 .9722 .738 (.120) .234 (.239) HPP3 1.0 5.0 4.594 .6878 -1.948 (.120) 4.250 (.239) HPP4 1.0 5.0 4.238 .8437 -1.127 (.120) 1.336 (.239) HPNA1 1.0 5.0 3.512 1.0482 .524 (.120) .337 (.239) HPNA2 1.0 5.0 3.543 .9979 .361 (.120) .285 (.239) HPNA3 1.0 5.0 3.618 1.0645 .419 (.120) .495 (.239) HPNA4 1.0 5.0 3.618 1.0645 .419 (.120) .495 (.239) HPNA5 1.0 5.0 3.889 .9169 .500 (.120) .140 (.239) HPNA6 1.0 5.0 3.825 1.0299 .667 (.120) .485 (.239) HPNA8 1.0 5.0 3.647 1.1586 .617 (.120) .485 (.239) HPNA9 1.0 5.0 3.781 1.0586 .656 (.120)	HPP1	1.0	5.0	4.038	.9043	842 (.120)	.504 (.239)
HPP31.05.04.594.6878-1.948 (.120)4.250 (.239)HPP41.05.04.238.8437-1.127 (.120)1.1336 (.239)HPNA11.05.03.5121.0482524 (.120)337 (.239)HPNA21.05.03.4281.0798326 (.120)596 (.239)HPNA31.05.03.643.9979361 (.120)285 (.239)HPNA41.05.03.6181.0645419 (.120)495 (.239)HPNA51.05.03.889.9169590 (.120)140 (.239)HPNA61.05.03.8251.0299667 (.120)386 (.239)HPNA71.05.03.6471.1586617 (.120)485 (.239)HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.03.873.9239.702 (.120).178 (.239)HPAC21.05.03.873.9239.702 (.120).178 (.239)HPAC31.05.03.834.9589.602 (.120).004 (.239)HPAC41.05.03.728.9992.731 (.120).422 (.239)HPAC51.05.03.728.9992.731 (.120).432 (.239)HPAC61.05.03.728.9092.731 (.120).644 (.239)HPAC71.05.03.728 </td <td>HPP2</td> <td>1.0</td> <td>5.0</td> <td>3.873</td> <td>.9722</td> <td>738 (.120)</td> <td>.234 (.239)</td>	HPP2	1.0	5.0	3.873	.9722	738 (.120)	.234 (.239)
HPP41.05.04.238.8437-1.127 (.120)1.336 (.239)HPNA11.05.03.5121.0482524 (.120)337 (.239)HPNA21.05.03.4281.0798326 (.120)596 (.239)HPNA31.05.03.543.9979361 (.120)285 (.239)HPNA41.05.03.6181.0645419 (.120)495 (.239)HPNA51.05.03.889.9169590 (.120)140 (.239)HPNA61.05.03.8251.0299667 (.120)197 (.239)HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA81.05.03.6471.1586617 (.120)224 (.239)HPNA91.05.04.000.9442897 (.120).626 (.239)HPNA91.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.04.031.8105685 (.120).429 (.239)HPAC21.05.04.050.8416632 (.120).002 (.239)HPAC31.05.03.873.9239.702 (.120).178 (.239)HPAC41.05.03.930.9301674 (.120).209 (.239)HPAC51.05.03.978.9220865 (.120).002 (.239)HPU11.05.03.978.9220.731 (.120).644 (.239)HPACC11.05.03.978	HPP3	1.0	5.0	4.594	.6878	-1.948 (.120)	4.250 (.239)
HPNA11.05.03.5121.0482524 (.120)337 (.239)HPNA21.05.03.4281.0798326 (.120)596 (.239)HPNA31.05.03.543.9979361 (.120)285 (.239)HPNA41.05.03.6181.0645419 (.120)495 (.239)HPNA51.05.03.889.9169590 (.120)140 (.239)HPNA61.05.03.8251.0299667 (.120)197 (.239)HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.03.6471.1586617 (.120)224 (.239)HPNA91.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.03.7819239702 (.120).1178 (.239)HPAC21.05.04.031.8105685 (.120)050 (.239)HPAC31.05.04.082.8173551 (.120)209 (.239)HPAC41.05.03.728.9989602 (.120)002 (.239)HPAC51.05.03.728.9992731 (.120).624 (.239)HPU11.05.03.728.9992731 (.120).644 (.239)HPAC11.05.03.781.9260865 (.120).604 (.239)HPU21.05.03	HPP4	1.0	5.0	4.238	.8437	-1.127 (.120)	1.336 (.239)
HPNA21.05.03.4281.0798326 (.120)596 (.239)HPNA31.05.03.543.9979361 (.120)285 (.239)HPNA41.05.03.6181.0645419 (.120)495 (.239)HPNA51.05.03.889.9169590 (.120)140 (.239)HPNA61.05.03.8251.0299667 (.120)197 (.239)HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.03.6471.1586617 (.120)224 (.239)HPNA91.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.03.873.9239702 (.120).1178 (.239)HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.03.834.9589.602 (.120).004 (.239)HPAC41.05.03.728.9992731 (.120).432 (.239)HPAC61.05.03.728.9992731 (.120).602 (.239)HPAC61.05.03.728.9992731 (.120).602 (.239)HPAC71.05.03.728.9992731 (.120).644 (.239)HPAC81.05.03.728.9064.632 (.120).004 (.239)HPAC61.05.03.781	HPNA1	1.0	5.0	3.512	1.0482	524 (.120)	337 (.239)
HPNA31.05.03.543.9979361 (.120)285 (.239)HPNA41.05.03.6181.0645419 (.120)495 (.239)HPNA51.05.03.889.9169590 (.120)140 (.239)HPNA61.05.03.8251.0299667 (.120)197 (.239)HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA71.05.03.6471.1586617 (.120)485 (.239)HPNA81.05.03.6471.1586617 (.120)224 (.239)HPNA91.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.03.7811.0586655 (.120)4.59 (.239)HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.03.834.9589602 (.120)094 (.239)HPAC51.05.03.728.9992731 (.120).432 (.239)HPU11.05.03.728.9992731 (.120).432 (.239)HPU21.05.03.728.9092731 (.120).644 (.239)HPACC11.05.03.781.9220865 (.120).644 (.239)HPAC21.05.03.788.7802996 (.120).707 (.239)HPAC61.05.04.74	HPNA2	1.0	5.0	3.428	1.0798	326 (.120)	596 (.239)
HPNA41.05.03.6181.0645419 (.120)495 (.239)HPNA51.05.03.889.9169590 (.120)140 (.239)HPNA61.05.03.8251.0299667 (.120)197 (.239)HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.03.6471.1586617 (.120).626 (.239)HPNA101.05.03.7811.0586656 (.120).224 (.239)HPAC11.05.04.031.8105685 (.120).224 (.239)HPAC21.05.04.050.8416632 (.120).705 (.239)HPAC31.05.04.050.8416632 (.120).209 (.239)HPAC41.05.03.834.9589602 (.120).004 (.239)HPAC51.05.03.728.9992.731 (.120).002 (.239)HPU11.05.03.728.9992.731 (.120).004 (.239)HPU21.05.03.781.9220.685 (.120).004 (.239)HPU21.05.04.178.8371.996 (.120).707 (.239)HPACC11.05.04.178.8371.964 (.120).893 (.239)HPAC51.05.04.178.8371.964 (.120).951 (.239)HPAC41.05.04.178.8	HPNA3	1.0	5.0	3.543	.9979	361 (.120)	285 (.239)
HPNA51.05.03.889.9169590 (.120)140 (.239)HPNA61.05.03.8251.0299667 (.120)197 (.239)HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.04.000.9442897 (.120)626 (.239)HPNA101.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.04.031.8105685 (.120)224 (.239)HPAC21.05.04.0508416632 (.120)178 (.239)HPAC31.05.04.0828173551 (.120)209 (.239)HPAC41.05.03.8349589602 (.120)004 (.239)HPAC51.05.03.7289992731 (.120)002 (.239)HPU11.05.03.7289064632 (.120)004 (.239)HPU21.05.03.7789220865 (.120)004 (.239)HPU31.05.04.17887711062 (.120)039 (.239)HPAC41.05.04.1788171964 (.120)951 (.239)HPAC51.05.04.1788171964 (.120)644 (.239)HPAC61.05.	HPNA4	1.0	5.0	3.618	1.0645	419 (.120)	495 (.239)
HPNA61.05.03.8251.0299667 (.120)197 (.239)HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.04.000.9442897 (.120).626 (.239)HPNA101.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.04.031.8105685 (.120).459 (.239)HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120)002 (.239)HPAC61.05.03.728.9992731 (.120).432 (.239)HPU11.05.03.7281.0064632 (.120).004 (.239)HPU21.05.03.978.9220865 (.120).644 (.239)HPACC11.05.04.178.8371964 (.120).893 (.239)HPAC231.05.04.178.8371964 (.120).893 (.239)HPACC41.05.04.178.8371964 (.120).893 (.239)HPACC51.05.04.161.8129898 (.120).951 (.239)HPACC51.05.04.16	HPNA5	1.0	5.0	3.889	.9169	590 (.120)	140 (.239)
HPNA71.05.03.6251.1528616 (.120)386 (.239)HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.04.000.9442897 (.120)626 (.239)HPNA101.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.04.031.8105685 (.120)224 (.239)HPAC21.05.03.873.9239702 (.120)178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120)002 (.239)HPAC61.05.03.7289992731 (.120)002 (.239)HPU11.05.03.7289992731 (.120)004 (.239)HPU21.05.03.978.9220865 (.120)044 (.239)HPAC11.05.03.9789220865 (.120)004 (.239)HPAC21.05.04.1788371964 (.120)039 (.239)HPAC21.05.04.1788371964 (.120)951 (.239)HPAC21.05.04.1788371964 (.120)951 (.239)HPAC21.05.04.1788171964 (.120)951 (.239)HPAC51.05.0 <td>HPNA6</td> <td>1.0</td> <td>5.0</td> <td>3.825</td> <td>1.0299</td> <td>667 (.120)</td> <td>197 (.239)</td>	HPNA6	1.0	5.0	3.825	1.0299	667 (.120)	197 (.239)
HPNA81.05.03.6471.1586617 (.120)485 (.239)HPNA91.05.04.000.9442897 (.120).626 (.239)HPNA101.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.04.031.8105685 (.120).459 (.239)HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120).004 (.239)HPAC61.05.03.728.9992731 (.120).002 (.239)HPU11.05.03.728.9992.731 (.120).004 (.239)HPU21.05.03.978.9220.865 (.120).644 (.239)HPU31.05.04.178.8871996 (.120).707 (.239)HPAC211.05.04.178.8371964 (.120).893 (.239)HPAC211.05.04.178.8371.996 (.120).707 (.239)HPAC211.05.04.178.8371.996 (.120).707 (.239)HPAC231.05.04.178.8129.820 (.120).934 (.239)HPAC51.05.04.178.8129.820 (.120).934 (.239)HPAC551.05.04.161.81	HPNA7	1.0	5.0	3.625	1.1528	616 (.120)	386 (.239)
HPNA91.05.04.000.9442897 (.120).626 (.239)HPNA101.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.04.031.8105685 (.120).459 (.239)HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120)094 (.239)HPAC61.05.03.930.9301674 (.120)002 (.239)HPU11.05.03.728.9992731 (.120).432 (.239)HPU21.05.03.978.9220865 (.120).644 (.239)HPU31.05.04.308.7802996 (.120).707 (.239)HPAC211.05.04.178.8371964 (.120).893 (.239)HPAC51.05.04.178.8371.964 (.120).893 (.239)HPAC51.05.04.178.8371.964 (.120).934 (.239)HPAC531.05.04.161.8129820 (.120).934 (.239)HPAC541.05.04.161.8129.898 (.120).934 (.239)HPAC551.05.04.161.8129.230 (.120).934 (.239)	HPNA8	1.0	5.0	3.647	1.1586	617 (.120)	485 (.239)
HPNA101.05.03.7811.0586656 (.120)224 (.239)HPAC11.05.04.031.8105685 (.120).459 (.239)HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120)094 (.239)HPAC61.05.03.930.9301674 (.120)002 (.239)HPU11.05.03.728.9992.731 (.120).432 (.239)HPU21.05.03.978.9220.865 (.120).004 (.239)HPU31.05.03.978.9220.865 (.120).644 (.239)HPACC11.05.04.274.8077-1.062 (.120).707 (.239)HPAC231.05.04.178.8371.996 (.120).893 (.239)HPACC41.05.04.178.8371.964 (.120).893 (.239)HPAC51.05.04.161.8129.898 (.120).934 (.239)HPAC51.05.04.161.8129.898 (.120).934 (.239)	HPNA9	1.0	5.0	4.000	.9442	897 (.120)	.626 (.239)
HPAC11.05.04.031.8105685 (.120).459 (.239)HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120)094 (.239)HPAC61.05.03.930.9301674 (.120)002 (.239)HPU11.05.03.728.9992.731 (.120).432 (.239)HPU21.05.03.728.9992.731 (.120).644 (.239)HPU31.05.03.978.9220.865 (.120).644 (.239)HPACC11.05.04.108.7802.996 (.120).707 (.239)HPACC31.05.04.178.8371.964 (.120).893 (.239)HPACC41.05.04.077.7878.820 (.120).951 (.239)HPACC51.05.04.161.8129.898 (.120).934 (.239)	HPNA10	1.0	5.0	3.781	1.0586	656 (.120)	224 (.239)
HPAC21.05.03.873.9239702 (.120).178 (.239)HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120)094 (.239)HPAC61.05.03.930.9301674 (.120)002 (.239)HPU11.05.03.728.9992731 (.120).432 (.239)HPU21.05.03.728.9992731 (.120).004 (.239)HPU31.05.03.978.9220865 (.120).004 (.239)HPACC11.05.04.3087802996 (.120)707 (.239)HPACC31.05.04.1788077.1.062 (.120)039 (.239)HPACC41.05.04.0777878820 (.120)951 (.239)HPACC51.05.04.161.8129898 (.120)934 (.239)	HPAC1	1.0	5.0	4.031	.8105	685 (.120)	.459 (.239)
HPAC31.05.04.050.8416632 (.120)050 (.239)HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589602 (.120)094 (.239)HPAC61.05.03.930.9301674 (.120)002 (.239)HPU11.05.03.728.9992731 (.120).432 (.239)HPU21.05.03.728.9992731 (.120).432 (.239)HPU31.05.03.978.9220865 (.120).004 (.239)HPACC11.05.04.308.7802996 (.120).707 (.239)HPACC21.05.04.274.8077-1.062 (.120)1.039 (.239)HPACC31.05.04.178.8371964 (.120).893 (.239)HPACC41.05.04.077.7878820 (.120).934 (.239)HPACC51.05.04.161.8129898 (.120).934 (.239)	HPAC2	1.0	5.0	3.873	.9239	702 (.120)	.178 (.239)
HPAC41.05.04.082.8173551 (.120)209 (.239)HPAC51.05.03.834.9589.602 (.120).094 (.239)HPAC61.05.03.930.9301.674 (.120).002 (.239)HPU11.05.03.728.9992.731 (.120).432 (.239)HPU21.05.03.7281.0064.632 (.120).004 (.239)HPU31.05.03.978.9220.865 (.120).004 (.239)HPACC11.05.04.308.7802.996 (.120).707 (.239)HPACC21.05.04.274.8077-1.062 (.120)1.039 (.239)HPACC31.05.04.178.8371.964 (.120).893 (.239)HPACC41.05.04.077.7878.820 (.120).951 (.239)HPACC51.05.04.161.8129.898 (.120).934 (.239)	HPAC3	1.0	5.0	4.050	.8416	632 (.120)	050 (.239)
HPAC51.05.03.834.9589602 (.120)094 (.239)HPAC61.05.03.930.9301674 (.120)002 (.239)HPU11.05.03.728.9992731 (.120).432 (.239)HPU21.05.03.7281.0064632 (.120).004 (.239)HPU31.05.03.978.9220865 (.120).004 (.239)HPACC11.05.04.308.7802996 (.120).707 (.239)HPACC21.05.04.274.8077-1.062 (.120)1.039 (.239)HPACC31.05.04.178.8371964 (.120).893 (.239)HPACC41.05.04.161.8129898 (.120).934 (.239)OD2.05.04.187.752.212 (.120).934 (.239)	HPAC4	1.0	5.0	4.082	.8173	551 (.120)	209 (.239)
HPAC61.05.03.930.9301674 (.120)002 (.239)HPU11.05.03.728.9992.731 (.120).432 (.239)HPU21.05.03.7281.0064.632 (.120).004 (.239)HPU31.05.03.978.9220.865 (.120).644 (.239)HPACC11.05.04.308.7802.996 (.120).707 (.239)HPACC21.05.04.274.8077-1.062 (.120)1.039 (.239)HPACC31.05.04.178.8371.964 (.120).893 (.239)HPACC41.05.04.161.8129.888 (.120).934 (.239)OD2.05.04.187.752.212 (.120).934 (.239)	HPAC5	1.0	5.0	3.834	.9589	602 (.120)	094 (.239)
HPU11.05.03.728.9992731 (.120).432 (.239)HPU21.05.03.7281.0064632 (.120).004 (.239)HPU31.05.03.978.9220865 (.120).644 (.239)HPACC11.05.04.308.7802996 (.120).707 (.239)HPACC21.05.04.274.8077-1.062 (.120)1.039 (.239)HPACC31.05.04.178.8371964 (.120).893 (.239)HPACC41.05.04.077.7878820 (.120).951 (.239)HPACC51.05.04.161.8129898 (.120).934 (.239)	HPAC6	1.0	5.0	3.930	.9301	674 (.120)	002 (.239)
HPU21.05.03.7281.0064632 (.120).004 (.239)HPU31.05.03.978.9220865 (.120).644 (.239)HPACC11.05.04.308.7802996 (.120).707 (.239)HPACC21.05.04.274.8077-1.062 (.120)1.039 (.239)HPACC31.05.04.178.8371964 (.120).893 (.239)HPACC41.05.04.077.7878820 (.120).951 (.239)HPACC51.05.04.161.8129898 (.120).934 (.239)	HPU1	1.0	5.0	3.728	.9992	731 (.120)	.432 (.239)
HPU3 1.0 5.0 3.978 .9220 865 (.120) .644 (.239) HPACC1 1.0 5.0 4.308 .7802 996 (.120) .707 (.239) HPACC2 1.0 5.0 4.274 .8077 -1.062 (.120) 1.039 (.239) HPACC3 1.0 5.0 4.178 .8371 964 (.120) .893 (.239) HPACC4 1.0 5.0 4.077 .7878 820 (.120) .951 (.239) HPACC5 1.0 5.0 4.161 .8129 898 (.120) .934 (.239) OD 2.0 5.0 4.137 .752 .212 (.120) .227 (.220)	HPU2	1.0	5.0	3.728	1.0064	632 (.120)	.004 (.239)
HPACC1 1.0 5.0 4.308 .7802 996 (.120) .707 (.239) HPACC2 1.0 5.0 4.274 .8077 -1.062 (.120) 1.039 (.239) HPACC3 1.0 5.0 4.178 .8371 964 (.120) .893 (.239) HPACC4 1.0 5.0 4.077 .7878 820 (.120) .951 (.239) HPACC5 1.0 5.0 4.161 .8129 898 (.120) .934 (.239) OD 2.0 5.0 4.137 .752 .212 (.120) .277 (.220)	HPU3	1.0	5.0	3.978	.9220	865 (.120)	.644 (.239)
HPACC2 1.0 5.0 4.274 .8077 -1.062 (.120) 1.039 (.239) HPACC3 1.0 5.0 4.178 .8371 964 (.120) .893 (.239) HPACC4 1.0 5.0 4.077 .7878 820 (.120) .951 (.239) HPACC5 1.0 5.0 4.161 .8129 898 (.120) .934 (.239)	HPACC1	1.0	5.0	4.308	.7802	996 (.120)	.707 (.239)
HPACC3 1.0 5.0 4.178 .8371 964 (.120) .893 (.239) HPACC4 1.0 5.0 4.077 .7878 820 (.120) .951 (.239) HPACC5 1.0 5.0 4.161 .8129 898 (.120) .934 (.239) OD 2.0 5.0 4.137 .752 .212 (.120) .277 (.220)	HPACC2	1.0	5.0	4.274	.8077	-1.062 (.120)	1.039 (.239)
HPACC4 1.0 5.0 4.077 .7878 820 (.120) .951 (.239) HPACC5 1.0 5.0 4.161 .8129 898 (.120) .934 (.239) OD 2.0 5.0 4.137 .752 .212 (.120) .277 (.220)	HPACC3	1.0	5.0	4.178	.8371	964 (.120)	.893 (.239)
HPACC5 1.0 5.0 4.161 .8129 898 (.120) .934 (.239) OO 2.0 5.0 4.137 (752) 212 (.120) 277 (.220)	HPACC4	1.0	5.0	4.077	.7878	820 (.120)	.951 (.239)
	HPACC5	1.0	5.0	4.161	.8129	898 (.120)	.934 (.239)
0Q [2.0] 3.0 [4.15/] .6/52 [313 (.120)]2// (.239)]	OQ	2.0	5.0	4.137	.6752	313 (.120)	277 (.239)

Appendix E: Descriptive statistics of the entire sample (interval variables)

Source: SPSS
Appendix F: Descriptive statistics for nominal items (controls)

Item	Share (in %)
Sex (S)	
Female	68.8
Male	31.2
Level of study (NS)	
1 st year (Bachelor)	40.2
2 nd year (Bachelor)	20.7
3 rd year (Bachelor)	19.5
4 th year (Master)	18.4
5 th year (Master)	1.2
Student status (STAT)	
Full-time	9.4
Part-time	60.5
Distance learning	30.1
Stream (STRE)	
Marketing Management	51.7
Marketing of Informational Systems	2.3
Financial Management	0.4
Management and Organization	2.3
Accounting	1.9
Economy	12.8
Banking	28.6
Planned qualification (PQ)	
Bachelor	11.7
Master	77.4
PhD	10.9

Table:Descriptive statistics for nominal variables

Source: SPSS

Appendix G: Exploratory factor analysis

Factor method: Principal Components, Rotation: Varimax

FACTOR 1 - HEdPERF Administrative aspects - Administrative staff

Communalities			
-	Initial	Extraction	
HPAA1	1.000	.392	
HPAA2	1.000	.406	
HPAA3	1.000	.566	
HPAA4	1.000	.629	
HPAA5	1.000	.617	
HPAA6	1.000	.624	
HPAA7	1.000	.534	
HPAA8	1.000	.489	
HPAA9	1.000	.478	

Extraction Method: Principal

Component Analysis.

Total Variance Explained

	Initial Eigenvalues			Extract	ion Sums of Square	d Loadings
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.736	52.619	52.619	4.736	52.619	52.619
2	.889	9.875	62.495			
3	.695	7.723	70.218			
4	.605	6.723	76.941			
5	.536	5.953	82.894			
6	.443	4.923	87.816			
7	.412	4.574	92.391			
8	.357	3.971	96.362			
9	.327	3.638	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix	a
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	Component	
	1	
HPAA1	.626	
HPAA2	.637	
HPAA3	.752	
HPAA4	.793	
HPAA5	.786	
HPAA6	.790	
HPAA7	.731	

HPAA8	.699
HPAA9	.691

Extraction Method:

Principal Component

Analysis.

a. 1 components extracted.

FACTOR 2 - HEdPERF Reputation

Communalities			
	Initial	Extraction	
HPR1	1.000	.483	
HPR2	1.000	.586	
HPR3	1.000	.725	
HPR4	1.000	.528	
HPR5	1.000	.461	

Extraction Method: Principal

Component Analysis.

Total Variance Explained

	Initial Eigenvalues			Extract	ion Sums of Square	d Loadings
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.783	55.657	55.657	2.783	55.657	55.657
2	1.013	20.258	75.916			
3	.441	8.817	84.732			
4	.394	7.888	92.621			
5	.369	7.379	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component	
	1	
HPR1	.695	
HPR2	.765	
HPR3	.851	
HPR4	.727	
HPR5	.679	

Extraction Method:

Principal Component

Analysis.

FACTOR 3 -HEdPERF Program

Communalities			
	Initial	Extraction	
HPP1	1.000	.698	
HPP2	1.000	.627	
HPP3	1.000	.299	
HPP4	1.000	.677	

Extraction Method: Principal

Component Analysis.

Total Variance Explained

	Initial Eigenvalues		Extract	tion Sums of Square	d Loadings	
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.300	57.503	57.503	2.300	57.503	57.503
2	.823	20.572	78.075			
3	.496	12.390	90.465			
4	.381	9.535	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix ^a		
	Component	
	1	
HPP1	.835	
HPP2	.792	
HPP3	.546	
HPP4	.823	

Extraction Method:

Principal Component

Analysis.

a. 1 components extracted.

FACTOR 4 - HEdPERF Non-academic aspects - Administrative staff

Communalities					
	Initial	Extraction			
HPNA1	1.000	.665			
HPNA2	1.000	.661			
HPNA3	1.000	.741			
HPNA4	1.000	.750			
HPNA5	1.000	.574			
HPNA6	1.000	.632			
HPNA7	1.000	.724			

HPNA8	1.000	.723
HPNA9	1.000	.510
HPNA10	1.000	.470

Extraction Method: Principal Component

Analysis.

Total	Variance	Explained
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	Initial Eigenvalues			Extract	ion Sums of Square	d Loadings
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.450	64.500	64.500	6.450	64.500	64.500
2	.848	8.480	72.980			
3	.549	5.485	78.465			
4	.503	5.033	83.498			
5	.394	3.941	87.438			
6	.342	3.421	90.859			
7	.302	3.015	93.874			
8	.226	2.259	96.133			
9	.211	2.110	98.244			
10	.176	1.756	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix ^a			
	Component		
	1		
HPNA1	.815		
HPNA2	.813		
HPNA3	.861		
HPNA4	.866		
HPNA5	.757		
HPNA6	.795		
HPNA7	.851		
HPNA8	.850		
HPNA9	.714		
HPNA10	.685		

Extraction Method: Principal

Component Analysis.

FACTOR 5 - HEdPERF Access

Communalities					
	Initial	Extraction			
HPAC1	1.000	.629			
HPAC2	1.000	.571			
HPAC3	1.000	.599			
HPAC4	1.000	.559			
HPAC5	1.000	.529			
HPAC6	1.000	.584			

Extraction Method: Principal

Component Analysis.

Total Variance Explained

	Initial Eigenvalues			Extract	tion Sums of Square	d Loadings
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.471	57.854	57.854	3.471	57.854	57.854
2	.705	11.748	69.602			
3	.564	9.404	79.006			
4	.487	8.117	87.122			
5	.403	6.725	93.847			
6	.369	6.153	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component	
	1	
HPAC1	.793	
HPAC2	.756	
HPAC3	.774	
HPAC4	.748	
HPAC5	.727	
HPAC6	.764	

Extraction Method:

Principal Component

Analysis.

FACTOR 6 - HEdPERF Understanding

Communalities				
	Initial Extraction			
HPU1	1.000	.757		
HPU2	1.000	.812		
HPU3	1.000	.582		

Extraction Method: Principal

Component Analysis.

Total Variance Explained

	Initial Eigenvalues		Extract	ion Sums of Square	d Loadings	
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.151	71.703	71.703	2.151	71.703	71.703
2	.581	19.364	91.066			
3	.268	8.934	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

_	Component	
	1	
HPU1	.870	
HPU2	.901	
HPU3	.763	

Extraction Method:

Principal Component

Analysis.

a. 1 components extracted.

FACTOR 7 - Accreditation

Communalities					
Initial Extraction					
HPACC1	1.000	.592			
HPACC2	1.000	.703			
HPACC3	1.000	.716			
HPACC4	1.000	.684			
HPACC5	1.000	.695			

Extraction Method: Principal Component Analysis.

		Initial Eigenvalu	ies	Extraction Sums of Squared Loadings					
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %			
1	3.390	67.800	67.800	3.390	67.800	67.800			
2	.605	12.102	79.902						
3	.370	7.390	87.292						
4	.343	6.866	94.158						
5	.292	5.842	100.000						

Total Variance Explained

Extraction Method: Principal Component Analysis.

Component Matrix ^a							
	Component						
	1						
HPACC1	.770						
HPACC2	.838						
HPACC3	.846						
HPACC4	.827						
HPACC5	.834						

Extraction Method: Principal

Component Analysis.

Appendix H: Confirmatory Factor Analysis Figure (LISREL output)



Chi-Square=2294.06, df=798, P-value=0.00000, RMSEA=0.067

		HPAA			HPR			HPP			HPNA			HPAC			HPU			HPAC	C
	St. loadings	St. error	Items	St. loadings	St. error	Items	St. loadings	St. error	Items	St. loadings	St. error	Items									
1	0.574	0.6	HPAA2	0.608	0.43	HPR1	0.758	0.425	HPP1	0.801	0.359	HPNA1	0.748	0.441	HPAC1	0.8	0.361	HPU1	0.688	0.527	HPACC1
2	0.721	0.48	HPAA3	0.672	0.448	HPR2	0.739	0.454	HPP2	0.805	0.352	HPNA2	0.687	0.528	HPAC2	0.871	0.242	HPU2	0.773	0.402	HPACC2
3	0.778	0.394	HPAA4	0.81	0.343	HPR3	0.737	0.457	HPP4	0.846	0.284	HPNA3	0.719	0.483	HPAC3	0.64	0.59	HPU3	0.808	0.347	HPACC3
4	0.763	0.418	HPAA5	0.656	0.57	HPR4				0.857	0.266	HPNA4	0.687	0.528	HPAC4				0.792	0.372	HPACC4
5	0.754	0.431	HPAA6	0.609	0.429	HPR5				0.715	0.489	HPNA5	0.655	0.571	HPAC5				0.8	0.36	HPACC5
6	0.676	0.543	HPAA7							0.765	0.415	HPNA6	0.72	0.482	HPAC6						
7	0.662	0.551	HPAA8							0.838	0.298	HPNA7									
8	0.643	0.577	HPAA9							0.833	0.307	HPNA8									
9										0.667	0.555	HPNA9									
10										0.637	0.594	HPNA10									
CR	0.886			0.835			0.789			0.939			0.900			0.817			0.900		
AVE	0.495			0.507			0.555			0.608			0.495			0.602			0.598		

Appendix I: Confirmatory factor analysis results (LISREL Output)

Appendix J: Independent sample t test for two groups

	С	N	Mean	Std. Deviation	Std. Error Mean
S	1.0	150	.593	.4929	.0402
	2.0	266	.688	.4642	.0285
NS	1.0	150	2.233	.9153	.0747
	2.0	266	2.195	1.1845	.0726
STAT	1.0	150	1.047	.2413	.0197
	2.0	266	2.207	.5944	.0364
STRE	1.0	150	2.560	2.0773	.1696
	2.0	266	3.526	2.7693	.1698
PQ	1.0	150	2.287	.5225	.0427
	2.0	266	1.992	.4758	.0292
HPAA1	1.0	150	4.207	.5711	.0466
	2.0	266	4.293	.7088	.0435
HPAA2	1.0	150	4.247	.7136	.0583
	2.0	266	4.353	.6971	.0427
HPAA3	1.0	150	3.540	.9314	.0760
	2.0	266	3.959	.8871	.0544
HPAA4	1.0	150	3.387	1.0541	.0861
	2.0	266	3.677	.9871	.0605
HPAA5	1.0	150	3.860	.8437	.0689
	2.0	266	3.929	.8766	.0537
HPAA6	1.0	150	3.773	.8910	.0728
	2.0	266	3.996	.8666	.0531
HPAA7	1.0	150	3.827	.9465	.0773
	2.0	266	4.192	.8315	.0510
HPAA8	1.0	150	3.313	1.1880	.0970
	2.0	266	3.895	.9458	.0580
HPAA9	1.0	150	3.800	.9554	.0780
	2.0	266	4.019	.9535	.0585
HPR1	1.0	150	4.393	.7849	.0641
	2.0	266	4.406	.7168	.0439
HPR2	1.0	150	4.300	.7922	.0647
	2.0	266	4.335	.7604	.0466
HPR3	1.0	150	3.893	.8604	.0702
	2.0	266	4.188	.8210	.0503
HPR4	1.0	150	3.540	1.0907	.0891
	2.0	266	3.831	1.0909	.0669

Table:Independent sample t test

HPR5	1.0	150	3.167	1.0325	.0843
	2.0	266	3.515	1.1598	.0711
HPP1	1.0	150	3.947	.9033	.0738
	2.0	266	4.090	.9025	.0553
HPP2	1.0	150	3.693	1.0359	.0846
	2.0	266	3.974	.9211	.0565
HPP3	1.0	150	4.660	.6638	.0542
	2.0	266	4.556	.6995	.0429
HPP4	1.0	150	4.160	.8676	.0708
	2.0	266	4.282	.8284	.0508
HPNA1	1.0	150	3.313	1.0564	.0863
	2.0	266	3.624	1.0287	.0631
HPNA2	1.0	150	3.167	1.0582	.0864
	2.0	266	3.575	1.0658	.0653
HPNA3	1.0	150	3.340	1.0221	.0835
	2.0	266	3.658	.9671	.0593
HPNA4	1.0	150	3.473	1.0278	.0839
	2.0	266	3.699	1.0780	.0661
HPNA5	1.0	150	3.647	.9206	.0752
	2.0	266	4.026	.8877	.0544
HPNA6	1.0	150	3.587	1.0310	.0842
	2.0	266	3.959	1.0067	.0617
HPNA7	1.0	150	3.347	1.1757	.0960
	2.0	266	3.782	1.1114	.0681
HPNA8	1.0	150	3.427	1.1891	.0971
	2.0	266	3.771	1.1244	.0689
HPNA9	1.0	150	3.873	.9919	.0810
	2.0	266	4.071	.9104	.0558
HPNA10	1.0	150	3.653	.9898	.0808
	2.0	266	3.853	1.0908	.0669
HPAC1	1.0	150	3.933	.7743	.0632
	2.0	266	4.086	.8265	.0507
HPAC2	1.0	150	3.900	.8728	.0713
	2.0	266	3.857	.9528	.0584
HPAC3	1.0	150	3.947	.8092	.0661
	2.0	266	4.109	.8553	.0524
HPAC4	1.0	150	3.960	.8100	.0661
	2.0	266	4.150	.8149	.0500
HPAC5	1.0	150	3.627	1.0003	.0817
	2.0	266	3.951	.9160	.0562
HPAC6	1.0	150	3.727	.9892	.0808

	2.0	266	4.045	.8762	.0537
HPU1	1.0	150	3.473	1.0911	.0891
	2.0	266	3.872	.9146	.0561
HPU2	1.0	150	3.360	1.0381	.0848
	2.0	266	3.936	.9274	.0569
HPU3	1.0	150	3.647	1.0306	.0842
	2.0	266	4.165	.7979	.0489
HPACC1	1.0	150	4.380	.7568	.0618
	2.0	266	4.267	.7916	.0485
HPACC2	1.0	150	4.260	.8227	.0672
	2.0	266	4.282	.8006	.0491
HPACC3	1.0	150	4.040	.8661	.0707
	2.0	266	4.256	.8117	.0498
HPACC4	1.0	150	4.020	.8472	.0692
	2.0	266	4.109	.7519	.0461
HPACC5	1.0	150	4.153	.8252	.0674
	2.0	266	4.165	.8073	.0495
OQ	1.0	150	3.920	.6607	.0539
	2.0	266	4.259	.6533	.0401
S1	1.0	150	4.093	.7628	.0623
	2.0	266	4.414	.6687	.0410
S2	1.0	150	4.160	.7865	.0642
	2.0	266	4.361	.7851	.0481
S3	1.0	150	3.767	.8388	.0685
	2.0	266	4.011	.8577	.0526
S4	1.0	150	3.740	.8780	.0717
	2.0	266	3.744	.9764	.0599
S5	1.0	150	3.787	.9166	.0748
	2.0	266	4.053	.8540	.0524
L1	1.0	150	3.607	.8346	.0681
	2.0	266	3.842	.9015	.0553
L2	1.0	150	3.920	1.0396	.0849
	2.0	266	4.128	.9228	.0566
L3	1.0	150	4.047	.8999	.0735
	2.0	266	4.154	.7389	.0453
L4	1.0	150	4.000	.8823	.0720
	2.0	266	4.241	.7074	.0434
L5	1.0	150	4.000	.8747	.0714
	2.0	266	4.195	.7815	.0479
JEXP1	1.0	150	2.813	.9077	.0741
	2.0	266	2.451	1.0166	.0623

JEXP2	1.0	150	1.707	.8865	.0724
	2.0	266	1.647	.8661	.0531
CRE1	1.0	150	4.060	.8765	.0716
	2.0	0 ^a			
CRE2	1.0	150	3.987	.9195	.0751
	2.0	0 ^a			
HPAA	1.0	150	3.7183	.68483	.05592
	2.0	266	4.0023	.65575	.04021
HPR	1.0	150	4.0317	.67760	.05533
	2.0	266	4.1898	.65922	.04042
HPP	1.0	150	3.9333	.75183	.06139
	2.0	266	4.1153	.75796	.04647
HPNA	1.0	150	3.4827	.83527	.06820
	2.0	266	3.8019	.82120	.05035
HPAC	1.0	150	3.8489	.63585	.05192
	2.0	266	4.0332	.67916	.04164
HPU	1.0	150	3.4933	.87275	.07126
	2.0	266	3.9912	.74305	.04556
HPACC	1.0	150	4.1707	.67928	.05546
	2.0	266	4.2158	.65443	.04013

a. t cannot be computed because at least one of the groups is empty.

Source: SPSS

Appendix K: Independent samples test - comparison between groups

		Levene's Test for Equalit	y of Variances	t-test for Equality of Means						
									95% Confidence Inter	rval of the Difference
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S	Equal variances assumed	12.063	.001	-1.952	414	.052	0946	.0485	1899	.0006
	Equal variances not assumed			-1.920	293.990	.056	0946	.0493	1916	.0024
NS	Equal variances assumed	30.199	.000	.338	414	.735	.0378	.1118	1820	.2577
	Equal variances not assumed			.363	375.182	.717	.0378	.1042	1671	.2428
STAT	Equal variances assumed	147.098	.000	-22.856	414	.000	-1.1601	.0508	-1.2599	-1.0603
	Equal variances not assumed			-28.003	384.149	.000	-1.1601	.0414	-1.2416	-1.0786
PQ	Equal variances assumed	36.509	.000	5.843	414	.000	.2942	.0503	.1952	.3932
	Equal variances not assumed			5.692	285.791	.000	.2942	.0517	.1925	.3959
HPAA1	Equal variances assumed	13.848	.000	-1.280	414	.201	0866	.0676	2195	.0464
	Equal variances not assumed			-1.358	365.302	.175	0866	.0637	2119	.0388
HPAA2	Equal variances assumed	.168	.682	-1.486	414	.138	1067	.0718	2478	.0344
	Equal variances not assumed			-1.477	303.159	.141	1067	.0723	2489	.0355
HPAA3	Equal variances assumed	5.312	.022	-4.539	414	.000	4186	.0922	6000	2373
	Equal variances not assumed			-4.478	296.767	.000	4186	.0935	6027	2346
HPAA4	Equal variances assumed	.764	.383	-2.807	414	.005	2900	.1033	4931	0870
	Equal variances not assumed			-2.756	292.554	.006	2900	.1052	4971	0829
HPAA5	Equal variances assumed	1.093	.296	776	414	.438	0686	.0883	2422	.1050
	Equal variances not assumed			785	319.138	.433	0686	.0874	2405	.1033
HPAA6	Equal variances assumed	2.026	.155	-2.494	414	.013	2229	.0894	3986	0472

Table:Independent sample test - between groups

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	Equal variances not assumed			-2.474	302.024	.014	2229	.0901	4002	0456
HPAA7	Equal variances assumed	6.811	.009	-4.088	414	.000	3651	.0893	5406	1895
	Equal variances not assumed			-3.943	277.366	.000	3651	.0926	5473	1828
HPAA8	Equal variances assumed	17.678	.000	-5.478	414	.000	5814	.1061	7900	3728
	Equal variances not assumed			-5.145	256.154	.000	5814	.1130	8039	3589
HPAA9	Equal variances assumed	.330	.566	-2.246	414	.025	2188	.0974	4103	0273
i	Equal variances not assumed			-2.245	308.631	.026	2188	.0975	4106	0270
HPR1	Equal variances assumed	.062	.803	167	414	.867	0127	.0758	1616	.1363
l	Equal variances not assumed			163	286.474	.870	0127	.0777	1656	.1403
HPR2	Equal variances assumed	.402	.526	439	414	.661	0346	.0788	1895	.1204
	Equal variances not assumed			434	298.719	.665	0346	.0797	1915	.1223
HPR3	Equal variances assumed	.010	.920	-3.454	414	.001	2946	.0853	4623	1270
	Equal variances not assumed			-3.409	297.227	.001	2946	.0864	4647	1246
HPR4	Equal variances assumed	.237	.626	-2.611	414	.009	2908	.1114	5098	0719
	Equal variances not assumed			-2.611	309.203	.009	2908	.1114	5100	0717
HPR5	Equal variances assumed	11.333	.001	-3.058	414	.002	3484	.1139	5723	1244
	Equal variances not assumed			-3.159	339.756	.002	3484	.1103	5653	1314
HPP1	Equal variances assumed	.114	.735	-1.557	414	.120	1436	.0922	3248	.0376
	Equal variances not assumed			-1.557	308.920	.120	1436	.0922	3250	.0379
HPP2	Equal variances assumed	5.555	.019	-2.848	414	.005	2804	.0984	4738	0869
	Equal variances not assumed			-2.757	280.157	.006	2804	.1017	4805	0802
HPP3	Equal variances assumed	3.873	.050	1.477	414	.140	.1036	.0701	0343	.2415
	Equal variances not assumed			1.499	322.829	.135	.1036	.0691	0324	.2396
HPP4	Equal variances assumed	.658	.418	-1.417	414	.157	1220	.0860	2911	.0472
	Equal variances not assumed			-1.399	297.385	.163	1220	.0872	2935	.0496
HPNA1	Equal variances assumed	.515	.473	-2.930	414	.004	3107	.1061	5192	1022

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	Equal variances not assumed			-2.908	302.340	.004	3107	.1069	5210	1005
HPNA2	Equal variances assumed	.195	.659	-3.764	414	.000	4085	.1085	6219	1952
	Equal variances not assumed			-3.771	311.004	.000	4085	.1083	6217	1954
HPNA3	Equal variances assumed	.260	.611	-3.153	414	.002	3179	.1008	5161	1197
	Equal variances not assumed			-3.105	295.137	.002	3179	.1024	5194	1164
HPNA4	Equal variances assumed	.952	.330	-2.087	414	.038	2259	.1083	4387	0131
	Equal variances not assumed			-2.115	321.612	.035	2259	.1068	4361	0158
HPNA5	Equal variances assumed	3.589	.059	-4.133	414	.000	3796	.0919	5602	1991
	Equal variances not assumed			-4.091	299.861	.000	3796	.0928	5623	1970
HPNA6	Equal variances assumed	5.015	.026	-3.587	414	.000	3720	.1037	5758	1682
	Equal variances not assumed			-3.564	303.033	.000	3720	.1044	5774	1666
HPNA7	Equal variances assumed	2.222	.137	-3.756	414	.000	4353	.1159	6631	2075
	Equal variances not assumed			-3.697	294.898	.000	4353	.1177	6670	2036
HPNA8	Equal variances assumed	3.002	.084	-2.934	414	.004	3440	.1172	5745	1136
	Equal variances not assumed			-2.889	294.955	.004	3440	.1191	5784	1097
HPNA9	Equal variances assumed	1.116	.291	-2.063	414	.040	1981	.0960	3869	0093
	Equal variances not assumed			-2.014	287.690	.045	1981	.0984	3917	0045
HPNA10	Equal variances assumed	.718	.397	-1.856	414	.064	2001	.1078	4119	.0118
	Equal variances not assumed			-1.907	334.698	.057	2001	.1049	4064	.0063
HPAC1	Equal variances assumed	.342	.559	-1.856	414	.064	1531	.0825	3153	.0091
	Equal variances not assumed			-1.890	326.239	.060	1531	.0810	3125	.0063
HPAC2	Equal variances assumed	2.850	.092	.454	414	.650	.0429	.0944	1428	.2285
	Equal variances not assumed			.465	332.203	.642	.0429	.0921	1384	.2241
HPAC3	Equal variances assumed	1.945	.164	-1.895	414	.059	1624	.0857	3308	.0060
	Equal variances not assumed			-1.925	323.626	.055	1624	.0844	3283	.0036
HPAC4	Equal variances assumed	.038	.846	-2.293	414	.022	1904	.0830	3536	0272

I				I	1				1	
	Equal variances not assumed			-2.297	310.717	.022	1904	.0829	3535	0273
HPAC5	Equal variances assumed	6.935	.009	-3.355	414	.001	3245	.0967	5146	1343
	Equal variances not assumed			-3.273	287.137	.001	3245	.0991	5196	1294
HPAC6	Equal variances assumed	7.937	.005	-3.396	414	.001	3184	.0938	5028	1341
	Equal variances not assumed			-3.283	279.285	.001	3184	.0970	5094	1275
HPU1	Equal variances assumed	10.168	.002	-3.979	414	.000	3988	.1002	5959	2018
	Equal variances not assumed			-3.789	266.893	.000	3988	.1053	6061	1916
HPU2	Equal variances assumed	7.153	.008	-5.824	414	.000	5761	.0989	7705	3817
	Equal variances not assumed			-5.644	281.269	.000	5761	.1021	7770	3752
HPU3	Equal variances assumed	15.071	.000	-5.716	414	.000	5187	.0907	6971	3404
	Equal variances not assumed			-5.329	250.645	.000	5187	.0973	7105	3270
HPACC1	Equal variances assumed	.004	.947	1.421	414	.156	.1131	.0796	0433	.2695
	Equal variances not assumed			1.439	320.885	.151	.1131	.0786	0415	.2677
HPACC2	Equal variances assumed	.022	.883	266	414	.790	0220	.0826	1843	.1404
	Equal variances not assumed			264	302.162	.792	0220	.0832	1857	.1418
HPACC3	Equal variances assumed	.393	.531	-2.539	414	.011	2156	.0849	3826	0487
	Equal variances not assumed			-2.494	292.792	.013	2156	.0865	3858	0455
HPACC4	Equal variances assumed	.322	.571	-1.107	414	.269	0890	.0804	2471	.0691
	Equal variances not assumed			-1.071	279.751	.285	0890	.0831	2527	.0746
HPACC5	Equal variances assumed	.416	.519	145	414	.884	0121	.0831	1754	.1513
	Equal variances not assumed			144	303.520	.885	0121	.0836	1766	.1524
OQ	Equal variances assumed	7.555	.006	-5.067	414	.000	3394	.0670	4711	2077
	Equal variances not assumed			-5.051	306.255	.000	3394	.0672	4716	2072
S1	Equal variances assumed	1.569	.211	-4.454	414	.000	3202	.0719	4615	1789
	Equal variances not assumed			-4.294	276.906	.000	3202	.0746	4670	1734
S2	Equal variances assumed	1.332	.249	-2.504	414	.013	2009	.0802	3586	0432

	Equal variances not assumed			-2.503	308.713	.013	2009	.0803	3588	0430
S3	Equal variances assumed	.261	.610	-2.815	414	.005	2446	.0869	4154	0738
	Equal variances not assumed			-2.833	314.955	.005	2446	.0864	4145	0747
S 4	Equal variances assumed	3.031	.082	045	414	.964	0044	.0962	1935	.1847
	Equal variances not assumed			047	337.095	.963	0044	.0934	1881	.1794
S5	Equal variances assumed	1.965	.162	-2.970	414	.003	2660	.0896	4420	0899
	Equal variances not assumed			-2.912	291.334	.004	2660	.0913	4457	0862
L1	Equal variances assumed	.363	.547	-2.626	414	.009	2354	.0897	4117	0592
	Equal variances not assumed			-2.683	329.386	.008	2354	.0877	4081	0628
L2	Equal variances assumed	.250	.618	-2.106	414	.036	2078	.0987	4018	0138
	Equal variances not assumed			-2.037	279.758	.043	2078	.1020	4086	0070
L3	Equal variances assumed	.000	.994	-1.315	414	.189	1075	.0817	2682	.0532
	Equal variances not assumed			-1.245	262.487	.214	1075	.0863	2774	.0625
L4	Equal variances assumed	.311	.577	-3.041	414	.003	2406	.0791	3961	0851
	Equal variances not assumed			-2.861	257.558	.005	2406	.0841	4062	0750
L5	Equal variances assumed	.803	.371	-2.346	414	.019	1955	.0833	3593	0317
	Equal variances not assumed			-2.273	281.278	.024	1955	.0860	3648	0262
JEXP1	Equal variances assumed	10.282	.001	3.624	414	.000	.3622	.0999	.1657	.5587
	Equal variances not assumed			3.740	338.962	.000	.3622	.0968	.1717	.5527
JEXP2	Equal variances assumed	.040	.842	.673	414	.501	.0601	.0892	1153	.2354
	Equal variances not assumed			.669	303.182	.504	.0601	.0898	1166	.2367

Source: SPSS