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EDUCATION AS A DRIVER OF ENTREPRENEURSHIP AMONG GRADUATES IN SERBIA

Graduates worldwide show great interest in starting their own business. Different formal managerial and entrepreneurial courses are aimed to be sufficient for graduates' enterprises, but it is virtually impossible for creators of undergraduate curricula to follow completely market needs and dynamics. Therefore, an important link between academia and marketplace remains unfulfilled. This empirical study examines and explores the role of higher education curricula, education provided by institutions which support entrepreneurship and informal technology enhanced learning for entrepreneurs in Serbia on entrepreneurial success of graduates. The study also proposes solutions for fostering entrepreneurial spirit among graduates.

Keywords: higher education; entrepreneurship; technology enhanced learning; graduates; Serbia.
JEL: I20, L26.

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ОСВІТА ЯК РУШІЙНА СИЛА ПІДПРИЄМНИЦТВА СЕРЕД ВИПУСКНИКІВ ВНЗ СЕРБІЇ

У статті показано зростаючий інтерес випускників ВНЗ по всьому світу до підприємництва. Враховуючи це, розробники університетських курсів розробили велику кількість спеціалізованих програм, однак останні не в змозі встигати за стрімкими змінами потреб ринку. Саме тому між системою вищої освіти та ринком завжди існує певний провал і саме тому у статті обрано 3 напрямки для дослідження впливу освіти на підприємництво: формальна університетська освіта, спеціалізовані додаткові курси та неформальна освіта з посиленням впливом сучасних технологій. За результатами дослідження розроблено рекомендації щодо державної політики підтримки розвитку підприємництва та щодо формування освітніх програм.

Ключові слова: вища освіта; підприємництво; освіта з використанням сучасних технологій; випускники ВНЗ; Сербія.

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ОБРАЗОВАНИЕ КАК ДВИЖУЩАЯ СИЛА ПРЕДПРИНИМАТЕЛЬСТВА СРЕДИ ВЫПУСКНИКОВ УНИВЕРСИТЕТОВ СЕРБИИ

В статье показан растущий по всему миру интерес выпускников университетов к предпринимательству. С учётом данной тенденции было разработано множество специализированных университетских курсов, однако разработчикам таких курсов сложно успевать за стремительной динамикой потребностей рынка. Поэтому между системой образования и рынком всегда существует определённый пробел и поэтому в статье для оценки влияния образования на предпринимательские настроения выпускников выбрано 3 направления исследования: формальное образование, специализированные дополнительные курсы и неформальное образование с использованием современных технологий. По результатам исследования разработаны рекомендации для разработчиков государственной политики и университетских программ.

Ключевые слова: высшее образование; предпринимательство; обучение с использованием современных технологий; выпускники ВУЗов; Сербия.

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1. Introduction

Small and medium sized enterprises (SMEs) are the single largest job creators in economy (Bollingtoft, Ulhoi, 2005), although the empirical evidence suggests that only small part of them survives the first few years of existence. In last the decade in Serbia, SME sector grew rapidly, making now more than 99.7% of the total number of enterprises and nearly 60% of total employment in the country. The level of investment by SME is more than 50% of total investments in Serbia. Nevertheless, the lack of a sufficient number of relatively strong, fast growing and dynamic SMEs is still a huge limitation for sustainable economic growth.

On the other side, universities in Serbia are coping with the legacy of the past decades. The system of undergraduate studies in Serbia was monopolized by the state throughout the second half of the twentieth century. Similarly to other East and Central European countries, social science studies were largely politicized in this era, putting economic and management teaching under the influence of Marxism-Leninism (Auers, Rostocs, Smith, 2007). Therefore, all entrepreneurship studies were largely neglected in both academic literature and teaching process.

The transition to market economy triggered the need for the large and complex adaption of undergraduate curricula. However, the changes in the marketplace were more dynamic and rapid than the changes in academia. Moreover, there is no consensus among academics and practitioners on the effects emanating from entrepreneurship education on perceived attractiveness and feasibility of new venture initiation or even on actual start-up activity (Von Graevenitz, Harhoff, Weber, 2010), as the studies range from finding positive (Souitaris, Zerbinati, Al-laham, 2007) to finding negative effects (Oosterbeek, Van Praag, Ijsselstein, 2010). However, all the extant studies are focused on formal education received at universities worldwide. For the purposes of this study, a broader definition of education which includes both formal, non-formal and informal education is used.

This study provides an insight into the current situation of entrepreneurial success of graduates in Serbia. The first section reveals the current situation in higher education system of Serbia, together with the problems of undergraduates concerning their employment and formal and non-formal and informal education. Particular emphasis is given to the 3 important pillars of support for graduates' entrepreneurial success: higher education courses on entrepreneurship, life-long education provided by different governmental and non-governmental institutions and non-formal technology enhanced entrepreneurial learning in Serbia. In this part, we displayed the research results on the influence of these determinants on graduates' entrepreneurial success. The final section provides comments and suggestions for the usage of non-formal technology enhanced learning in entrepreneurial education.

2. Theoretical background

Undergraduates and graduates in Serbia face myriad of problems as they try to find the job or start their own business. The current youth unemployment rate is 46%, and it is at historical maximum. Therefore, we aimed to examine the influence of education as a factor affecting the entrepreneurial success of Serbian graduates, particularly higher education, other non-university formal education and non-formal education.

2.1. Higher education in Serbia. Current educational reforms in Serbia aim to develop a functional education system, capable of responding to new demands of global economy, although the efficiency of this transition is arguable (Jaric, Vukasovic, 2009). Universities are expected to play a new role in society by applying a "third mission" of economic development (Etkowitz et al., 2000; Rasmussen, Sorheim, 2006). The prime goal is the assurance of state-of-the-art education which would assure social and economic prosperity and graduates' employment.

Therefore, universities create a supply side for the labor market. However, studies suggest there is a significant gap between the demand of the labor market and the output of higher education (Svarcova, Chocholakova, Dobes, 2011). Different studies suggest this could also be applicable to start-ups, as universities fail to provide appropriate entrepreneurial skills (Papulova, Makros, 2007). Swedberg (2000) finds that entrepreneurial studies have advanced in last decades and that it is currently possible to teach something that earlier many people thought not could be taught. As stated previously in this paper, this idea is not accepted by all academics and practitioners. Although there is an ongoing vivid debate on the influence of undergraduate curricula on real entrepreneurial skills and attitudes, we hypothesized that:

H1: Higher education courses on entrepreneurship (HE) affect the graduates' entrepreneurial success.

2.2. Formal education provided by non-university institutions which support entrepreneurship in Serbia. SMEs have been a subject of numerous governmental plans for more than a decade, but the first strategy in Serbia was introduced in 2003. The latest strategy was brought in 2008 and is supposed to cover the period 2008–2013. One of the most important pillars of support for start-ups is continuous improvement of entrepreneurial education. Thus, graduates of Serbian universities are in position to attend additional courses and trainings on entrepreneurship. However, studies reveal that more than three quarters of students have never attended any course on entrepreneurship, rather at university or elsewhere. Scholars suggest that entrepreneurial education may be one of the few unexploited, cost-effective, micro-economic tools governments have for intelligently developing local economies (McMullan and Gillin, 1998).

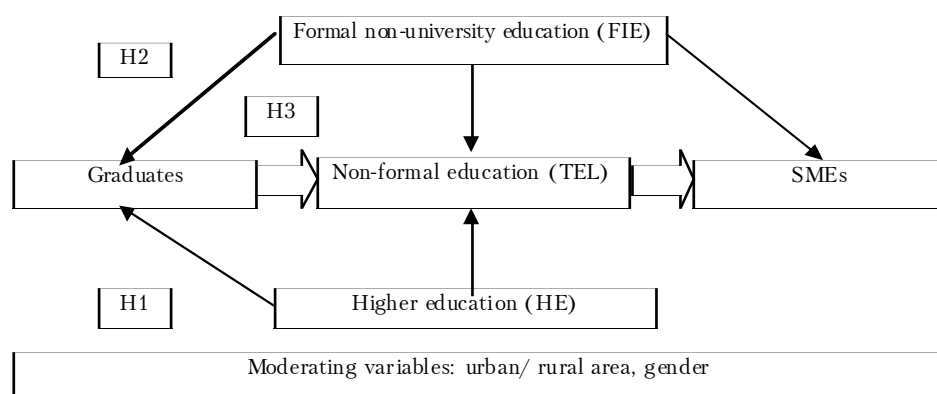
The most important "nods" in the network of institutions which support graduates' entrepreneurship development in Serbia are Republican (National) Agency for SME Development, Regional agencies and centers for SME Development, Serbia Investment and Export Promotion Agency – SIEPA, Agency for Foreign Investment and Export Promotion of the Republic of Serbia, Commerce chamber system etc. On the other side, the most prominent strategies are "National Economic Development Strategy of the Republic of Serbia 2006–2012", "Regional Development Strategy of the Republic of Serbia for the period 2007–2012" and "Development strategy for competitive and innovative small and medium enterprises for the period 2008–2013". Since the network of institutions and strategies which provide some kind of education and other incentives and support for entrepreneurs is relatively highly developed, the study hypothesized that:

H2: Formal education provided by non-university institutions which support entrepreneurship (FIE) affect the graduates' entrepreneurial success.

2.3. Non-formal entrepreneurial technology enhanced learning. Unlike formal education, non-formal is not followed by any certification, but is structured and can be realized at workplace. Nowadays it is mostly based on the use of new multimedia technologies and the Internet, and as such it is a form of technology enhanced learning (TEL). Cudanov, Savoju and Jasko (2012) state that "in a host of other technologies, TEL is facilitated today by Wikis, forums, blogs, social networks and other interactive technologies that allow the teacher, the learner and the administration functions". Non-formal education is engaged in entrepreneurial activity, but the scales and actual outcome of this influence is largely unknown. Accordingly, the study hypothesized that:

H3: Non-formal technology enhanced learning (TEL) affects the graduates' entrepreneurial success.

The complete research model is displayed in Figure 1.



Source: Authors' construction.

Figure 1. **Graduates and entrepreneurship – the research model**

3. Research methodology

The study was based on the primary data collection using paper-based questionnaires as a research tool. The study was carried among Serbian graduates, where the total population was nearly 550.000. The sample size was 380 examinees. They were selected randomly to ensure indicative and representative results. The response rate was 47.37% (181 examinees correctly fulfilled all the answers). The examinees were graduates from different universities in Serbia aging 25–35 years and registered as entrepreneurs at Agency for Business registers of the Republic of Serbia.

The pilot test with 14 persons was conducted in order to insure questions readability. The prepared final questionnaire was used for data collection. The data was captured by trained assistants and was entered and analyzed in the SPSS version 17.0. The quantitative data was analyzed with demographic statistics: percentages, means and standard deviation. Interdependence of determinants and entrepreneurial success was determined by the correlation (Pearson moments two-tailed correlation coefficient analysis) and multiple regression.

4. Results

For each determinant: higher education (HE), formal education provided by non-university institutions (FIE) and non-formal technology enhanced learning

(TEL) we conducted an independent sample t-test to compare the differences among entrepreneurs from urban and rural areas. The test confirmed a statistically significant difference in TEL process. The mean for entrepreneurs from urban areas is 4.4513, SD = .75582, whilst the entrepreneurs from rural areas had a mean of 4.1471, SD = .73839. With the probability of 99% the test determined statistically significant difference ($t(179) = 2.646, p = .009$). Although the study found a significant difference, the magnitude in differences was relatively poor ($\eta^2 = .038$). The urban/rural area difference was irrelevant considering other two variables, HE and FIE as displayed in Table 1.

In respect to entrepreneurs' gender, the difference had also been determined in two variables – FIE, and TEL, as displayed in Table 1. The gender, as a moderating variable was irrelevant for HE as entrepreneurial success determinant. These data reveal that male entrepreneurs find formal education by non-university institutions and non-formal technology enhanced learning as more important determinant for business success.

Table 1. Determinant means moderated by urban/rural area and gender

		N	Mean	Std. Deviation	Std. Error Mean
HE	Urban	113	4.5398	.66863	.06290
	Rural	68	4.4412	.69930	.08480
	Male	109	4.5688	.58321	.05586
	Female	72	4.4028	.79894	.09416
FIE	Urban	111	3.7117	1.24599	.11826
	Rural	67	3.3881	1.23036	.15031
	Male	107	3.7757	1.15993	.11213
	Female	71	3.3099	1.32656	.15743
TEL	Urban	113	4.4513	.75582	.07110
	Rural	68	4.1471	.73839	.08954
	Male	109	4.4679	.68811	.06591
	Female	72	4.1389	.82744	.09752

Source: Constructed by the authors.

One of the basic objectives of the study was determining the relation between higher education, formal education provided by non-university institutions and non-formal technology enhanced learning on one side and the entrepreneurial success of graduates on the other. For these purposes we conducted Pearson moments two-tailed correlation coefficient analysis. As displayed in Table 3 the study identified a strong positive relation between non-formal technology enhanced learning (TEL) and the entrepreneurial success ($r = .548, p < .01$).

The relation also exists between other two dependant variables and entrepreneurial success but there is a less of relationship [higher education: ($r = .379, p < .01$); formal education provided by non-university institutions: ($r = .439, p < .01$)]. The value for correlation coefficient and determination coefficient indicate that dependant variables: higher education – HE, formal education provided by non-university institutions – FIE and non-formal technology enhanced learning – TEL share 19.27%, 14.36% and 30.0% of all the variance respectively. In other words, these percentages explain the effect of HE, FIE and TEL on the entrepreneurial success of Serbian graduates. Therefore, the study indicates that the most important determinant of entrepreneurial success was business non-formal technology enhanced learning.

Table 2. Results of independent samples t-test determinant value moderated with urban/rural area and gender

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
HE	Equal var. assumed	.973	.325	.945	179	.346	.09865	.10441	-.10738	.30467
	Equal var. not assumed			.934	136.315	.352	.09865	.10558	-.11015	.30744
FIE	Equal var. assumed	.008	.927	1.687	176	.093	.32365	.19186	-.05499	.70230
	Equal var. not assumed			1.692	140.663	.093	.32365	.19126	-.05446	.70177
TEL	Equal var. assumed	1.804	.181	2.646	179	.009	.30427	.11501	.07732	.53121
	Equal var. not assumed			2.661	143.903	.009	.30427	.11434	.07827	.53027
HE	Equal var. assumed	5.448	.021	1.615	179	.108	.16603	.10282	-.03687	.36893
	Equal var. not assumed			1.517	120.004	.132	.16603	.10948	-.05073	.38279
FIE	Equal var. assumed	5.320	.022	2.476	176	.014	.46584	.18811	.09460	.83708
	Equal var. not assumed			2.410	135.937	.017	.46584	.19329	.08360	.84808
TEL	Equal var. assumed	.631	.428	2.902	179	.004	.32900	.11337	.10529	.55271
	Equal var. not assumed			2.795	132.506	.006	.32900	.11770	.09619	.56181

* Authors' construction.

Table 3. Two-tailed correlation coefficient analysis of higher education, formal non-university education and non-formal technology enhanced entrepreneurial education

		HE	FIE	TEL	Entrepreneurial success
HE	Pearson Correlation	1	.206**	.379**	.379**
	Sig. (2-tailed)		.006	.000	.000
	N	181	178	181	181
FIE	Pearson correlation	.206**	1	.464**	.439**
	Sig. (2-tailed)	.006		.000	.000
	N	178	178	178	178
TEL	Pearson Correlation	.379**	.464**	1	.548**
	Sig. (2-tailed)	.000	.000		.000
	N	181	178	181	181
Entrepreneurial success	Pearson Correlation	.379**	.439**	.439**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	181	178	178	181

* Correlation is significant at the 0.01 level (2-tailed).

** Authors' construction.

The study employed multiple linear regressions to determine the influences and intensity of the factors to the phenomenon of entrepreneurial success. The results

suggest that the research model explained 37.3% ($R^2 = .373$) of the variance of dependent variable – entrepreneurial success. Considering the fact that the F-test was highly statistically relevant ($p < .01$), the authors suggest that there was no linear interdependence of variables in the research model.

Table 4. Multiple regression analysis result on the determinants of entrepreneurial success

Model	Non-standardized coefficients		Standard. coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.509	.284		5.313	.000
HE	.176	.060	.190	2.936	.004
FIE	.116	.034	.230	3.392	.001
TEL	.303	.059	.367	5.120	.000

a. Dependent variable: Entrepreneurial success
 $R = .611$ $R^2 = .373$
 $F = 34.465$ $p = .000$

Source: Constructed by the authors.

Standardized coefficients Beta were adjusted for the differences in measurement scales. It may be concluded that all determinants significantly affect the researched phenomenon. Among them, non-formal technology enhanced learning is the single largest variable influencing the entrepreneurship success of graduates. Therefore, improvements in non-formal education would foster entrepreneurial behavior and the success of Serbian graduates.

5. Conclusions

This paper provides an empirical analysis of educational antecedents of graduates' entrepreneurial success. It was largely unknown how education affects entrepreneurial activities and behavior. Extant studies on this relationships provide interesting insights, but huge gaps still remain. The study examined the influence of formal and non-formal education on entrepreneurs. In particular, the given research addressed the influence of higher education courses on management and entrepreneurship, formal education courses provided by non-university institutions and non-formal technology enhanced education of entrepreneurs on the entrepreneurial success of graduates.

The study finds that continuous improvement of higher education and other forms of formal education for continuous learning are the backbone of graduates' entrepreneurial affirmation at the market. However, the main finding is that non-formal education becomes the dominant education factor for entrepreneurial success. These implications are important for the developers of educational policy. Entrepreneurship can be fostered mostly by implementing different programs of non-formal education, as the study finds positive relationships between this form of education and entrepreneurial knowledge, skills and attitudes. However, the study did not address costs of such programs. Further, studies should provide more insights into cost-benefit analysis of non-formal educational programs.

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