

Comparative analysis of self-employment intentions among university students in four Central and Eastern European countries

Usporedna analiza namjera sveučilišnih studenata u pogledu samozaposlenja u četiri zemlje srednje i istočne Europe

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ABSTRACT

It is of high interest of a society to explore and support self-employment which is a prerequisite for development of entrepreneurship and, consequently, the growth of economy. Keeping in mind political and economic differences in Croatia, Poland, Serbia and Slovakia, the level of self-employment intentions was investigated among students at agricultural or life science universities in these countries. The self-employment intention level (SEINT) was measured on a scale of 1 to 5. The total sample of 1,156 respondents involved students from Nitra, Warsaw, Zagreb and Novi Sad. The average SEINT value was 2.97, with students located in Novi Sad expressing significantly higher scores than the other three universities. It was found that some of socio-demographic factors are significantly related to the SEINT. However, the main reasons for significant difference in SEINT for Novi Sad students are believed to be due to the differences in macroeconomic conditions in the country.

Keywords: self-employment, students' intentions, CEE countries, agricultural universities

SAŽETAK

U interesu je svakog društva razvijati samozapošljavanje među studentima, jer je za očekivati da će upravo oni biti lideri gospodarstva u bliskoj budućnosti. Uzimajući u obzir političke i gospodarske razlike između Hrvatske, Poljske, Slovačke i Srbije, ispitane su namjere samozapošljavanju među studentima područja poljoprivrede i životnih znanosti u navedenim zemljama. Razina namjere samozaposlenja (SEINT) je mjerena na skali od 1-5. Ukupno je ispitano 1.156 studenata sa sveučilišta u Nitri, Varšavi, Zagrebu i Novom Sadu. Prosječna vrijednost za SEINT iznosila je 2.97, pri čemu je prosjek studenata iz Novog Sada statistički značajno viši nego na ostala tri sveučilišta. Utvrđena je statistički značajna povezanost nekih od socio-demografskih čimbenika s vrijednošću SEINT. Rezultati ukazuju na zaključak da glavni razlog za značajno različite vrijednosti kod studenata iz Novog sada dolazi od razlike u makroekonomskim uvjetima u pojedinoj zemlji.

Ključne riječi: samozaposlenje, namjere studenata, zemlje Srednje i Istočne Europe, poljoprivredna sveučilišta

INTRODUCTION

People who earn income from their own business rather than as a pay from an employer are considered to be self-employed. Consequently, although there are many forms of self-employment, the fact of owning and running a business rather than working for others is common to all of them.

Here a distinction needs to be made between entrepreneurship and self-employment. Self-employment is a form of running of an independent business, but a self-employed person does not have to fit to common concepts of an entrepreneur. Only some of self-employed hire others to work for them, and are incline to innovation and risk taking. They do not have to be innovative and his/her businesses do not have to exhibit high rates of growth (Wiseman and Young, 2014). In other words, an entrepreneur is a self-employed person, while a self-employed person does not have to be an entrepreneur at the same time.

Despite the fact that self-employment does not necessarily result in the creation of a fast growing business venture that will eventually become a large company, it is a prerequisite for an entrepreneurial activity. Hence, due to its importance on entrepreneurship, self-employment is crucial for economic development.

Self-employment and entrepreneurship are welcomed and supported by governments in all developed countries. The European Community (EC) policy started to place more of an emphasis on encouraging the start-up of new enterprises during 1980-es. In recent decades, more trainings and subjects are being continuously offered in the field of entrepreneurship, and are incorporated in the majority of higher educational programs. As well as playing a crucial role in increasing the competition of emerging sectors, new small businesses are critical for economic growth and innovative capacity in many regions. Self-employment and entrepreneurship makes driving forces within an economy, particularly because of entrepreneurs' innovative nature (Fuellhart and Glasmeier, 2003; Maxwell and Stone, 2004).

For the purpose of this study, the CEE countries Croatia, Poland, Serbia and Slovakia were chosen. Up until the end of 1980s and beginning of 1990s, all four countries used to be socialist countries. Since then, they all went through a transformation from a socialist system to a democratic system and a market economy. This process differed in each country, especially in Croatia because of the 5 year war. Three of the countries are members of the EU, while one is not (Serbia). Out of the three EU members, Poland and Slovakia joined the EU in 2004, while Croatia, the youngest member of the EU family, joined in 2013.

The information from Table 1 depicts that the economic situation in Poland and Slovakia may be considered as better than that in Croatia and Serbia. When using such information, one has to keep in mind that the level of development, as well as the standard of living, may have a diverse impact on self-employment. Indeed, self-employment may often be indicative of lower levels of economic development, where the opportunity cost to self-employment (in the form of available wage employment) is very low.

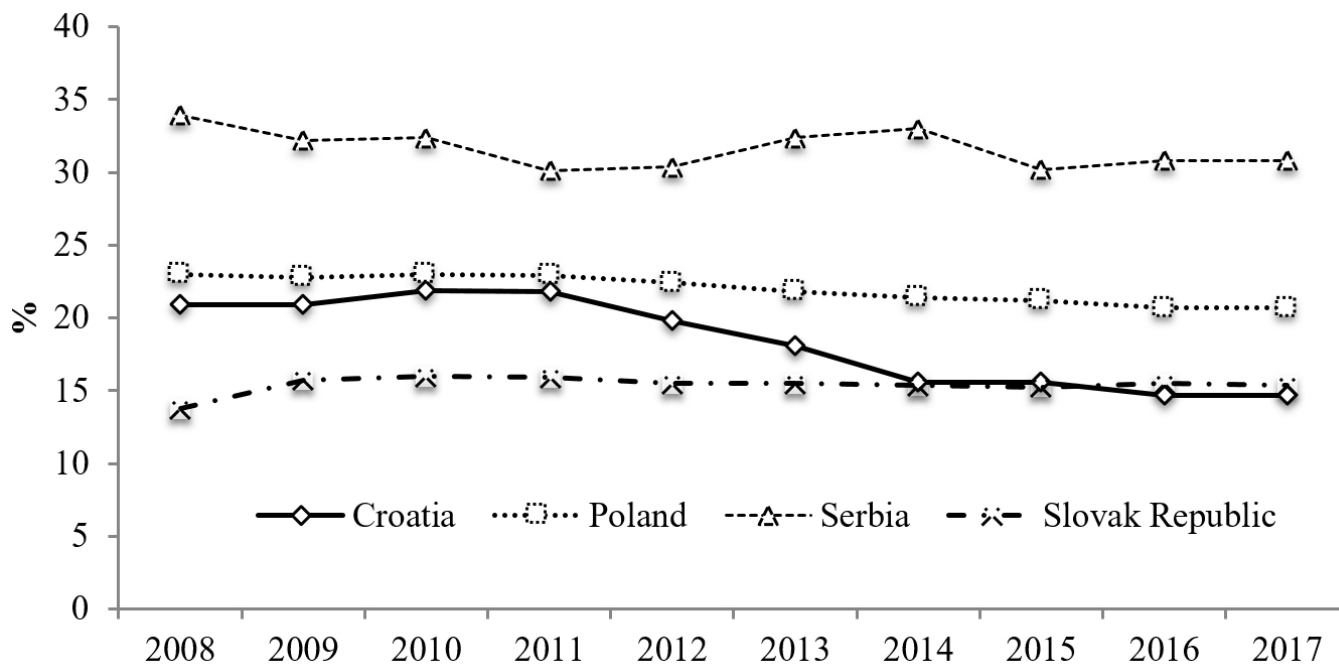
Table 1. Macroeconomic and starting-a-business indicators by country

Indicator	Croatia	Poland	Serbia	Slovakia
GDP per capita, USD (2016) ^a	12 091	12 372	5 348	16 496
Unemployment rate, % ^b (2017)	13.9	4.8	16.0	8.1

Sources: ^a World Development Indicators - Google Public Data Explorer; ^b CIA, The World Factbook

In line with the abovementioned, it is not a surprise that the highest proportion of self-employed in total number of employed is in Serbia (Fig. 1). The proportion of self-employment in Croatia decreases between 2011 and 2014 from 21.8% to 15.6%. In Poland, self-employment has more of an importance on the total employment in comparison to Slovakia.

Levels of self-employment and entrepreneurial activity in a country may also be related to the perception of entrepreneurs and entrepreneurship lifestyle in the



Sources: The world Bank Data Catalog, 2018 (<https://data.worldbank.org/data-catalog>)

Figure 1. Self-employed, total (% of total employment) (modelled ILO estimate)

society. One of the measures of the entrepreneurial activity is the Total Early-stage Entrepreneurial Activity (TEA) index. Developed by GEM (2017), it measures the percentage of the adult population (18 to 64 years) that are in the process of starting, or who have just started a business. Based on their research conducted in four countries, Martz et al. (2003) concluded that a higher TEA index implies a higher perceived value of entrepreneurship.

A good source of information, regarding the public opinion of citizens of the EU and additional 13 countries on self-employment and entrepreneurship, is the publication *Entrepreneurship in the EU and Beyond Report* (2012). Table 2 depicts results from the publication for the three countries analysed in this paper. According to the table Croatians have the highest consideration for self-employment desirability, but they also show the lowest consideration for feasibility of self-employment. Respondents in Poland expressed the highest feasibility for self-employment, but there is also the highest share of those who have negative opinion about entrepreneurs.

According to GEM Global Report results (2017), the lowest level of entrepreneurial intention is found in

Slovakia, and the highest in Serbia. It is interesting that in Slovakia, entrepreneurs are considered to have a high status, while at the same time, entrepreneurship is not recognised as a good career choice.

The goal of this paper is to determine how students of agriculture and life sciences consider the idea of self-employment. In general terms, the interest in students' intentions with regard to self-employment is due to the fact that they will join the labour market in a relatively short period of time. This population is particularly interesting from the perspective of development of agriculture and rural areas which is reliant on rejuvenating of management as well as on raising the level of knowledge and innovation.

The first objective is to measure students' self-employment intention level and then to compare the results among universities. An additional objective is related to investigating the relationships between the self-employment intention, and the selected personal demographic and social factors, with the aim to better explain eventual differences in the results among the chosen universities.

Table 2. Results of the international public opinion survey on self-employment

Description	Croatia	Poland	Serbia	Slovakia	EU27 average
A: Entrepreneurship in the EU and Beyond Report (2012): The share of respondents ^a					
- that consider self-employment desirable or very desirable	58%	40%	22%	n.a.	32%
- that consider own self-employment in 5 years very or fairly feasible	18%	49%	34%	n.a.	30%
- that consider entrepreneurs as job creators (positive)	76%	89%	85%	n.a.	87%
- thinking that entrepreneurs take advantage of others work (negative)	70%	91%	80%	n.a.	57%
B: GEM Global Report 2016/17 (2017) ^b					
The share of respondents thinking about the status of entrepreneurs as high	45.6%	56.2%	60.1%	56.2% ^c	n.a.
The share of respondents considering entrepreneurship as a good career choice	62.2%	61.9%	50.6%	68.9% ^c	n.a.

Note: ^c 2009 data.

Sources: ^a TNS Opinion & Social. European Commission, 2012; ^b GEM, 2017.

LITERATURE REVIEW

There are numerous studies examining intentions and attitudes of students in terms of self-employment from multiple viewpoints (Ramayah and Harun, 2005; Tretten, 2005; Venesaar et al., 2007; McStay, 2008; Teixeira and Davey, 2008; Nabi et al., 2010; Buchta and Jakubiak, 2014; Juračak and Tica, 2016). One of the reasons for that is that university students represent a part of the population that is expected to play an important role in the economy of a country. The review of previous research for this study take into account scientific and professional sources with comparable methodological approaches and variables.

With regard to socio-economic conditions and their relation to self-employment, Kedmenec et al. (2014), as well as Douglas and Shepherd (2000), write that people would choose self-employment if the benefit they expect to derive is greater than the expected benefit from their best employment option. We are aware that in more developed countries, better employment options are available. On the other hand, under poor economic conditions, a negative stimulus may often be the trigger for self-employment. This is to say that push factors, rather than pull factors, are the driving force for own-

account employment (OECD, 2013). Examples of this are found in developing countries where, because of low employment opportunities, a relatively large part of the active population derives income on small farms or crafts. Therefore, we should not be surprised if a low developed country has a high proportion of self-employed people.

According to Hisrich et al. (2008), individuals have a different perception of entrepreneurs and their lifestyle, especially from the ethical point of view. According to the GEM survey (2017), one of the reasons the level of entrepreneurship activity varies across the countries is the differences in the perception of entrepreneurs across cultures. In some societies, more people consider entrepreneurs as individuals that use resources, including labour, for their own benefit only. In others, the major part of the society has a positive perception of entrepreneurs and their contribution to the social prosperity. However, it is interesting that among the included countries in Poland is the highest proportion of both: (1) people with positive opinion on entrepreneurs as job creators, and (2) people with negative opinion on entrepreneurs as taking advantage of others work (EU and Beyond Report, 2012).

The level of intention of a single individual is found to be mainly reliant on two factors: perceived personal

capability, and desirability of the activity. Therefore, if an individual feels capable of taking an action, and if he / she has a desire to do it, he / she will show a higher level of intention to do so. It is a general rule, based on numerous studies, that a stronger intention towards a certain action increases the probability for the action to occur (Ajzen, 1991; Ramayah and Harun, 2005; Venesaar et al., 2007; McStay, 2008; Juračak and Tica, 2016). Self-efficacy and subjective norms are found to be positively related to entrepreneurial intention, as well as to respondents' attitudes towards entrepreneurship.

Because of differences in objectives, methodology, coverage and sampling there are big differences between various studies, regarding the proportion of students who intend to start their own business. According to Tretten (2005), and Nabi et al. (2010), approximately one third of Yorkshire and Humber (England) and Lulea (Sweden) students expressed an intention to start their own business. In Portugal, about 35% of student's regard having their own business as a probable career (Teixiera and Davey, 2008). In Poland, Lublin Voivodship, 50% of surveyed university students exhibited interest in establishing one's own business after graduation (Buchta and Jakubiak, 2014). Another study from Poland by Luczka and Rembiasz (2016) shows quite similar results: 50% of students plan to set up their own business in the near or distant future. At Tallinn University of Technology, 61% of students have an intention to either start a business or they have already started one. Furthermore, their interest in starting their own business is growing overtime (Venesaar et al., 2007). Veciana et al. (2005) found that around 80% of students in Puerto Rico and Catalonia consider it desirable to start their own business. Sieger et al. (2016) analysed student survey data from 50 countries. As an overall indicator, 80.3% of respondents intend to become employees after their studies. Only 8.8% of students plan to start their own business immediately after their studies, while another 38.2% plan to do so 5 years after graduation. The general pattern determined in the same research is "first employee, then entrepreneur", regardless of the level of economic development.

There are different opinions regarding the typical age of an entrepreneur. While Hisrich et al. (2008) state the age of 22-45, in the GEM publication (2017) the age of 25-34 is considered as typical. As already discussed, being an entrepreneur is not the same as being self-employed. Consequently, the age structure of self-employed is different from that of entrepreneurs. For instance, the analysis of statistical data for the period 2004-2011 in Serbia, indicates that 50.9% of self-employed are over 50 years old, with the most frequent age group among self-employed being 50-54 years (Stefanović and Stošić, 2012).

Previous experience and role models have been confirmed as good predictors for self-employment intention (Tkachev and Kolvereid, 1999; Martz et al., 2003; Shaper and Volery, 2004; Juracak and Tica, 2016; Sieger et al., 2016). Positive experience in entrepreneurship among close relatives and friends, positively contributes to a person's entrepreneurial intention. Kedmenec et al. (2014) argue that experience and role models help individuals to recognize more business opportunities.

The majority of the available literature reports a gender imbalance in stating that men make a larger proportion among entrepreneurs (Veciana et al., 2005; Ramayah and Harun, 2005; Teixeira and Davey, 2008; Nabi and Walmsley, 2010; Shneor et al., 2013; Buchta and Jakubiak, 2014; Sieger et al., 2016). The same goes for self-employment, which is also dominated by men (Arandarenko, 2010). However, there are some studies that put these findings into question, and it has been noticed that the misbalance is getting smaller in recent decades (Tkachev and Kolvereid, 1999; Hisrich et al., 2008). For instance, research conducted by Stamatović et al. (2012) revealed that a higher percentage of young females, compared to young male respondents are inclined to entrepreneurship (95.2% to 79.8% respectively). This study only relates to urban centres (Novi Sad and Belgrade), but it is still an important result highlighting the potential of women entrepreneurship. The reason for smaller participation of women in self-employment may be found in the lower perception of self-efficacy and lower self-employment desirability level among them

(Ramayah and Harun, 2005; Juračak and Tica, 2016). Another valuable information, with respect to gender, is that women became self-employed at an older age in comparison to men, and they show a lower level of self-confidence regarding their self-employment. Kedmenec et al. (2014) found that in Slovenia and Croatia, men identify business opportunities more often than women, and men are more convinced in their ability to start a business. Nabi et al. (2010) also found that male students have more positive attitudes towards entrepreneurship. Finally, according to the OECD publication (2013), there are three times as many men as women among self-employed with employees. As in the vast majority of other countries, self-employment in Serbia is dominated by men and they account for approximately 75% of all self-employed workers (Arandarenko, 2010).

The authors have come up with different conclusions about the relationship between the type of study and self-employment intention. However, a common conclusion is that the attractiveness of entrepreneurship is positively correlated with the volume of entrepreneurship and business management lessons attended (Sieger et al., 2016). Hence, it is not surprising that many authors found business and economics students to have a higher level of entrepreneurial intentions than others (Nabi et al., 2010; Dabrowska and Skowron, 2015). Interestingly, Sieger et al. (2016) noticed that students of arts (e.g., art, design, drama, music) have the strongest entrepreneurial intentions. This may be due to the specific job profiles of artists, which are often self-employed.

In the 2005 study on immigrants' attitudes towards self-employment, Bauder (2005) found that female respondents who used to live in rural areas in the country of origin, express higher desirability of entrepreneurship. Movahedi et al. (2013) found that students from agricultural community's rate self-employment higher than others. However, despite findings that confirm the higher level of self-employment desirability and intention in rural areas, Labour Force Survey data from UK showed no difference in the proportion of self-employed people in rural and urban areas (Faggio and Olmo, 2014).

We consider that, beside other factors, a person's belief or religiousness may influence her/his attitude towards entrepreneurship. Every religion has a set of values and it is expected that these values have an impact on personal values of a practical believer. The relation between religion and entrepreneurship has been studied by many authors. Clark and Drinkwater (2000) found that in the United Kingdom, Christians and those who are not religious are less likely to be self-employed in comparison to Muslims. Youcef et al. (2015), as well as Audretsch et al. (2013) confirmed the finding that some religions have a positive effect on the entrepreneurship intention. Generally speaking, people adherent to religions that support entrepreneurship may have a stronger preference towards self-employment. Butler's and Source's results (1991) showed that Catholics were less prone to self-employment than other religions in the United States. Carswell and Rollan (2004) also investigated the role of religion in entrepreneurship participation. However, they were one of a few saying that different religions believe in the importance of entrepreneurship, in the same way. One study in the same field found the most interesting was that by Wiseman and Young (2014). One of their research goals was to see if there is a correlation in the level of entrepreneurship and belief. Their results confirmed that the level of entrepreneurship in the US states is negatively correlated with the share of people who are believers. However, we may say it is not in line with Dodd and Saeman (1999) who found that the level of religiosity is quite the same for entrepreneurs and non-entrepreneurs. In spite the fact that we did not investigate entrepreneurship activity but intentions, it was interesting to test if there is a significant correlation between religiosity and the entrepreneurial intention among students.

MATERIALS AND METHODS

The survey was conducted during the academic year 2016/2017 among students of four universities from four countries: University of Zagreb Faculty of Agriculture (UNIZG, Croatia); University of Novi Sad Faculty of Agriculture (UNINS, Serbia); Slovak Agricultural University

in Nitra (UNINR, Slovakia) and Warsaw Life Science University (UNIWA, Poland). The survey population, i.e. the sampling frame, included all regular undergraduate (BS) and graduate (MS) students of the particular institution involved. Here the important differences among the involved institutions must be highlighted. The first distinction is in the type of institution: two of them are universities (UNIWA and UNINR), whereas the other two are faculties, i.e. members of bigger, diversified universities (UNIZG and UNINS). Due to the rather weak level of integration of the Zagreb and Novi Sad universities, the faculties are quite independent to act as separate legal entities. Another distinctive feature is a result of the mentioned organisational differences. Universities in Nitra and Warsaw have specialised programmes in economics. The faculties in Zagreb and Novi Sad have study programmes in agrieconomics and/or agribusiness: they do not offer programmes in economics. However, for the purpose of this research, we divided the student population into two strata: (1) students of economics or agrieconomics and (2) students of other agricultural or life science studies. This was done for the purpose of comparing the students' attitudes, with respect to the volume of economic and business subjects they attended. The first stratum involves students that attended more of the subjects mentioned.

The sample was selected randomly, using the systematic sample technique on both strata. The sample size was determined for each institution separately to provide representativeness at levels of institution and strata.

The survey was conducted during the academic year 2016/2017, using a structured questionnaire based on the work of McStay (2008) and Juračak and Tica (2016). The original version of the questionnaire was developed in English and then translated to other languages. The questionnaire is organised in several sections of which the following were used in this paper:

- (1) Previous entrepreneurial experience (PEE)
- (2) Self-employment intention (SEINT)
- (3) Personal factors: demographic and social.

To find out about the students' previous experience in self-employment, we used a set of seven questions about student's experience, as well as experience of closely related persons. The highest possible result for previous entrepreneurial experience was 7. Respondents, with results below five were associated low level of entrepreneurial experience, while others were associated the high level.

The section under (2) consists of five statements in the form of Likert scale. The purpose of the scale was to measure the level of a person's self-employment intention. Respondents were offered to select from five grades of agreement with their statements, so the maximum score for this scale was 25. The higher the score, the higher the level of self-employment intention being reflected. The self-employment intention variable is referred further in the paper as SEINT.

The purpose of introduction of the section (3) was twofold:

- (1) To investigate how personal factors are related to SEINT
- (2) To explain eventual differences in students' self-employment intentions among the institutions.

The section (3) consisted of personal factual questions, questions about attitudes and beliefs. Most of them, except for age and field of study, were closed questions with presented possible answers.

As respondents come from countries with different economic conditions we also included macroeconomic indicators in the analysis. Namely, three variables were used and grouped universities with respect to the corresponding values: GDP per capita indicator, unemployment rate and the World Bank Starting a Business Rank.

Regarding the investigation of the research assumptions, the data using tables and charts were edited and analysed at the beginning, as well as using descriptive statistical indicators.

The significance of the differences between subsets of data was tested by the suitable statistical tests:

- ✦ Chi-square test was used for categorical variables
- ✦ T-test was used for numeric variables in case of two groups
- ✦ One-way ANOVA was used for numeric variables in case of more than two groups, with post-hoc analysis option where applicable.

Hypotheses

The four universities included in the research are in countries which are different in many aspects: GDP level, employment rate, EU membership status, educational system, historical development, etc. These factors may be related to an individual's perspective and propensity towards self-employment. In addition, student groups from different universities may diverge according to their socio-demographic characteristics, which may also be related to desirability of self-employment.

Accordingly, our first assumption is that students from different universities will significantly differ with respect to the level of self-employment intention.

Bearing in mind the results from the reviewed literature, another assumption of the research is that students' level of self-employment intention varies with respect to gender, field of study, place of living and family farming experience.

Beside the mentioned socio-demographic factors, we also assume that the level of self-employment intention relates to macroeconomic conditions and business environment of a country.

RESULTS AND DISCUSSION

General characteristics of the sample

The survey included 1,156 students from four universities, with the highest share in the total sample being students from the UNINR (37.8%). The sample from UNIWA is the second largest making up for 26.1% of the total sample, followed by UNIZG with 20.1% and UNINS with 16%. The majority of respondents are female students who make up for 61.2% of the sample, varying

from 54% in UNIWA to 66.2% in Zagreb. It is interesting that, in recent years' female students regularly prevail, even at agricultural faculties that were traditionally male prevalent. Regarding to their age, the majority of the respondents fall under the age up to 23 (81.0%). However, 13.5% are aged between 24 and 25, and the remainder 5.6% are aged 25 or more.

As already mentioned, the sample size by university is defined by the total number of undergraduate (BSc) and graduate (MSc) students. Two thirds of the interviewed students are from the BSc level (66.4%), and one third are MSc students. The structure found in the sample is in line with the population structure. Another variable of interest in the research was the field of study. With respect to that, more than half of the respondents (55.2%) come from technology oriented programmes (horticulture, agronomy, animal and life science and alike), while the remainder are students of economics and agrieconomics (44.8%). The highest contribution to the share of agrieconomics and economics students comes from UNIWA and UNINR, which are agricultural and life science universities with economic faculties.

Most of the students come from rural regions, living in rural towns or villages (70%). If we take the type of settlement as division criteria, 58.0% of the interviewed live in a city or town, while 42% live in villages.

Majority of the respondents (71.5%) have parents or friends, which have experience of running their own business. Almost half of the respondents (47.6%) have parents who have run a family business. The proportion of students whose parents have run a family farm as a family business is 17.0%.

Based on the previous experience and/or contact with entrepreneurship, either their own or of persons close to them, respondents were assigned the level of entrepreneurial experience score. From this, two groups were formed: (1) with the low level of entrepreneurial experience (62.5%), and (2) with the high level of entrepreneurial experience (37.5%). As explained in the literature review, we also included religious orientation in the questionnaire to check if it is related to the

self-employment intention. We found that 77.8% of interviewees are believers (theists) and 22.2% of them are not (atheists or agnostics).

The respondents were asked several questions about preferences regarding to their career. One being the preferable place of work, and more than two thirds of students (67.2%) would rather work in private than in public or governmental sector. Moreover, 33.7% of those would rather work in private sector prefer to be self-employed. The second question, concerning their future career, referred to their intention to run a farm. One fifth (20.3%) of the respondents totally agree with the suggested idea to run her/his own farm, whereas 34.2% totally disagree with the idea. In addition to these two guiding questions, the decisive indicator of self-employment intention in the research is the SEINT variable.

The level of self-employment intention (SEINT)

To measure how strong, the students' intent on self-employment is, we used the variable SEINT. The variable value represents the average level of a respondent's agreement with five statements in the corresponding Likert scale. The maximum value, five, stands for total agreement; meaning the strongest intention of self-employment. While the minimum value of one, means that a person does not intend to be self-employed. A reliability analysis was carried out and Cronbach's alpha showed the scale to reach acceptable reliability, $\alpha = 0.79$. We got 1,153 valid answers in the value range from 1 to 5, the mean value is 2.97, median and mode are 3.00, and standard deviation is 0.978. The results are quite similar to McStay's (2008) study where the same measurement scales were used on students of an Australian university and the mean was 3.19.

The data set distribution is slightly asymmetric to the left, and the normal distribution is not statistically confirmed (Shapiro-Wilk statistics = 0.984, $p=0.000$). Based on the cumulative frequencies, 30.0% of students are found to agree or totally agree with the idea of self-employment (scores 3.5-5.0), though 31.4% do not agree

or totally disagree (scores 1.0-2.5). The remaining 38.6% neither accept nor reject the idea of self-employment. On the opposite extremes are 6.6% of those showing total agreement with self-employment intention, and 8.8% of respondents who totally disagree with it. The results obtained allow the participants to be divided into those who have the self-employment intention, i.e. high SEINT score, and those who do not have this intention.

SEINT scores by demographic and social variables

One of the objectives of the paper was to explore how personal factors are related to students' inclination towards self-employment. The analysis included ten demographic and social factors listed in the Table 3. All the factors were tested for significant correlation with the SEINT score.

In agreement with the majority of previous studies, we found that female students have a lower self-employment intention score. It is interesting that students of agrieconomics or economics have a lower average score on SEINT than students from other fields. Though, we may explain this result with the significantly higher share of females in the study programmes related to economics (Pearson Chi-Square = 15.694, $p=0.000$). Our results also confirmed that students with more exposure to self-employment, either in their family or through other role models, have a significantly higher level of self-employment intention. Accordingly, students from families with family farms achieved a higher average score on SEINT than others.

Students from rural and urban regions are not significantly different, with respect to the SEINT score. However, it seems that the type of settlement is correlated with the score, as students coming from villages have a higher mean. It may be the consequence of less employment accessibility in smaller settlements, which leads to a greater occurrence of self-employment. Finally, as expected, the preferred place of employment is significantly correlated with the SEINT, showing that students who prefer employment in private business have a higher mean score.

Table 3. Results of ANOVA: SEINT score by demographic and social variables

Factor or variable	F value	p	The nature of the relation
Gender	52.194	0.000	Males achieved higher scores.
Age groups	1.484	0.218	No significant difference.
The level of study	1.682	0.195	No significant difference.
The field of study: 2 groups	15.308	0.000	Agrieconomics/economics students have lower score than others.
Previous experience with entrepreneurship level	84.647	0.000	Students with higher level achieved higher score.
The type of settlement of residence	4.423	0.036	Students coming from villages have higher scores.
The level of rurality of the region of origin	2.366	0.124	No significant difference.
Personal belief	2.936	0.087	No significant difference.
Preferred place of employment	93.700	0.000	Students that prefer private sector to public achieved higher scores.
Family farming experience	27.749	0.000	Those from families with farming have higher scores.

There is no evidence about association between the self-employment intention score and the following variables: (1) age, (2) level of study, (3) the level of rurality of the region of origin and (4) religious preferences.

SEINT scores and the country macroeconomic conditions

There are many external factors that affect a person's intentions and behaviour. Based on the literature reviewed, it can be said that macroeconomic conditions and conditions for starting a business are unavoidable factors that influence self-employment and entrepreneurship intentions. Led by this opinion, we used three macroeconomic variables to investigate if they are related to the students' self-employment intentions in different countries. First, we divided four countries in three groups regarding to GDP: (1) low GDP (Serbia), (2) medium GDP (Croatia and Poland), and (3) high GDP (Slovakia). The highest SEINT score have respondents from the low GDP country, i.e. UNINS ($F=9.459$, $p=0.000$). Another variable, the unemployment rate, was used to split respondents in two groups: (1) from countries with unemployment rate below 10% (Slovakia and Poland), and (2) from countries with employment rate above 10%

(Croatia and Serbia). Again, a significant difference was found between the groups: respondents from Croatia and Serbia have a higher mean for SEINT variable ($F=4.254$, $p=0.039$).

Finally, we tested differences between respondents regarding the country rank on the World Bank Starting a Business list. We divided the countries in three groups: (1) Serbia (rank 32), (2) Slovakia and Croatia (ranks 83 and 87), and (3) Poland (rank 120). The SEINT variable mean is significantly higher for group 1, i.e. for students from UNINS ($F=10.026$, $p=0.000$).

The results of the analysis from the Table 4 indicate that self-employment is more popular among students from countries with lower macroeconomic indicators. If we accept that students will be more inclined to self-employment if macroeconomic indicators in the country are lower, we should consider these indicators as push factors for self-employment. In addition, if we combine the microeconomic indicators with the conditions for launching one's own business, which are the most favourable in Serbia, the highest SEINT score recorded among the UNINS students can be considered as expected.

Table 4. Results of ANOVA: SEINT score by macroeconomic variables

Factor or variable	F value	P-value	Finding
GDP per capita (3 levels)	9.459	0.000	The lowest GDP - the highest SEINT score mean (UNINS)
Unemployment rate (2 levels)	4.254	0.039	Higher unemployment - higher the SEINT score meant
Country Starting a Business Ranking (3 levels)	10.026	0.000	Higher ranking (below 50) - higher the SEINT score mean

Differences between the universities

With respect to the key construct of our research, the SEINT score, we found that mean scores for UNINS are significantly higher than for UNIZG, UNINR and UNIWA (Table 5). There are no significant differences in SEINT score between UNINR, UNIZG and UNIWA.

Table 5. The SEINT score by university

University	N	Mean	Std. Dev.	Std. Error
UNIZG	232	2.8867	0.91520	0.06009
UNIWA	302	2.9762	0.91975	0.05293
UNINS	185	3.2476*	1.09520	0.08052
UNINR	434	2.8865	0.97874	0.04698
Total	1153	2.9680	0.97828	0.02881

* Significantly different from others: ANOVA $F=6.678$, $p=0.000$; Games-Howell post hoc test UNINR $p=0.001$, UNIZG $p=0.002$, and UNIWA $p=0.026$

To obtain a greater insight into the differences between universities regarding to the self-employment intention, the differences with respect to demographic and social factors were explored. Table 6 depicts the results of the exploration according to these factors.

The universities differ regarding to the student's gender structure. The prevalence of females is the smallest at UNIWA. Nevertheless, when compared to other universities, the UNIWA subset has a larger share of (1) students studying economics/agriconomics, (2) those with the high level of previous entrepreneurial experience, and (3) students from families with farms.

The students at UNINS are significantly older than others, with the largest proportion of them in the age group 24+. In comparison with UNIWA and UNINR, UNIZG and UNINS have smaller proportion of students who study economics or agrieconomics, and who prefer employment in private business sector.

The smallest proportion of students coming from rural areas or settlements was found at UNIZG. On the other side, UNIWA and UNINS have the largest proportion of students coming from rural regions, as well as those who are believers.

The results show that six of the observed ten demographic variables are significantly associated with SEINT score, which means that the level of self-employment intention is higher for certain modalities or values of these variables (Table 3). In view of the likelihood of self-employment, the values that we associate with higher SEINT can be considered as desirable. Data by universities show that students from different universities significantly diverge in the same six variables (Table 6). At the same time, at different universities the desirable values are obtained by different variables. Neither one of the universities has desirable values for all six variables. For example, UNIWA students have desirable values by four out of six variables: gender, previous experience with entrepreneurship, place of living, and family farming experience. In the same time, students at UNINS, with the significantly higher SEINT score, have desirable values by variables: field of study and place of living.

Given the described results of analysis by demographic variables, the absence of statistically significant

Table 6. Results of testing differences among universities using Chi-Square

Variable	χ^2 Value	p value	The nature of the difference
Gender	9.932	0.019	The prevalence of females is the lowest at UNIWA.
Age groups	186.810	0.000	UNINS has higher share of students in the age group 24+.
The level of study	4.381	0.223	No significant differences.
The field of study: 2 groups	38.886	0.000	UNIWA has the highest share of (agri)economists, UNIZG and UNINS the lowest.
Previous experience with entrepreneurship level	48.646	0.000	Share of those with experience is the highest at UNIWA, and the lowest at UNINR.
The type of settlement of residence	27.052	0.000	Less students come from villages at UNIZG.
The level of rurality of the region of origin	30.467	0.000	UNIWA and UNINS have more students from rural areas than UNIZG and UNINR.
Personal belief	45.025	0.000	At UNIWA and UNINS are more students who pleaded as believers.
Preferred place of employment	54.090	0.000	UNIZG and UNINS students less prefer private sector than UNIWA and UNINR.
Family farming experience	93.542	0.000	The highest share of students from/with family farms is at UNIWA, and the lowest at UNINR.

differences in SEINT at three universities - UNIZG, UNINR and UNIWA - is not surprising. What distinguishes UNINS from other universities are macroeconomic conditions in the home country. Serbia has the lowest GDP per capita and the highest unemployment rate, while at the same time this country ranks the highest on the World Bank starting-a-business list among the four states. Therefore, we can accept that macroeconomic and starting-a-business conditions in a particular area are related to self-employment intentions.

CONCLUSIONS

There is a large number of factors that can increase, or decrease, the number of self-employed persons in a society, but the very act of self-employment is always preceded by intention. Given the importance of intention for the manifestation of a specific behaviour, the intention of self-employment among university students was investigated. The study was conducted on a random sample of students from agricultural universities and faculties from four countries: Croatia, Poland, Slovakia and Serbia.

It was found that 30% of surveyed students expressed an intention of self-employment. Students from three universities (UNIZG, UNIWA and UNINR) have similar results for SEINT, with the result for UNINS students being found to be significantly higher. A possible reason for the relatively uniform results in SEINT by universities is the fact that at each university the respondents have a combination of qualities that are positively, and those that are negatively correlated with the intent of self-employment. These combinations vary among the universities.

Analysing the macroeconomic indicators for each country, and the socio-demographic indicators of the respondents, it was found that the respondents achieved significantly different results for some of these indicators. At universities from countries with (1) a higher GDP per capita, (2) lower unemployment rates, and (3) lower rank in terms of ease of business start-up, students showed a lower level of self-employment intent. Furthermore, a higher SEINT was found with (1) male respondents, (2) respondents who have more experience with entrepreneurship and (3) respondents coming from

families with family farms. In addition, students who came from villages (rural areas?) demonstrated a higher intention of self-employment.

The results of the research confirm the findings of some previous studies, especially with regards to the connection between self-employment intention and gender. The results at UNINS is considered particularly interesting, as it was found that a crucial role for significantly different mean score of students from this university played the variables related to macroeconomic environment, and conditions for starting of their own business. Meaning that a low income level and a lack of employment opportunities, coupled with favourable business start-up conditions, leads to greater self-employment in the student population.

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