

Perceptions Of Academic Staff For Student Success In The Higher Education: Evidence From Macedonia

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Abstract: Evaluation of academic success has attracted increasing research efforts due to its importance for the individual and social progress. Institutions of higher education face the challenge of delivering knowledge and competencies that allow students to meet the needs of a knowledge-based economy. As a consequence, the concept of student success represents a key strategic priority of higher education. Through systematic literature review, we show that there are various approaches to measure student success. The majority of published studies largely focus on estimation of student success from either the institution's or students' perspective. Here we offer an approach based on the evaluation of student success by the academic staff of a higher education institution. We conduct a country-specific analysis based on data from Macedonia. This approach enables an extension of the existing views and contributes to further clarification of the complex and multidimensional nature of the concept of student success, while providing evidence specific to a country.

Keywords: student success, higher education, academic achievements, quality in higher education

1. Introduction

An effective higher education system should provide students with theoretical knowledge and practical skills that will allow transfer from education to work environment. Since the Macedonian labour market has faced the challenges of transition process, the higher education should ensure the capacity to generate competitive and marketable skills to promote greater employability. The transition in the Macedonian higher education system is marked with a number of changes aiming to improve its quality and harmonisation with the European higher education standards. These changes include: the increase in the number of public and private higher education institutions, adoption of the European credit transfer system and adherence to the Bologna process, and the introduction of more innovative education practices (e.g. clinical education and compulsory internship).

However, the effects of reforms are often difficult to assess due to several reasons: First, these reforms have not been created within the academic milieu and are not widely supported by the academic community. Second, they have been launched without providing the necessary technical and personal assistance and logistics. Third, they do not take into account the effective labour market demand and do not provide the alumni students with adequate knowledge and skills. As a consequence, the quality of higher education in Macedonia and other countries in the South-Eastern Europe, as measured by international

standards, still lags behind that in more developed countries [1].

The assessment of academic success has received increasing research interest due to its importance for individual and social progress. In this context, the existing studies treat various approaches in defining the student success. These definitions encompass many aspects, ranging from those that explain the success through the lenses of academic achievements, retention and graduation to those that perceive the student success as a holistic phenomenon. The latter includes different dimensions of the individual, institutional and social development.

The majority of studies in this domain generally focus on estimation of student success from the perspective of the institution of higher education or that of students. The aim of this paper is to offer an approach based on the perceptions of the academic staff in the higher education with respect to the student success. We perform our analysis in a country specific context, by providing evidence from Macedonia. This approach enables an extension of the existing views and contributes to further clarification of the complex and multidimensional nature of the concept of student success. The rationale for this research and its contribution is explained as follows: First, the academic staff is in continuous communication with the students and can directly follow their achievements. In addition, the experience of the academic staff provides an opportunity to identify and perceive weaknesses of the education process,

rendering their assessment of student success relevant. Second, the opinion of the academic staff has so far being neglected when designing higher education policies in Macedonia. Therefore, in the future it has to receive more attention together with other stakeholders in the public debates about student success. Third, in Macedonia there is a lack of research focused on assessment of student success. Hence, this is an initial work that sheds light on the concept of student success, and provides an integrated approach that takes into account the perceptions of both students and other stakeholders.

2. Theoretical Background

The criteria for assessing student success can be elaborated from different points of view, such as: successful completion of the higher education process, the match with the needs of the labour market as well as wider implications to the personal, economic and social development. Due to this complexity, there exist no unique and encompassing criteria for measuring the student success in the higher education. The most frequently used indicators are those related to the rates of drop-out, retention and graduation of students [2], [3], [4]. According to the European Commission “student success comprises all major achievements of students in the higher education system, including dropout, retention, completion of a degree and time-to-degree” [5]. In this direction, the empirical findings confirm that model of students success is built on three key elements: graduation, transfer out, and continued enrolment [6].

With respect to the usage of the rates of retention and graduation as indicators of student success, some authors note that they can also serve as measures for assessing the institution success. Namely, “students' academic success is important to the institution because it demonstrates the accomplishment of its mission to educate and prepare students for life beyond college” [7]. Tinto (1975) performed the earliest important analyses in this domain leading to development of the so called Student Integration Model (SIM). According to this model, the levels of persistence or drop-out are determined, to great extent, by the level of student's academic and social integration. Tinto found that students who enrol in the higher education institution have different individual attributes, familiar background and pre-college experiences. These factors have significant impact on the intensity of student's commitment to the accomplishment of her/his goals (graduation) and her/his commitment to institution where she/he studies. In this context, the greater the commitment of the student, the greater her/his integration which

implies lower probability of dropping out the studies [8].

However, it is evident that this approach defines the student success from a narrow perspective which does not incorporate the aspects concerning the personal, economic and social achievements. Many authors point out that academic success is not associated only with quantifiable indicators and it should be analyzed in a broader context. This context comprises non-quantifiable indicators, such as attributes and capabilities gained throughout the higher-education experience [9], [10], [11]. In addition, this methodology fails to recognize the diversity of higher education institutions, changing demographics, and complex attendance patterns [12].

Hence, some studies indicate that it is necessary to take into account various additional indicators that will provide broader and all-encompassing conceptualization of student success. For example, according to Kuh et al., student success is defined as “academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and post-college performance” [13]. The new metric incorporates qualitative indicators reflecting the multidimensional characteristic of the concept of student success. This approach also reaffirms that the study outcome has complex nature and maybe measured with respect to various criteria. Therefore, existing studies treat student success as a holistic phenomenon that embraces the multiple dimensions of personal development and the multiple goals of higher education [14], [15]. Empirical research conducted by Singh, J. K. et.al. shows that, besides universally accepted quantitative measures, academic success includes indicators related to the development of academic knowledge, development of research and soft skills, securing good career opportunities, academic awards and scholarships, students' personal characteristics and their capabilities for application of knowledge and research findings acquired in the university [11]. Burton and Dowling distinguish three factors that are relevant to academic success: previous academic achievement, self-efficacy and preferred learning styles [16].

In addition, the need of broader approach in defining of student success arises from the dynamic economic changes and development of the knowledge-based economy that require new skills and knowledge which correspond to the labour market needs and the new economic reality. As a result, recent research indicates that the ‘focus has been shifted away from the inputs - what content material is taught, to the outputs - what

students can do i.e. problem- and/or project-oriented learning' [17].

As a consequence, these changes emphasise the need for further development of indicators to measure student success. In this context, the research carried out by Wiggers and Arnold affirms broader conceptual framework according to which the ultimate goal for the individual student is a completed postsecondary education credential, relevant employment and reasonable income, as well as broader indirect benefits related to civic engagement [18].

Therefore, the success criteria of students in higher education describe how the students will achieve their learning intentions or how they will acquire knowledge, skills, understanding, values and attitudes as well as how they will know that they have achieved them. Starting from the defined approaches about the nature of student success, student success criteria in higher education can be divided in several categories as presented on Figure 1. We further provide a brief description of each classification:

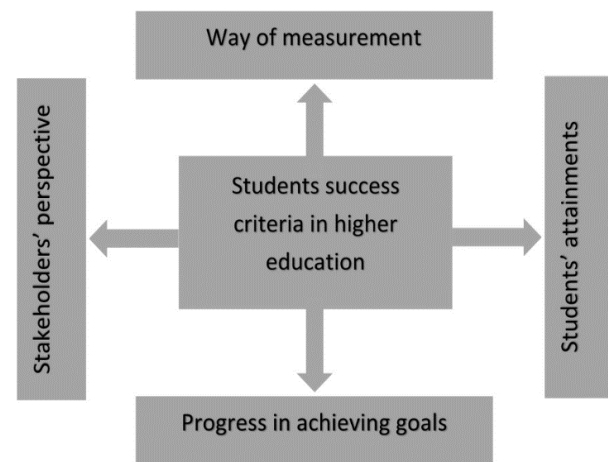
- criteria according to the way of measurement: directly measurable criteria that can be easily measured and presented quantitatively (e.g. study goals, duration of studies, study costs etc.) and, indirectly measurable criteria that are more difficult to be measured, are generally qualitative and have certain dose of subjectivism (e.g. attitude, satisfaction from achievements etc.);
- criteria according to the progress in achieving the defined goals: short-term (e.g. criteria for attaining the goals on short-term such for example the goals specified in the syllabi), mid-term (e.g. criteria for attainments from the aspect of completing particular academic year) and long-term (e.g. criteria for attaining completion of the study program);
- criteria from the perspective of stakeholders' observation: criteria from the lecturer's perspective (e.g. the success of meeting the specified goals etc.), criteria from the student's perspective (e.g. acquiring competitive knowledge, completion of study program on time etc.), criteria from the organization's perspective i.e. from the perspective of the University (percentage of graduated students), criteria from the employer's perspective or business community perspective (e.g. students with acquired knowledge and skills that are applicable in the real working environment), criteria from the policy-makers' perspective (percentage of graduated students relative to the number of enrolled students, students with appropriate

profiles according to the needs of the labour market etc.)

- criteria from the aspect of student attainments: knowledge achievements (e.g. level of knowledge in a particular field of study); intellectual abilities (e.g. critical inquiry; creative thinking; problem solving etc.) and professional/technical skills (e.g. apply the knowledge learned in a particular field) [19].

Although the above elaborated categorization of the success criteria in the higher education is not exhaustive, it covers a wide range of aspects that can be used in measuring the student's success.

Figure 1 Student success criteria in higher education



3. Literature review

In the context of the assessment of student's success in Macedonia, there is no research which directly focuses on this issue, but there are several studies encompassing some aspects of the assessment of student's achievements. For instance, the EU study report found that study success is an important issue for Macedonia and it is positioned very high or high on the national higher education policy agenda. This study shows that in the process of designing the national policies, the most frequently used success criterion is 'time-to-degree'. In addition, it has been noted that in stimulation of students for achieving greater study success and access to most recent academic knowledge, the government invests additional financial means for upgrading the educational resources and infrastructure (e.g. translations of professional scientific books and manuals as well as teaching laboratories. Accordingly, it has been expected that this will lead to improvement of the quality of teaching and learning and that it would have a positive impact on study success/completion rates. In addition, the study points out that the government allocates public scholarships particularly for students from low income families to

reduce the probability of drop-out and to increase the completion rate and the expectations that students will better concentrate on their studies [20].

Despite these commitments in the policy agenda, the last two decades in Macedonia have been marked with continuous erosion of the value system in the higher education. This situation is a result of the higher education policies that have stimulated opening of a large number of higher education institutions and have projected extremely high rate of enrolment of high-school graduates in these institutions. Namely, there were only two public universities in Macedonia until the beginning of the new millennium. Subsequently, three new public universities and around 18 private universities were created in a short time period. In addition, the expansive growth in the higher education was further fostered by opening dispersed studies in almost all cities in the country. This step resulted in quantitative increase in the number of new students. For instance, during the last 25 years, the number of enrolled students is more than doubled from 24.948 in 1990 to 59.359 students in 2015 [21]. The increase in the number of enrolled students was accompanied by an increase in the rate of higher education completion. For instance, in 1990, the number of graduated students was 2884, while in 2014, it reached 9650. However, it has to be emphasised that these figures are not only a consequence of the mass higher education, but also due to the implementation of higher education reforms according to the Bologna process which contribute to easing and accelerating the study process [22].

The regulatory liberalisation in the higher education is characteristic for the other countries in the Western Balkan and has led to similar tendency of exaggerated growth. The effects of these processes have resulted in the proliferation and devaluation of higher education as manifested by the phenomenon of "higher education bubble" [23]. In this context, the increase in the number of higher education institutions in Macedonian was not a result of the preliminary analyses of the labour market needs and education of profiles needed for furthering economic growth.

Moreover, the proliferation of higher education institutions creates ambivalence in the higher education value system. A part of the universities applied higher standards in students' assessment, while others established only minimum requirements for assessing the acquired knowledge and skills. Formally, all students obtain the same status after graduation; however, there exists a significant de facto differentiation in the acquired competencies. In this context, the World Bank analysis of the higher

education in the Eastern Europe countries identifies these trends and points out that the aim of the studies is not only obtaining diplomas but also acquiring good quality knowledge and skills [24].

This evidence has been confirmed by the empirical research entitled 'How to achieve better quality of the higher education' carried out in a number of public and private higher education institutions in Macedonia. This has noted that the university diploma is not a unique criterion for gaining a certain job. Namely, the employers more often use a defined list of competencies (e.g. knowledge, skills, capabilities, personal traits) that are required from the candidates [25]. However, the analyses demonstrate that employers complain that young workers applying for jobs in their firms do not demonstrate responsibility, reliability, motivation and commitment. In addition, they also have poor communication skills and lack general literacy skills [26].

Generally, most of the analyses show that a considerable number of students are not adequately prepared for efficient entrance in the labour market. This is also confirmed by a study conducted by the European Training Foundation (ETF) focused on assessing the key competences for Lifelong Learning: "Learning to Learn" and "Entrepreneurship" in Macedonia. Namely, students' responses on how much professors encourage entrepreneurship at the faculties show significant deficiencies in the attained competences during the studies. Less than half of the students (45%) express that their teachers stimulate them in developing skills and personal qualities such as: creativity, spirit of initiative, risk-taking and responsibility about leading the company, that are relevant to entrepreneurship. However, 55% of the students express that they were never given the chance. Furthermore, only 28% of the students declared that their professors helped them understand the role of entrepreneurship in the community, 30% of students declared that they were stimulated to create new ideas and activities in order to start their own business, while 42% responded that they will never start a business with delivery of specific training [27].

Many of the analyses confirm that the majority of graduated students lack the so-called soft-skills, such as: presentation capabilities, leadership competences, communication skills and skills for developing inter-personnel communication, skills for active learning, listening, reading, fast problem solution, techniques of creative thinking, organisational abilities etc. [25], [26]. The CRPM analysis (2009) emphasises several additional weaknesses of the Macedonian higher education system. This study qualified the Macedonian higher education system as a rigid,

inflexible and generally based on reproductive learning for obtaining a grade. The needs for developing a critical thinking and motivation for continuing (lifelong) learning are considered only in the academic circles, while the implementation of changes remains declarative and superficial. In addition, education policy in Macedonia was mainly focused on input-based measurement of the effectiveness of educational policy rather than on outputs, or student achievements. Such a system neglected the key competencies and functional literacy that determine the ability to perform effectively in modern society [28].

Although there are no thorough analyses about the implemented reforms, it is obvious that the system of mass higher education generates value distortions and that it has to develop in the direction of forming graduates with better professional and social competencies. The World Bank analyses clearly state that educational attainment is not universally high enough to meet the expected future skill demands in a quantitative sense. Namely, the quality is also a serious concern. The limited available evidence indicates that students lag behind their peers elsewhere in Europe and in the industrialized world with respect to actual learning outcomes. This system is not producing enough students with the skills needed in modern economies [29]. Similar conclusions are derived in the Macedonian action plan on youth employment where four weaknesses of the higher education system have been identified: i) low responsiveness to labour market requirements; ii) limited competency-based and core employability skills training; iii) underdeveloped adult training and lifelong learning opportunities; and, iv) a weak skills forecasting system. [30]

The reviewed studies mainly emphasise the issues of matching between the acquired competences of graduates and the labour market needs. Having in mind that the assessment of student success is a complex phenomenon which is not adequately treated by the Macedonian researchers, there still exists room for further analyses. This is particularly important from the perspective of future reforms in the higher education system, since these analyses provide identification of weaknesses and disadvantages of the higher education system and projection of its future transformation. In this context, our research encompasses the perceptions of the academic staff with respect to the student success. The obtained results will be used as an important input for further research as well as for designing the higher education policies.

4. Factors affecting student success

Taking into account the relevance of the concept of student success, the primary methodological task is to identify the factors that determine the success and assessment of their impact. The published analyses show that there are differences among factors regarding their significance and extent of impact. Namely, the existing empirical studies encompass analysis of different factors systematised in several groups and treat the perceptions of various stakeholders concerning the impact of particular factor. For instance, Khurshid (2014) performed a research in several higher education institutions and identified that student success is determined by the impact of wide range of factors. In the analysis he encompasses 56 factors systematised in 5 groups: i) Students' personal characteristics (students' motivation, intellectual abilities and personality); ii) Factors related to institutional support (Institutional environment, Effective teachers, Peer group); iii) Factors related to family support (Social Economic background, Family participation, Siblings); iv) Students' awareness (Awareness about academic goals, Awareness about existing trend in the subject, Knowledge about job market); and v) Access to resource (Financial aspects, Access of scholarship, Access of academic resources) [9].

A similar approach was employed in the empirical study of Jereb (2010) which includes opinion assessment among students of three universities in Slovenia with respect to the impact of the following factors: i) social elements (social class position, parents' education, parents' profession, parents' income); ii) student-related factors (motivation, aptitude, effort, IQ, time spend on study, opportunity to learn, pre-university education); iii) quality of instruction (organisation, course material, communication, assignments, exams, grading, course outcomes); iv) curriculum (number of courses, sequence of courses, test schedule, system-block or parallel); v) government (grant, student accommodation). [31]

Wiggers and Arnold (2011) considered two groups of factors: institutional and student population factors. With respect to institutional factors they point out that academic selectivity, program mix: administrative policies and institution size have direct impact on learning outcomes, skills acquisition, retention and completion rates. The other set of factors are related to the nature of student population and comprises: age, gender, core skills, commitment [18].

In the context of the existing holistic approaches, we consider the approach that focuses on measuring student's prosperity. This approach emphasises the relevance of student's psychological matrix as a

success factor. Thriving college students not only are academically successful, but also experience a sense of community and a level of psychological well-being that contributes to their persistence to graduation and allows them to gain maximum benefit from being in college. In this context, the analyses indicated that thriving was indeed a distinct construct comprised of: i) engaged learning, ii) academic determination, iii) positive perspective, iv) diverse citizenship, and v) social connectedness [10].

A similar perception with respect to success was provided by Killen et al. (2003) who found that factors that strongly influence success include motivation; students' approach to studying; cultural expectations; psychological factors; student's academic literacy; students' time management skills; peer culture; the quality of teaching; students' belief in their own ability and student support structures offered by the university [32]. The theoretical and empirical evidence generally leads to the conclusion that student success reflects a readiness to fulfil the personal and professional goals through acquiring appropriate knowledge and improving the awareness and responsibility for active inclusion in the wider social community.

5. Empirical analysis

Although there are various criteria for measuring student success, in this paper we focus on assessing the perception of the criteria from the perspective of

academic staff in higher education. More precisely, our analysis aims to assess the perception of the academic staff employed at universities in Macedonia. According to the State Statistical Office

in the academic year 2015/2016, the number of employed academics in Macedonia was 3980, with 70.4% as professors, and 29.6% as assistants. With respect to the gender composition, 47.4% are female, while 52.6% are male. In addition, it is worth mentioning that about 80.6% of the academic staff is employed in public institutions, while 19.4% work in private institutions.

The research has been conducted during the period May-September, 2016 by using an online survey. The questionnaire consists of 13 close-ended questions with multiple choices, meaning that they are accompanied by a range of several answers from which a respondent is asked to indicate which answer the best applies to her/him. The questionnaire was electronically sent to 1367 e-mail addresses of professors and assistants from 5 public and 15 private universities in Macedonia. The choice of the potential respondents in the sample was random and encompassed academics with different gender and titles, as well as from various scientific fields such as: Agricultural sciences; Medical and health sciences; Social sciences; Natural sciences; Engineering and technology as well as Humanities. Finally, our sample consisted of 205 surveyed academics and its attributes are presented in Table 1.

Table 1. The structure of the sample

Gender	Female	88	43%
	Male	117	57%
	Total	205	100%
Scientific field	Agricultural sciences	12	5.9%
	Medical and health sciences	5	2.4%
	Social sciences	95	46.3%
	Natural sciences	20	9.8%
	Engineering and technology	52	25.4%
	Humanities	21	10.2%
	Total	205	100%
Title	Full-time professor	69	33.7%
	Associate professor	43	21.0%
	Assistant professor (Docent)	59	28.8%
	Assistant	34	16.6%
	Total	205	100%
Type of institution	Public university	161	78.5%
	Private university	44	21.5%
	Total	205	100%

Source: Authors' calculations

In our analysis, we focus on three student success criteria: the average grade of the student during the studies (C1); the completion of studies on time (C2); the acquired knowledge that fulfil the employers' needs (C3). The attitudes of the respondents with respect to these criteria are measured on scale from 1 to 5, where 1 represents the least relevant, while 5 denotes the most relevant.

We further perform χ^2 tests of independence between the modalities in responses of these three

student success criteria which aim to test the consistency in responses of the surveyed professors and assistants. The results from the tests are presented in Table 2. According to the obtained results, at level of significance $\alpha = 0.05$, we reject the null hypotheses that the student success criteria are mutually independent. Hence, the responses are generally consistent with respect to the three criteria for assessing student success.

Table 2. The χ^2 tests of independence

		C2					Results of χ^2 test
C1		1	2	3	4	5	
1		6	1	1	2	0	$\chi^2 = 97.888 > 26.296$ $df = 16$ $p < 0.0001$ $\alpha = 0.05$ Coef. of contingency = 0.566
2		2	4	5	2	0	
3		1	19	26	14	5	
4		2	8	26	35	19	
5		0	0	10	11	6	
Total		11	32	68	64	30	
		C3					Results of χ^2 test
C1		1	2	3	4	5	
1		5	3	0	0	2	$\chi^2 = 138.264 > 26.296$ $df = 16$ $p < 0.0001$ $\alpha = 0.05$ Coef. of contingency = 0.635
2		0	0	2	3	8	
3		0	1	10	18	36	
4		0	0	5	25	60	
5		1	0	3	3	20	
Total		6	4	20	49	126	
		C2					Results of χ^2 test
C3		1	2	3	4	5	
1		5	0	1	0	0	$\chi^2 = 96.549 > 26.296$ $df = 16$ $p < 0.0001$ $\alpha = 0.05$ Coef. of contingency = 0.568
2		1	1	2	0	0	
3		3	6	5	5	1	
4		2	4	19	18	6	
5		0	21	41	41	23	
Total		11	32	68	64	30	

Source: Authors' calculations

However, by rejecting the null hypothesis of independence among the study success criteria we do not obtain information about the magnitude of their interrelation. Hence, in addition to we estimate the coefficients of contingency $C = \sqrt{\frac{\chi^2}{n + \chi^2}}$ for each pair of study success criteria. Since, in all three cases the coefficient of contingency is greater than 0.5 we conclude that there is a strong relationship between the three criteria.

To assess the factors that influence the student success criteria for each of the above stated criteria we estimate separate ordered logit model. The first group of explanatory variables describes the respondent's profile such as: Gender, work experience, title and type of institutions and scientific field. The second group of explanatory variables refers to preconditions such as: the student's motivation, the average grade in secondary school, the lecturer preparedness and the student's social status. The third group of explanatory

variables concerns the factors of student's success during the studies such as: Regular attendance of lectures, timely fulfilment of duties, being active on lectures, the student's creativity, the student's financial stimulations and the student's standard. The estimation results are summarised in Table 3.

With the first model, we attempt to assess the factors that influence the average grade of the student during the studies as a student success criterion. According to the estimation results, the average grade in the secondary school and being active during lectures are statistically significant and positively affect the average student's grade during the studies to be perceived by the professor as a student success criterion.

The factors that influence the completion of studies on time as a student success criterion has been assessed with the second model in Table 3. In this context, the full-time academics and those from private universities appreciate this student success criterion

most. In addition, the student's average grade in secondary school, her/his social status appear to be statistically significant factors that positively affect the perception of timely completion of studies as relevant student success criterion. In contrast, the student's creativity negatively affects the perception of this student success criterion.

Finally, the third model is created to assess the acquired knowledge that satisfies the employers' needs as a student success criterion. According to the results, the student's motivation, the lecturer preparedness and timely fulfilment of duties by the student have been identified as statistically significant factors that positively affect the perception of the academic staff with respect to this criterion.

Table 3. The estimation results of the logit models

	Model 1	Model 2	Model 3
Male (binary variable)	-.2224028 (0.467)	.007709 (0.980)	.1246561 (0.730)
Work experience (years)	.0124165 (0.579)	-.0077817 (0.718)	-.0253744 (0.316)
Assistant professor (Docent) (binary variable)	.5160597 (0.233)	.1933761 (0.656)	-.1592615 (0.756)
Associate professor (binary variable)	.2794189 (0.595)	.6252845 (0.227)	.4008042 (0.500)
Full-time professor (binary variable)	.8472663 (0.170)	1.485005** (0.018)	.4237787 (0.558)
Engineering and technology (binary variable)	-.1817407 (0.626)	.132247 (0.719)	.3747532 (0.385)
Natural sciences (binary variable)	-.0999209 (0.837)	-.2205338 (0.636)	.8303638 (0.138)
Humanities (binary variable)	-.0555331 (0.910)	.2197285 (0.664)	-.6402392 (0.196)
Agricultural sciences (binary variable)	-.1726461 (0.769)	-.5012058 (0.403)	.8259993 (0.248)
Medicine and health sciences (binary variable)	-.1283477 (0.887)	.6691558 (0.446)	.0484119 (0.965)
Private university (binary variable)	.2679241 (0.456)	1.351788*** (0.000)	-.0782164 (0.848)
The student's motivation (scale from 1 to 5)	-.0024167 (0.987)	-.0115427 (0.940)	.4302058** (0.011)
The average grade in secondary school (scale from 1 to 5)	.4913916*** (0.001)	.7036369*** (0.000)	.2403632 (0.171)
The lecturer preparedness (scale from 1 to 5)	.1909537 (0.315)	.2874285 (0.119)	.5538564*** (0.007)
The student's social status (scale from 1 to 5)	.1517488 (0.307)	.3429607** (0.021)	-.2685339 (0.123)
Regular attendance of lectures (scale from 1 to 5)	-.0272726 (0.899)	.3075533 (0.133)	-.0945251 (0.685)
Timely fulfilment of duties (scale from 1 to 5)	.3052370 (0.193)	.305093 (0.177)	.4597982* (0.072)
Being active on lectures (scale from 1 to 5)	.4014867* (0.082)	.2993226 (0.201)	.3039939 (0.264)
The student's creativity (scale from 1 to 5)	-.3507806 (0.131)	-.4985179** (0.029)	-.062034 (0.801)
The student's financial stimulations (scale from 1 to 5)	.2755874 (0.437)	-.228783 (0.531)	.5368945 (0.212)
The student's standard (scale from 1 to 5)	-.1640714 (0.648)	-.1240557 (0.720)	-.1908354 (0.654)

Source: Authors' calculations

These models for student success criteria reflect the process of progressive accumulation of knowledge by the student. According to the obtained results, the academic staff identifies several factors that have key impact on the student success. Namely, it is evident that some conventional factors are particularly relevant as determinants of student success, such as those that reflect a proactive student's approach toward studies (e.g. motivation, activity and regular attendance of lectures, timely fulfilment of duties). In addition, it has been confirmed the hypothesis that student success manifest a consistent pattern throughout the study period since, the students attaining a higher average grade in the secondary school tend to experience a larger success in higher education.

However, the analysis indicates that the academic staff does not perceive the student's creativity as important factor for student success which does not correspond to the approaches incorporated in the contemporary educational methods. Namely, the more advanced contemporary educational concepts assume that if the purpose of higher education is to help students develop their potential as much as possible, then enabling students to be creative should be an explicit and valued part of their higher education experience [33]. As a consequence, the results impose the need for future research aiming an identification of the reasons for such a perception with respect to the creativity. Generally, they point out to some weaknesses in the domain of the academic abilities to implement learning methods that will encourage development of creativity and institutional capacities for promotion of such an approach.

6. Conclusions

The assessment / evaluation of academic success is an important issue that has received a growing research interest. Most of the existing work in this domain generally focuses on estimation of student success from institutional or students' point of view. The complexity of this issue arises from the fact that student success criteria might be perceived from different points of view. In addition, there are various factors whose identification is important for determining student success. The contribution of this paper can be viewed in several domains and encompasses multiple dimensions that have not been a subject of analytical treatment in the existing literature.

First, we systematise the student success criteria according to four relevant aspects, namely, the way of measurement, the progress in achieving student's goals, the perspective of stakeholders' observation and the student attainments. Second, our study offers

an approach for assessing student success based on the perceptions of academic staff. Taking into account that the majority of studies in this field focused on determining the student success from aspect of students or institutions, our approach complements the existing analytical metrics and provides a new dimension in the assessment of the student success. Third, the assessment of student success is carried out by using three criteria: the average grade of the student during the studies, the completion of studies on time and the acquired knowledge that fulfil the employers' needs. In this context, the econometric analysis identifies the following statistically significant factors: the student's motivation: the average grade in secondary school; the lecturer preparedness; timely fulfilment of duties; being active on lectures; and the student's social status. On the other hand, we found that the impact of creativity is not as expected and is contradictory to the contemporary educational approaches of student-centred learning where the creativity is considered as a main pillar.

The obtained results from the research can be used as a useful input for creation of new strategic directions with respect to the perspective domains for intervention in the higher education, which should contribute to a better integration of students in the educational process, upgrading their achievements and quality of their knowledge. More precisely, they can have an important effect on the process of decision making for implementation of new study programmes, establishing teaching priorities, improvement of lectures and providing a student-centred learning. These findings should provide easier implementation of the new approaches in the higher education which is shifting from an 'instruction paradigm' – characterised by an emphasis on delivering lectures and providing students with the means to learn – towards a 'learning paradigm' in which the emphasis is no longer on the means but on the end, i.e. supporting the learning process of students [34]. Observed in a broader context, the obtained findings provide an inclusive framework of activities in the higher education institutions that will encompass an appropriate communication with the students' social environment (family and community) that can lead the improvement of their success.

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