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Article

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DEVELOPMENT OF AN INSTRUMENT FOR MEASURING STUDENT SATISFACTION IN BUSINESS EDUCATIONAL INSTITUTIONS

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Abstract

As the number of prospective students decreases and competition intensifies, student satisfaction should be a core element of the universities' marketing strategy. Students' satisfaction is influenced by the degree to which higher education institutions meet or exceed their expectations. Higher education managers in general and business higher education managers in particular need to determine the students' level of satisfaction in order to assess their performance. This, however, is difficult to achieve because satisfaction is an abstract concept and no clear consensus exists over its definition and measurement. Although, on account of education's complexity and peculiarities, the investigation of satisfaction with educational services has been laborious, the literature review reveals a growing number of papers dealing with this issue. These papers consider the factors affecting satisfaction mostly as individual coefficients and ignore the latent relationships between constructs. However, since the determinants of partial student satisfaction simultaneously manifest in the overall satisfaction, it may be considered that an individual approach to them, would partially cover the issue being studied. For this reason, the purpose of this paper is to develop a model for measuring student satisfaction with business education services, a model which should be approached holistically and whose latent structure should be taken into account. The proposed measurement tool, based on the study of the literature, was tested on the students of a business educational institution and the results confirm the goodness-of-fit, reliability and validity of the model. The developed tool encompasses a number of factors that allow the assessment of student satisfaction with a wide range of services provided by business education institutions and relate to: educational process (syllabus, training of teaching staff, examination policy), administrative staff, admission process (information, staff), management of the faculty, image of the faculty, library, general information, cafeteria, campus climate, tutors, collaboration between faculty and business environment, international cooperation, leisure activities supported by the faculty.

Keywords: student satisfaction, educational marketing, satisfaction measurement tool, satisfaction determinants, business educational institutions

JEL classification: I21, M31.

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Introduction

Educational and health care services represent a barometer of a nation's economic, social and cultural development (Săvoiu *et al*, 2014) and the quality of higher education in general and of business higher education in particular exerts an overwhelming influence on the regional and national economic development (Roşca *et al*, 2008), because a business higher education yields more human capital and highly-qualified (Bringula and Basa, 2010; Pelău *et al*, 2011; Toma and Naruo, 2009). Although the Bologna Process places much emphasis on quality assurance in higher education institutions, no consensus has been reached so far over the definition of quality of higher education and no unique tool for measuring it has been developed either (Sârbu *et al*, 2009). On the other hand, there seems to be a consensus on the existence of a positive relationship between the perception of educational services quality and student satisfaction (Alves and Raposo, 2010; Ham and Hayduk, 2003; Farahmandian *et al*, 2013).

Universities operate into an ever-changing society and environment and, therefore, have to adapt the role of education to suit these changes (Dinu, 2007; Romero *et al*, 2011). The background against which higher education institutions operate at present, exhibits several trends: intensification of competition, massification and generalization of higher education, internationalization of education and research, extensive demographic transformations, development of life-long learning process, diffusion and use of information and communication technology in the teaching process, increase of university autonomy, development of private and cross-border education, lower funding from government and internal financing from research and students (Brătianu, 2002; Casidy, 2013; DesJardins, 2002; DeShields, 2005; Garrido, 2002; Russel, 2005; Toma and Naruo, 2009).

In light of these trends, business higher education managers should understand that ensuring a high level of satisfaction by providing quality educational services is a must in order to retain students, and needs to be an ongoing concern (Li-Wei, 2005). To achieve this objective, the periodical assessment of what factors are important to students, their level of satisfaction with these factors and the institutional performance are of paramount importance.

Ensuring satisfaction with educational services is important because research shows that student satisfaction is the factor affecting the most student loyalty (Helgesen and Nesset, 2007; Brown and Mazzarol, 2009), influencing the increase of students' participation in the educational process (Finney and Finney, 2010), the continuation of the education and whether or not students will recommend the education institution to other people (DeShields *et al*, 2005). Moreover, studies show dissatisfaction determines a fall in students' learning performance, leads to university dropout (Aldridge and Rowley, 1998) and to complaints voiced among members of their entourage or on the online environment (Arif *et al*, 2013; Fitzpatrick *et al,* 2012). Given these considerations, some authors even talk about the need to adopt a consumer-centric approach in the educational services, a principle which is now widely used within for-profit institutions (DeShields *et al*, 2005; Maddox and Nicholson, 2008); bus such a perspective is not without critics (Maddox and Nicholson, 2008).

1. Literature review

The analysis of the literature reveals a lack of consensus over the conceptualization and measurement of satisfaction with services in general (Radomir *et al,* 2012; Souca, 2011;

Tăchiciu *et al*, 2011) and with educational services in particular (Navarro *et al,* 2005; Yildiz and Kara, 2009). Therefore, it is necessary to develop a theoretical framework and a methodology to study student satisfaction with educational services (Elliot and Healy, 2001; Sultan and Wong, 2012).

Related to the conceptualization of student satisfaction, two notable definitions have been found in the literature, that proposed by Elliot and Healy (2001) who see student satisfaction as a long-term attitude displayed after the assessment of educational experience, and that of Carey et al (2002) who argue that students' satisfaction refers to their experiences and perceptions throughout all the academic years.

Regarding student satisfaction measurement, the research scales are mainly based on the SERVQUAL model (Stodnick and Rogers, 2008), the SERVPERF model (Li and Kaye, 1998), the HEdPERF model (Abdullah, 2005) or the ECSI model (Brown and Mazzarol, 2009). Most of the studies in this field developed scales or just items closely related to the educational process, in order to cover aspects such as:

Satisfaction with courses, syllabi, language used during teaching, information being up-to-date and the teaching process (Abdullah, 2005; Aldridge and Rowley, 1998; Ardi *et al*, 2012; Arif *et al*, 2013; DeShields *et al*, 2005; Gruber *et al*, 2010; Elliot and Healy, 2001; Langrosen *et al*, 2004; Li-Wei, 2005; Munteanu *et al*, 2010; O'Driscoll, 2012; Popa *et al*, 2011; Telford and Masson, 2005; Toth *et al*, 2013; Wilkins and Balakrishnan, 2013; Arnerić *et al,* 2010; Maddox and Nicholson, 2008; Sojkin *et al*, 2012);

- Satisfaction with the tranining, availability and involvement of the teaching staff (Abdullah, 2005; Aldridge and Rowley, 1998; Ardi *et al*, 2012; Arif *et al,* 2013; DeShields *et al*, 2005; Gruber *et al*, 2010; Helgesen and Nesset, 2007; Langrosen *et al,* 2004; Li-Wei, 2005; O'Driscoll, 2012; Navarro *et al,* 2005; Sayeda *et al*, 2010; Sultan and Wong, 2012; Telford and Masson, 2005; Toth *et al*, 2013; Wilkins and Balakrishnan, 2013; Arnerić *et al,* 2010; Maddox and Nicholson, 2008; Sojkin *et al*, 2012);

- Satisfaction with student assessment process, objectivity, publication of results being rapid (Aldridge and Rowley, 1998; Ardi *et al*, 2012; Helgesen and Nesset, 2007; Li-Wei, 2005; Sultan and Wong, 2012; Toth *et al*, 2013);

- Satisfaction with the campus atmosphere and climate, the equal and fair treatment of students, with the focus on students' needs (Aldridge and Rowley, 1998; Arif *et al*, 2013; Gruber *et al*, 2010; Elliot and Healy, 2001; Helgesen and Nesset, 2007; Munteanu *et al*, 2010; Navarro *et al,* 2005; Sultan and Wong, 2012; Wilkins and Balakrishnan, 2013; Arnerić *et al,* 2010; Sojkin *et al*, 2012);

- Satisfaction with library number of available seats, equipment, working hours (Ardi *et al*, 2012; Aldridge and Rowley, 1998; Gruber *et al*, 2010; Langrosen *et al,* 2004; Li-Wei, 2005; O'Driscoll, 2012; Telford and Masson, 2005; Sultan and Wong, 2012; Tsinidou *et al*, 2010; Wilkins and Balakrishnan, 2013).

A smaller number of studies dealt with scales or items referring to:

- Satisfaction with vocational guidance services and with the institution's concern for students' professional development (Aldridge and Rowley, 1998; Langrosen *et al,* 2004; Li-Wei, 2005; Munteanu *et al*, 2010; Sayeda *et al*, 2010; Sultan and Wong, 2012; Maddox and Nicholson, 2008; Sojkin *et al*, 2012);

- Satisfaction with the institution's image, reputation and distinction, the way of promoting its image (Arnerić *et al,* 2010; Alves and Raposo, 2010; Brown and Mazzarol, 2009; Gruber *et al*, 2010; Sojkin *et al,* 2012);

- Satisfaction with the administrative staff, staff availability, waiting time, quality of information provided by the administrative staff (Alves and Raposo, 2010; Brown and Mazzarol, 2009; Casidy, 2013; Gruber *et al*, 2010; Li-Wei, 2005; Sultan and Wong, 2012; Arnerić *et al,* 2010);

- Satisfaction with the admission process, the admission staff, the admission information provided to students on various media such as brochures, websites or telephone (Helgesen and Nesset, 2007; Munteanu *et al*, 2010; Navarro *et al,* 2005; Sultan and Wong, 2012);

- Satisfaction with general information provided by the institution (Gruber *et al*, 2010);

- Satisfaction with the tutors, their accessibility and the help they provide in setting academic objectives (Abdullah, 2005; Gruber *et al*, 2010; O'Driscoll, 2012; Telford and Masson, 2005);

- Satisfaction with the collaboration between faculty and business environment, the existence of internships in companies and the opportunity to take part in professional competitions (Langrosen *et al,* 2004; O'Driscoll, 2012; Sayeda *et al*, 2010; Tsinidou *et al*, 2010; Arnerić *et al,* 2010);

- Satisfaction with student life, with the existing activities, sporting competitions and leisure facilities, provided or not by the institution (Arif *et al*, 2013; Helgesen and Nesset, 2007; Wilkins and Balakrishnan, 2013;Arnerić *et al,* 2010;Gruber *et al*, 2010; Sojkin *et al,* 2012);

- Satisfaction with the institution's cafeteria, number of available seats, staff amiableness and cleanliness (Aldridge and Rowley, 1998; Gruber *et al*, 2010; Helgesen and Nesset, 2007; Telford and Masson, 2005; Sultan and Wong, 2012; Sojkin *et al,* 2012);

- Satisfaction with the relationship between students and the faculty's management, with the management's accessibility, attitude to students and with their prompt action taken to solve problems (Abdullah, 2005, Ardi *et al*, 2012);

- Satisfaction with the availability international cooperation and mobility programs, their being announced on time and the clarity of information provided (Tsinidou *et al*, 2010; Arif *et al*, 2013);

The studies on student satisfaction have yielded different results. Thus, some researches show that satisfaction with the main elements of the educational process such as the quality of courses (Wilkins and Balakrishnan, 2013), effectiveness of instructional process (Elliot and Healy, 2001; Helgesen and Nesset, 2007), course organization (Navarro *et al*, 2005), interaction with students (O'Driscoll, 2012), the focus on student's needs (Elliot and Healy, 2001) and campus climate (Elliot and Healy, 2001) are important predictors for the overall satisfaction. Other studies such as that of Li-Wei (2005), reveal that the overall impression of the institution and the overall impression of the quality of education are significant predictors for the overall satisfaction of the education, above the other more

specific educational service dimensions. Also, Alves and Raposo (2010) found that the image of the institution is the most influential factor affecting student satisfaction, while Brown and Mazzarol (2009) showed that the connection between institutional image and student satisfaction is stronger than that between student satisfaction and the perceived quality of staff and facilities. On the other hand, the authors Munteanu *et al*, (2010) demonstrated that there are differences between factors affecting the satisfaction among high-performing students and those affecting the satisfaction among low-performing students.

It may be stated, therefore, that student satisfaction with educational services is a multidimensional construct, for whose understanding were initiated academic efforts on the part of business higher education institutions (DeShields *et al*, 2005; Helgesen and Nesset, 2007; Munteanu *et al*, 2010; Navarro *et al*, 2005; O'Driscoll, 2012; Popa *et al*, 2011; Săvoiu *et al*, 2014; Tsinidou *et al*, 2010), but which did not yield a universally accepted measuring tool.

Considering the previous statements, the objective of this study is to develop an instrument to measure student satisfaction with business higher education services, integrating the factors mentioned in the literature review. As the factors affecting the partial satisfaction manifest simultaneously in students overall satisfaction, it is wanted to establish a measurement model that takes into account the latent structure, the possible relationships between the constructs. It has to be emphasized that the purpose of the paper does not include determining the intensity of the relationships between variables and overall satisfaction, as these issues are frequently addressed in the literature.

2. Research methodology

To achieve the objective of the paper, the authors have chosen to conduct a quantitative research. Thus, the method used to collect data was the personal structured survey and the data-gathering instrument was the questionnaire. The statistical universe of the research was represented by the undergraduate students from the Faculty of Economics and Business Administration of Cluj-Napoca, Romania's second largest university city. For the sampling process the quota sampling was used, thus the sample structure is identical with that of student population in terms of year of study and specialization. In view of the local concentration of the population, data collection was conducted on the premises of the faculty, a total of 411 valid questionnaires being obtained.

The data were processed using SPSS and AMOS programs, aiming at testing a measuring tool that integrates a number of factors against which student satisfaction is assessed. To this effect, statements were formulated concerning respondents' level of satisfaction with a number of factors deemed relevant to business educational institutions. The items were assessed on a six-point rating scale, with the number of pro alternatives equaling the number con alternatives. Thus, 1 means "not at all satisfied" and 6 means "very satisfied". A decision was made to use a scale having no neutral or mid-point in order to avoid the concentration of answers on this variant.

3. Sample characteristics

The analysis of the sample in terms of students' year of study reveals relatively close percentages: 35.39% of respondents are first-year students, 31.27% are second-year

students and 33.34% are third-year students. As regards student enrolment, 44.5% of respondents are students holding state-funding places while 55.5% hold fee-paying places. In terms of socio-demographic description, of the total sample, 64.7% are female and 35.3% male, with an average age of 20.63 years.

4. Research findings

Drawing on the studies published in the literature, a measuring tool was developed in which a number of factors were integrated to assess the level of student satisfaction with various services provided by business educational institutions, and that relate to: educational process (syllabus, training of teaching staff, examination policy), administrative staff, admission process (information, staff), management of the faculty, image of the faculty, library, general information, cafeteria, campus climate, tutors, collaboration between faculty and business environment, international cooperation, leisure activities supported by faculty. The scales used to measure the factor influence were not taken from existing research, but were specifically developed for this study.

In order to test the model and to measure its goodness-of-fit was chosen the confirmatory factor analysis (CFA) technique. According to Brown (2006), the confirmatory factor analysis is a type of structural modeling that deals with measurement models and which currently is used frequently in scales development, in order to assess the latent structure of the tool.

Problems may arise in conducting confirmatory factor analysis when some values are missing (Janssens *et al*, 2008). For this reason, the missing values were replaced with the means of the items in the case of 11 questionnaires (recommendation made by Janssens *et al*, 2008).

The initial results of the model indicated the existence of some problems with respect to the model's reliability and validity, thereby calling for scale purification. The checking of the standardized factor loadings of the construct indicators led to the successive removal of 4 items. The new refined scale and the measurement model resulted from data processing of the refined scale with confirmatory factor analysis, are presented in Table no. 1. In the model prevail the first-order latent variables, the only second-order latent variables are "admission process" and "educational process".

The structure of each first-order construct can be seen in Table no. 1. As for the structure of second-order latent variables, the items pertaining to the satisfaction with "admission information" refer to the satisfaction with the information published on brochures, posted online or sent by phone. The items pertaining to the satisfaction with the "admission staff" capture the satisfaction with the amiableness of enrollment staff and of those who provides information, with the level of information, of serviceability and capacity to answer to potential students' needs of the admission staff. In the case of the "syllabus" construct, the items record the satisfaction with the value of syllabi, their interactivity, teaching quality, the level of training provided to specialty courses, and the focus of seminars on case studies. The satisfaction with the "evaluation policy" is recorded through items dealing with the evaluation objectivity, the rapidness with which grades are communicated and the level of attention paid to students' dissatisfaction with the evaluation process. The construct measuring the satisfaction with "teaching staff qualification" is made up of items referring to the satisfaction with professors' ability to explain, the rapidness with which they provide

answers and with students being provided with manuals and workbooks. Consequently, all first-order latent constructs are measured by means of at least three items, except for the construct measuring the satisfaction with "connection with business environment". However, all proposed factors were maintained.

Table no. 1 presents the correlations between the constructs and the indicators considered. One can notice that the values obtained for factor loadings exceed the acceptability limit of 0.5, respectively the ideal limit of at least 0.7, thus confirming the existence of a strong relationship between indicators and the associated construct (Hair *et al*, 2009; Janssens *et al*, 2008).

Table no. 1: Factor structure and loadings

Factor	**Indicator**	**λ**
Admission	Admission information	0,892
	Admission staff	0,861
General information	Information about the faculty	0,771
	Information about academic mobility	0,743
	Information about the working hours	0,778
	Information about the counseling schedule	0,722
Cafeteria	Number of available seats	0,752
	Staff amiableness	0,707
	Cleanness	0,779
Educational process	Syllabus	0,975
	Teaching staff qualification	0,807
	Evaluation policy	0,863
Administrative staff	Waiting time	0,843
	Information received	0,877
	Staff amiableness	0,772
Faculty management	Attitude	0,776
	Accessibility	0,702
	Promptness	0,744
Library	Number of available seats	0,722
	Equipment	0,801
	Working hours	0,776
Campus climate	Equal treatment	0,899
	Fair treatment	0,861
	"I feel welcome"	0,786
Image of the faculty	Promotion of the image of the faculty	0,759
	Fame of the faculty	0,798
	Reputation of the faculty	0,860
Tutors	Accessibility	0,786
	Concern for the students' professional development	0,928
	Help provided in setting academic objectives	0,944
	Level of cognizance	0,777
Connection with business environment	Internships	0,841
	Participation in professional competitions	0,870

Factor	Indicator	λ
International cooperation	Mobilities announced on time	0,827
	Available information	0,862
	Clear information	0,830
Leisure activities	On-campus activities	0,773
	Participation in sporting competitions	0,789
	Leisure facilities	0,755

Source: own calculations

Regarding the goodness-of-fit of the model, the literature review shows that no consensus exists over its overall assessment (Hooper *et al*, 2008), but is recommended the simultaneous use of several indicators. To this effect, Hair et al (2009) propose the use of a parsimonious fit index (eg. CMIN/df), of at least one absolute index (eg. GFI, RMSEA, AGFI, PCLOSE) and of an incremental index (eg. CFI, TLI), respectively of a good fit index (eg. CFI, GFI, TLI) and of a poor fit index (eg. RMSEA, SRMR). The same authors highlight that no consensus exists over the acceptable limits of the goodness-of-fit indices that should differentiate between a good model and a bad one. The values of goodness-of-fit indices for the current measurement model are outlined in Table no. 2. Therefore, as can be seen the ratio CMIN/df = 2.085, a value below the maximum threshold of 5 shown in some studies, but also very close to the maximum limit of 2 suggested by other studies (Hooper *et al*, 2008). The CFI indicator is 0.899, thereby reaching the threshold of 0.9 proposed by various authors such as Hooper *et al* (2008) or Hair *et al* (2009). As RMSEA = 0.051, its value is in the 0.05-0.08 range and is, therefore, the value is adequate. The same holds true for PCLOSE, that exceeds the 0.05 limit, with a value of 0.196 (Hooper *et al*, 2008; Hair *et al*, 2009; Janssens *et al*, 2008). The AGFI index takes on the value 0.780, being close to the minimum limit of 0.8 proposed by the literature (Hooper *et al*, 2008). The value of the GFI index is 0.809, below the acceptable threshold of at least 0.9 (Hair *et al*, 2009), however, due to its high sensitivity, it is not recommended nor used by many authors (Hooper *et al*, 2008). It is to be noted that the values of most indices are within the values minimum required in order to be considered accepted in the literature. At the same time, as the models' goodness-of-fit is influenced by its complexity and by the sample size, in the case of models tested on large samples, as is in this ones, the limits of the goodness-of-fit indices shouldn't be respected so strictly (Hair *et al*, 2009). In light of these aspects, the resulted measurement model may be deemed stable in this regard.

Table no. 2: Measurement model Goodness-of-fit indices

Index	Recorded value
CMIN/df	2,085
GFI	0,809
AGFI	0,780
CFI	0,899
RMSEA	0,051
PCLOSE	0,196

Source: own calculations

In addition to the overall assessment of models' goodness-of-fit, the literature recommends that model validity and reliability should be tested, in order to verify the level of the measurement error, an aspect met in any measurement (Hair *et al*, 2009, Byrne, 2010).

Testing the reliability of measurement variables, means checking whether the individual items are consistent with the measurements (Hair *et al*, 2009). Can be recalled that, according to Hair *et al* (2009), confirmatory factor analysis leads to a better estimation of the tool's reliability in relation to the Alpha coefficient, because the assessment is made by means of the composite reliability (Fornell and Larcker, 1981). For the proposed model, the values of each construct for the composite reliability (CR) are showed in Table no. 3. It may be noticed that all these values exceed the minimum threshold of 0.7 proposed in the literature, thereby bespeaking a good reliability (Hair *et al*, 2009). However, a tool cannot be deemed adequate solely on the basis of reliability (Hair *et al*, 2009), as the study of validity is also needed to this effect.

One type of validity frequently proposed in the literature to test a model is convergent validity (Hair *et al*, 2009; Janssens *et al*, 2008). Convergent validity checks the extent to which two different items of the same latent variable confirm each other (Janssens *et al*, 2008). It can be assessed by means of average variance extracted (AVE), where a value higher than 0.5 is evidence of this type of validity (Fornell and Larcker, 1981; Hair *et al*, 2009; Janssens *et al*, 2008). In Table no. 3, that presents the values taken by each construct in terms of convergent validity, can be observed that the smallest average variance extracted is 0.550. Therefore, it may be stated that the convergent validity of the model is confirmed.

Table no. 3: Reliability and convergent validity

Factor	Composite reliability (CR)	Average variance extracted (AVE)	Maximum shared variance (MSV)	Average shared variance (ASV)
Admission process	0,869	0,768	0,460	0,267
General information	0,840	0,568	0,267	0,159
Cafeteria	0,790	0,557	0,239	0,136
Educational process	0,915	0,782	0,460	0,296
Administrative staff	0,870	0,692	0,306	0,141
Faculty management	0,785	0,550	0,375	0,217
Library	0,811	0,588	0,226	0,121
Campus climate	0,886	0,722	0,434	0,214
Image of faculty	0,848	0,651	0,281	0,142
Tutors	0,920	0,743	0,137	0,086
Connection with business environment	0,845	0,732	0,452	0,198
International cooperation	0,877	0,704	0,285	0,160
Leisure activities	0,816	0,597	0,324	0,208

Source: own calculations

Testing model validity also entails confirming discriminant validity, or in other words, verifying that each two constructs are not perfectly (or too strongly) correlated (Hair *et al*, 2009; Janssens *et al*, 2008). To confirm discriminant validity, the square root of average variance extracted for each construct must exceed the bivariate correlation between that construct and the other constructs of the measurement model (Hair *et al*, 2009; Janssens *et al*, 2008).

For this study, the values of each construct for the testing of discriminant validity are presented in Table no. 4. As can be noticed, the square root of average variance extracted (on the diagonal) exceeds the inter-item correlations for each construct, thereby confirming the discriminant validity of the model. Discriminant validity is also confirmed by the fact that the values of maximum shared variance and average shared variance for each construct, are smaller than the value of the corresponding average variance extracted (Hair *et al*, 2009).

Table no. 4: Discriminant validity

	AP	GI	CA	EP	AS	FM	LI	CC	IF	TU	CB	IC	LA
AP	*0,877*												
GI	0,473	*0,754*											
CA	0,489	0,449	*0,747*										
EP	0,678	0,517	0,405	*0,884*									
AS	0,553	0,261	0,348	0,451	*0,832*								
FM	0,612	0,437	0,476	0,592	0,512	*0,741*							
LI	0,475	0,225	0,392	0,430	0,393	0,284	*0,767*						
CC	0,502	0,459	0,372	0,659	0,377	0,550	0,272	*0,850*					
IF	0,455	0,320	0,318	0,530	0,232	0,341	0,320	0,519	*0,807*				
TU	0,370	0,327	0,116	0,350	0,227	0,334	0,154	0,360	0,177	*0,862*			
CB	0,469	0,440	0,317	0,672	0,309	0,448	0,308	0,465	0,431	0,368	*0,856*		
IC	0,523	0,329	0,284	0,534	0,346	0,364	0,400	0,395	0,279	0,270	0,435	*0,839*	
LA	0,537	0,433	0,307	0,585	0,342	0,505	0,380	0,488	0,424	0,315	0,536	0,511	0772

Notation: AD- admission process, GI-General information, CA-cafeteria, EP-educational process, AS-administrative staff, FM-faculty management, LI-library, CC-campus climate, IF-image of faculty, TU-tutors, CB-connections with business environment, IC-international cooperation, LA-leisure activities
Source: own calculations

As one can easily notice, in terms of goodness-of-fit, reliability and validity the developed model meets the exigency standards imposed in the literature.

Conclusions

The study aims to develop a measurement tool which should integrate various predictors of overall student satisfaction with services provided by business education institutions, which are dealt with in the literature: satisfaction with the educational process (syllabus, teacher qualification, evaluation policy), with the administrative staff, the admission process (information and staff), the faculty management, the image of faculty, library, the general information provided, cafeteria, campus climate, tutors, relations with businesses, international cooperation, leisure activities supported by the faculty. The obtained results confirm the goodness-of-fit, reliability and validity of the model. Mention must be made that it was not the purpose of the study to identify the factors' level of influence on the

overall student satisfaction for the following reasons: a) this aspect was frequently tested in the literature; b) the relevance of identifying the most significant factors is limited because, as the literature shows, major differences exist in terms of factor significance across studies, cultures and institutions; c) in light of the trends in business higher education, managers should not focus only on factors with the highest impact but should adopt an exhaustive approach and target all factors contributing to the educational experience.

As regards the theoretical implications of this study, it should be noted that only a very limited number of studies that take into consideration the latent structure of the models established to measure student satisfaction. The model proposed in the current study it is comprehensive and goes beyond the limits that characterize the existing papers. In this regard, we believe that an approach to the determinants of student satisfaction as a unitary construct is of paramount importance because they manifest simultaneously in the overall satisfaction and can relate to latent level. In addition, to support the claims, we recall that the papers identified in the literature in the field of business education, propose models and analysis that: a) address the determinants of satisfaction as a set of individual factors, ignoring the latent relationships between constructs; eg. O'Driscoll (2012); b) aim to test only the intensity of the relationships between different satisfaction predictors and overall satisfaction of students; eg. Arnerić *et al* (2010); Navarro *et al* (2005); O'Driscoll (2012), DeShields *et al.* (2005), c) want to determine the intensity of the relationship between satisfaction and different concepts; eg: the authors Maddox and Nicholson (2008) and Camgoz-Akdag and Selim Zaim (2012) verify the intensity of the relationship between overall satisfaction and perceived quality of some determinants or services; Dado *et al* (2012) consider additionally the relationship between overall satisfaction and the behavioral intention; Phadke (2011) focuses on the relationship between overall satisfaction and loyalty, perceived value, educational service quality, emotional involvement of students and fairness of taxation). Also, it has to be emphasized that some analyzes and models are not validated or validated only partially; e.g. Sojkin *et al*(2011) do not validate the determinants of satisfaction, Arnerić *et al (*2010) partially test the model reliability, DeShields *et al.* (2005) partially test the model, and Douglas *et al*(2008) only creates a conceptual model. Other studies are based on data analysis methods distinct than those proposed in the current study; eg. Munteanu *et al*(2010) establish the internal consistency of each construct through Cronbach's Alpha coefficient, but do not determine the overall consistency; O'Driscoll (2012) analyzes data through Principal Component Analysis and multiple regressions, while Sojkin *et al*(2011) choose EFA analysis and Independent T-Test. In addition, although the very few existing models adopted a multidimensional approach to the concept of satisfaction, the number of predictos considered is low, excluding variables repeatedly confirmed by other studies in the same field; eg. Arnerić *et al*(2010) consider the variables courses curriculum, feeling of acceptance, practical implementation of learned skills acquired by students and organization of teaching process; Sorjkin *et al*(2011) measures satisfaction in terms of pragmatism of knowledge, social conditions, faculty's educational and research achievements, educational facilities, courses offered and professional advancement; in the model of O'Driscoll(2012) predictors are the college facilities, academic support, feedback, organization communication, welfare support and placement support; and in that of Navarro *et al*(2005) are included the teaching methods, teaching staff, enrolment, infrastructure and administration.

The study has also methodological contributions in that a measurement tool with a reasonable scale size was obtained which reduces the difficulty of data collection typical of

large scales (with a great number of items). Consequently, such a scale should encourage researchers in the educational field to test the relationships with other constructs that the literature associates with student satisfaction (loyalty, recommendation intention, opinions of the management, institutional performance, individual performance etc.), thus leading to more complex investigations.

The main implication for business higher education managers is that through the variables incorporated and its size, the developed instrument makes it possible to adopt a holistic perspective to student satisfaction. Implementation within regular research, offers the possibility to create an organizational climate and culture where all participants in the educational process to provide services with high quality standards.

In future, the authors intend to use the model to test the connections between the identified constructs and other concepts that the literature associates with satisfaction, such as loyalty (attendance and completion of Bachelor's degree programs , further applying for MA or PhD studies, participation in alumni organizations) or the intention to recommend the institution to other people. At the same time, the authors wish to resume the analyses within some longitudinal, annual research, in order to verify the long-term stability of the measurement model. Other future attempts relate to the authors' desire to test the model in several national business higher education institutions, and draw comparisons between public and private business educational institutions, or international comparisons between public business educational institutions.

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References

Abdullah, F., 2005. The Development of HEdPERF: A New Measuring Instrument of Service Quality for the Higher Education Sector. *International Journal of Consumer Studies*, 30 (6), pp. 569-581.

Aldridge, S. and Rowley, J., 1998. Measuring Customer Satisfaction in Higher Education. *Quality Assurance in Higher Education*, 6(4), pp. 197-204.

Alves, H. and Raposo M., 2010. The Influence of University Image on Student Behavior. *International Journal of Educational Management*, 24 (1), 73-85.

Arnerić, J., Talaja, A. and Prka, A., 2010. Developing Multivariate Confirmatory Technique in Measuring Students Satisfaction with Education Process. *Croatian Operational Research Review,* 1 (1), pp.192-201.

Ardi, R., Hidayatno A. and Zagloel, T.Y.M.,2012.Investigating Relationship among Quality Dimensions in Higher Education. *Quality Assurance in Education*, 20 (4), pp. 408-428.

Arif, S., Ilyas, M. and Hameed, A., 2013. Student Satisfaction and Impact of Leadership in Private Universities. *The TQM Journal*, 25 (4), pp.399-416.

Brătianu, C., 2002. *Paradigmele managementului universitar*. Bucureşti: Editura Economică.

Byrne, B.M., 2010. *Structural Equation Modeling with Amos –Basic concepts, applications and programming*. 2nd edition. New York:Taylor and Francis Group.

Bringula, B.P. and Basa R.S., 2010. Institutional Image Indicators of Three Universities: Basis for Attracting Prospective Entrants. *Educational Research for Policy and Practice,*10 (1), pp. 53-72.

Brown, M.R. and Mazzarol T.M., 2009. The Importance of Institutional Image to Student Satisfaction and Loyalty within Higher Education. *Higher Education,* 58(1), pp. 81-95.

Brown, T.A., 2006. *Confirmatory Factor Analysis for Applied Research*. Methodology in Social Sciences Series. New York:The Guildford Press.

Carey, K., Cambiano, R.L. and De Vore, J.B., 2002. Student to Faculty Satisfaction at Midwestern University in the United States, HERSDA, *The 25th HERSDA Annual Conference,* Perth, Australia, 7-10 July 2002. [online] Available at: <http://www.herdsa.org.au/wp-content/uploads/conference/2002/papers/Carey.pdf> [Accessed 3 May 2014].

Camgoz-Akdag, H. and Zaim, S., 2012. Education: A Comparative Structural Equation Modeling Study. *Procedia - Social and Behavioral Sciences*, 47, pp. 874-880.

Casidy, R., 2013. The Role of Brand Orientation in the Higher Education Sector. *Asia Pacific Journal of Marketing and Logistics*, 25 (5), pp. 803-820.

Dado, J., Petrovicova, J.T., Cuzovic, S. and Rajic, T., 2012. An Empirical Examination of the Relationships between Service Quality, Satisfaction and Behavioral Intentions in Higher Education Setting. *Serbian Journal of Management*, 7 (2), pp. 203-221.

DeShields, O.W., Kara, A. and Kaynak, E., 2005. Determinants of Business Student Satisfaction and Retention in Higher Education: Applying Herzberg's Two-factor Theory. *International Journal of Education Management,* 19 (2), pp. 128-139.

DesJardins, S.L. 2002. An Analytic Strategy to Assist Institutional Recruitment and Marketing Efforts. *Research in Higher Education*, 43 (5), pp. 531-553.

Dinu, V., 2007. Quality Management in Academic Context. *Amfiteatru Economic*, IX (22), pp. 5-6.

Douglas, J., McClelland, R. and Davies, J., 2008. The Development of a Conceptual Model of Student Satisfaction with their Experience in Higher Education. *Quality Assurance in Education*, 16(1), pp. 19-35.

Duque, L.C. and Lado, N., 2010. Cross-Cultural Comparisons of Consumer Satisfaction Ratings. A Perspective from Albert Hirschman's Theory. *International Marketing Review,* 27(6), pp. 676-693.

Elliot, K.M. and Healy, M.A., 2001. Key Factors Influencing Students Satisfaction Related to Recruitment and Retention. *Journal of Marketing for Higher Education,* 10(4), pp. 1-12.

Farahmandian, S., Minavand, H. and Afshardost, M., 2013. Perceived Service Quality and Student Satisfaction in Higher Education. *IOSR Journal of Business and Management,* 12 (4), pp. 65-74.

Finney, T.G. and Finney, R.Z., 2010. Are Students their Universities' Customers? An Exploratory Study. *Education + Training,* 52 (4), pp. 276-291.

Fitzpatrick, M., Davey, J. and Dai, L., 2012. Chinese Students' Complaining Behavior: Hearing the Silence. *Asia Pacific Journal of Marketing and Logistics*, 24 (5), pp. 738-754.

Fornell, C. and Larcker, D., 1981. Evaluating Structural Equation Models with Unobserved Variables and Measurement Error. *Journal of Marketing Research,* 18 (1), pp. 39-50.

Garrido, G.J.L., 2002. The Evolution of European University. *European Education*, 34 (3), pp. 42-60.

Gruber T., Fuß S., Voss R. and Glaser-Zikuda M. 2010. Examining Student Satisfaction with Higher Education Services Using a New Measurement Tool. *International Journal of Public Sector Management*, 23 (2), pp. 105-123.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E., 2009. *Multivariate Data Analysis*, 7 th Edition. New Jersey:Prentice Hall, Inc.

Ham, L. and Hayduk, S., 2003. Gaining Competitive Advantages in Higher Education: Analyzing the Gap between Expectations and Perceptions of Service Quality. *International Journal of Value-Based Management,* 16 (3)*,* pp. 223-242.

Helgesen, Ø. and Nesset, E., 2007. What accounts for students' loyalty? Some field study evidence. *International Journal of Public Sector Management*, 21 (2), pp. 126-143.

Hooper, D., Coughlan, J. and Mullen, M.R., 2008. Structural Equation Modelling: Guidelines for Determining Model Fit. *The Electronic Journal of Business Research Methods*, 6(1), pp. 53-60.

Janssens, W., Wijnen, K., De Pelsmacker, P. and van Kenhove, P., 2008. *Marketing Research with SPSS*. Edinburg: Pearson Education Limited.

Lagrosen, S., Seyyed-Hashemi, R. and Leitner, M. 2004. Examination of the dimensions of quality in higher education. *Quality Assurance in Education*, 12 (2), pp. 61-69.

Li, R.Y. and Kaye, M., 1998. A case study for comparing two service quality measurement approaches in the context of teaching in higher education. *Quality in Higher Education*, 4 (2), pp. 103-13.

Li-Wei, M., 2005. A Comparative Study between UK and US: The Student Satisfaction in Higher Education and its Influential Factors. *Journal of Marketing Management,* 21(7/8), pp. 859-878.

Maddox, N.E. and Nicholson, C.Y., 2008. The Business Student Satisfaction Inventory (Bssi): Development and Validation of a Global Measure of Student Satisfaction. *Developments in Business Simulation and Experiential Learning*, 35 (1), pp. 101-112.

Munteanu, C., Ceobanu C., Bobâlca C. and Anton, C., 2010. An Analysis of Customer Satisfaction in a Higher Education Context. *International Journal of Public Sector Management,* 23(2), pp.124-140.

Navarro, M.M., Iglesias M.P. and Torres P.R., 2005. A New Management Element for Universities: Satisfaction with the Offered Courses. *International Journal of Education Management*, 19 (6), pp. 505-526.

O'Driscoll, F., 2012. What Matters Most: An Exploratory Multivariate Study of Satisfaction among First Year Hotel/Hospitality Management Students. *Quality Assurance in Education*, 20 (3), pp. 237-258.

Phadke, S., 2011. Modeling the Determinants of Student Loyalty in Indian Higher Education Setting. *International Conference on Management*, *Behavioral Sciences and Economics Issues,* Pattaya, Thailand, 7-8 October 2011, pp. 262-264.

Pelău, C., Bena, I., Vlădoi, A.D., Dabija, D.C. and Fufezan, M., 2011. The Quality of Knowledge Flows and its Impact on the Intelectual Capital Development of a University, *3rd European Conference on Intelectual Capital Location*, Nicosia, Cyprus, 18-19 April 2011, pp. 322-327.

Phadke, S., 2011. Modeling the Determinants of Student Loyalty in Indian Higher Education Setting. *International Conference on Management*, *Behavioral Sciences and Economics Issues,* Pattaya, Thailand, 7-8 October 2011, pp. 262-264.

Popa, I., Dragos C. and Mare C., 2011. Some Statistical Results Regarding the Evaluation of the Quality of the Master Education, *Analele Universităţii din Oradea. Ştiinţe Economice.*, XX (2), pp. 303-308.

Radomir, L., Plăiaş, I. and Nistor, V., 2012. A Review of Service Quality Concept - Past, Present and Perspectives, *5th International Conference "Marketing from Information to Decision",* Cluj-Napoca, Romania, 26-27 October 2012, pp. 404-427.

Romero, I., Petrescu, R.M., and Balalia, A.E., 2011. Universities as Suppliers of Entrepreneurship Education Services. The Case of the University of Seville and the Academy of Economic Studies in Bucharest. *Amfiteatru Economic*, XII (30), pp. 347-361.

Roşca, I.G., Sârbu, R., Ilie, A.G., Petrescu V., Tomoşoiu, N. and Bucur, R.C.,2008. Quality Assurance Systems in Higher Education. *Amfiteatru Economic*, X (No. 2), pp. 6-12.

Russel, M., 2005. Marketing Education. A Review of Service Quality Perceptions among International Students. *International Journal of Contemporary Hospitality Management,* 17 (1), pp. 65-77.

Sayeda, B., Rajendran, C. and Lokachari, P.S., 2010. An empirical study of total quality management in engineering educational institutions of India: perspective of management. *Benchmarking: An International Journal*, 17 (5), pp. 728-767.

Sârbu, R., Ilie, A.G., Enache, A.C. and Dumitriu, D., 2009. The Quality of Educational Services in Higher Education - Assurance, Management or Excellence? *Amfiteatru Economic*, XI (26), pp. 383-393.

Săvoiu, G., Necşulescu, C., Ţaicu, M., Serbănescu, L. and Crişan, E., 2014. Level of Satisfaction of Educational Services Consumers. Impact and Consequences for the Responsability of an Economics Faculty. *Amfiteatru Economic*, XVI (35), pp. 79-98.

Sojkin, B., Bartkowiak, P. and Skuza, A., 2012. Determinants of Higher Education Choices and Student Satisfaction: The Case of Poland. *High Education*, 63 (5), pp. 565-581.

Souca, L.M., 2011. SERVQUAL – Thirty Years of Research on Service Quality with Implications for Customer Satisfaction. *4th International Conference "Marketing from Information to Decision",* Cluj-Napoca, Romania, 28-29 October 2011, pp. 420-429.

Stodnick, M. and Rogers, P., 2008. SERVQUAL to measure the quality of the classroom Experience. *Decision Sciences Journal of Innovative Education*, 6 (1), pp. 115-33.

Sultan, P. and Wong, H.Y., 2012. Service Quality in a Higher Education Context: An Integrated Model. *Asia Pacific Journal of Marketing and Logistics*, 24 (5), pp. 755-784

Tăchiciu, L., Dinu, V. and Kerbalek, I., 2011. Quality Uncertainty as a Barrier to Bussines Service Development. *Amfiteatru Economic*, XIII (Special No. 5), pp. 712-724.

Telford, R. and Masson, R., 2005. The Congruence of Quality Values in Higher Education. *Quality Assurance in Education,* 13 (2), pp. 107-119.

Toma, S.G. and Naruo, S., 2009. Quality Assurance in the Japanese Universities. *Amfiteatru Economic*, XI (26), pp. 574-584.

Toth, Z.E., Jonas, T., Berces R. and Bedzsula B., 2013. Course Evaluation by Importance-Performance Analysis and Improving Actions at the Budapest University of Technology and Economics. *International Journal of Quality and Service Sciences,* 5 (1), pp. 66-85.

Tsinidou, M., Gerogiannis, V. and Fitsilis, P., 2010. Evaluation of the Factors that Determine Quality in Higher Education: An Empirical Study. *Quality Assurance in Education*, 18 (3), pp. 227-244.

Willkins, S. and Balakrishnan M.S., 2013. Assesing Student Satisfaction in Transnational Higher Education. *International Journal of Educational Management*, 27 (2), pp. 143-156.

Yildiz, S.M. and Kara, A., 2009. The PESPERF Scale: an Instrument for Measuring Service Quality in the School of Physical Education and Sport Sciences (PESS). *Quality Assurance in Education*, 17 (4), pp. 393-415