INVESTIGATING YOUTH ENTREPRENEURIAL INTENTIONS' DRIVERS IN VISEGRAD COUNTRIES

Anna Pilková[1], Marian Holienka[1], Zuzana Jančovičová[2]

[1]Department of Strategy and Entrepreneurship, Faculty of Management, Comenius University in Bratislava, Odbojárov 10, 820 05 Bratislava, Slovakia
[2]Department of Economy and Finance, Faculty of Management, Comenius University in Bratislava, Odbojárov 10, 820 05 Bratislava, Slovakia

Abstract

PILKOVÁ ANNA, HOLIENKA MARIAN, JANČOVIČOVÁ ZUZANA. 2017. Investigating Youth Entrepreneurial intentions' Drivers in Visegrad Countries. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis,* 65(6): 2055–2065.

Entrepreneurial intention is the first step in entrepreneurial process. It is seen as one of the strongest predictors of entrepreneurial behavior. Measurement of key factors that influence entrepreneurial intention is still great challenge for researchers. The aim of this paper is both to analyse the significance of selected individual-level factors in their effect on entrepreneurial intention among youth in Visegrad countries (Czech Republic, Hungary, Poland and Slovakia) and contribute to solve the methodological gap in intention analysis applying non-traditional methods for this field – decision tree algorithm method alongside logistic regression models that served as robustness check of our findings. Prior to this a univariate (using Weight of Evidence and Information value analysis) and multivariate analysis (using Pearson Chi-square test of good fitness and Cramer's V) was conducted. Based on Global Entrepreneurship Monitor (GEM) data we found out that out of four studied groups of factors only two (personality-traits and personal background related factors) are significant drivers of entrepreneurial intentions among youth in Visegrad countries.

Keywords: entrepreneurship, entrepreneurial intentions, youth, young adults, Visegrad countries

INTRODUCTION

Youth and young adults belong to the groups of European population that ask for special attentions both from politicians and researchers. Main reason behind this interest is a high level of youth and young adults' unemployment rate. Both politicians and researchers try to find ways how to increase employment activities of youth. One of the possible solutions how to do it is applying inclusive entrepreneurship approach. Inclusive entrepreneurship is a concept that represents involvement of under-represented or disadvantaged groups in entrepreneurial activities, leading, through unleashing their creative potential, towards the economic self-sufficiency that is beneficial for themselves and for society. Youth and young adults are considered to be one of such disadvantaged groups. However, a decision to become an entrepreneur is complex and asks for deep study. Perspective on entrepreneurship as a process is one approach how to study this decision. The first and very important phase of this process is usually considered to be an intention. This step is influenced by many factors and has been considerably exposed to entrepreneurship research. Researchers focused on studying factors which are the most important for encouraging of intentions to start new business. However, despite decades of research of different factors that influence entrepreneurial intentions, there are still gaps in this field of studies. While there are numerous studies on entrepreneurial intentions focused on student populations (e.g. Franco *et al.*, 2010; Galicia *et al.*, 2015; studies based on Global University Entrepreneurial Spirit Students' Survey), significantly fewer studies are focused on youth population in general. Furthermore, in

the context of Visegrad countries, studies from this field which would use extensive quality data based on representative samples are rather scarce. In addition to that, current researchers use statistical methods like descriptive statistics, variance analysis, or regression analysis (assuming linear relation between the independent variables and dependent variables) (Tabachnick & Fidell, 2001; Peng, Z. *et al.*, 2012). This methodological approach leads to biased results.

Our paper's aim is to contribute to overcome some of the gaps and methodological limitations addressed above through an analysis of the significance of selected individual-level factors in their effect on entrepreneurial intention among youth and young adults in Visegrad countries, by applying decision tree algorithm method alongside logistic regression models that served as robustness check of findings.

In our analysis, we employed Global Entrepreneurship Monitor (GEM) data for Czech Republic, Hungary, Poland and Slovakia for four consecutive years 2011–2014. Based on theoretical framework related to entrepreneurial intention we studied three groups of factors: a) personality traits-related factors (entrepreneurial self-confidence, fear of failure, ability to identify opportunities); b) contextual factors (social attitudes towards entrepreneurship – desirability of entrepreneurship as carrier choice, status of entrepreneurs in society, media attention towards entrepreneurship); c) personal background-related factors (age, gender, education, employment status, knowing other entrepreneurs). To control for country and time influence we also added proxies for country and year of survey. The rest of the paper is structured as follows: in section 2 literature on entrepreneurial intention is reviewed. Section 3 describes research design in terms of sample, data and methodology applied. In section 4 we present our results, while section 5 contains discussion and implications.

Entrepreneurial Intentions in Literature

Entrepreneurial intentions are entrepreneur states of mind that direct attention, experience and actions toward a business concept (Bird, 1988). This is a basic, general definition. However, in literature there are no universal definitions on individual's entrepreneurial intentions. Some authors apply concepts like career orientation (Francis & Banning, 2001) or nascent entrepreneurship (Korunka *et al.*, 2003). According to Krueger, Reilly & Carsrud (2000), entrepreneurial intentions are seen as the product of an individual's self-efficacy, attitude and the subjective norms toward entrepreneurial behaviour. However, according to the results of the literature review on entrepreneurial intentions (Liňán & Fayolle, 2015), the decision to become an entrepreneur is influenced by interaction of several factors, including: core entrepreneurial intention model, personal level

variables, entrepreneurship education, context and institutions and the entrepreneurial process. On the other side, operational definitions are applied particularly for entrepreneurial intentions measurement. According to GEM (Bosma *et al.*, 2012), entrepreneurial intention is defined in two ways: a) as a percentage of population who is expecting to start a new business in the next three years (this group might involve those who have these intentions and have indicated to be a nascent entrepreneur), and b) as a percentage of population who is expecting to start a new business in the next three years, but considering only those individuals who are currently not involved in entrepreneurial activity. This approach allows to researchers to separate these two groups of individuals and study their behavior. According to literature review, as is stated above, entrepreneurial intention models are one of the components that enter into interaction with the others and influence decision to become an entrepreneur. In the last decades of the 20th century an extensive empirical research on entrepreneurial intentions has come out to formulation of a few models, with three of them becoming the most utilized in entrepreneurship literature. The first is the Theory of Planned Behavior (Ajzen, 1991), the second one is Shapero and Sokol's (1982) model of the entrepreneurial event, and the third one is Bandura's (1977) model of social learning. In addition to that, Robinson *et al.* (1991) in their model of entrepreneurial attitudes orientation described the attitude of the entrepreneur with more than personality and demographic characteristics. However, in 21st century some researchers developed new models based on modification and critiques of the previous ones. Among them, Elfving, Brännback & Carsrud (2009) focused on creation of a contextual model of entrepreneurial intentions that should eliminate limitations of previous models. In the psychological literature, intentions have proven to be the best predictor of planned behaviour. According to these theories, entrepreneurial intentions are seen as one of the strongest predictors of entrepreneurial behaviour. One of outcomes of studying all these models and theories is that they analyze different factors that affect individual's entrepreneurial intentions. Researchers have studied these factors from different perspectives and tried to classify them into logical categories. Fini *et al.* (2009) divided factors according to the two broad domains: a) individual domain (demographics, personal traits, psychological characteristics, individual skills and prior knowledge, social ties and networks); and b) contextual domain (environmental support, environmental influence, organizational factors). More comprehensive analysis of literature is contained in Al-Harrasi *et al.* (2014), and is divided into four groups: a) personality traits-related factors (self-confidence, risk-taking propensity, needs for achievements, locus of control, innovativeness, autonomy), b) contextual related factors (cultural,

social, economic, political, perceived support); c) motivational related factors (need for more income, desire for security, desire for status); and d) personal background related factors (age, gender, education, family background and business experiences). However, some researchers in addition to the lack of a clear definition of individual entrepreneurial intent, stress the absence of a systematically derived and reliable metric for its measurement, which has an impact on progress related to studying entrepreneurial intention (Bruyat & Julien, 2001; Gartner, 1985; Shane & Venkataraman, 2000). In his paper, Thomson (2009) offers further clarification to the concept of individual entrepreneurial intent, and the development and validation of an internationally reliable measurement.

Based on the literature review elaborated above, this paper provides a comprehensive analysis of the impact of individual factors studied in three main groups on youth's entrepreneurial intentions in Visegrad countries, applying decision tree algorithm and logistic regression models.

MATERIALS AND METHODS

Our analysis is based on Global Entrepreneurship Monitor (GEM) data. GEM is the largest academic study focused on entrepreneurship in the world. It annually monitors entrepreneurial attributes and activities through the two main primary data collection instruments – Adult Population Survey (APS) and National Expert Survey (NES), providing a unique database, which enables to obtain insights on the patterns and trends in entrepreneurship in the analyzed economies (Singer *et al.*, 2015). The APS is being executed every year in each participating country and collects individual-level data through a standardized survey instrument administered to representative samples of minimum 2000 individuals from adult populations (18 to 64 years old). The GEM methodology requires country APS samples to be randomly selected and interviewed by professional research agencies (in V4 countries interviews are conducted on phone), and to be representative for working-age populations by age (using 5 age categories) and gender

We created a pooled sample using GEM APS individual level data for V4 countries from 2011 to 2014, with age range within 18–34 years as the only selection criteria, resulting to a sample of 11239 individuals (2459 from Czech Republic, 2643 from Hungary, 3091 from Slovakia and 3046 from Poland). In this sample, we have identified

I: *Explanatory variables*

Variable	Description	Values
Personality traits-related factors		
Entrepreneurial self-confidence	Perception of having knowledge, skill and experience required to start a new business	1 = yes; 0 = no
Fear of failure	Having a fear of failure that would prevent one from starting a new business	1 = yes; 0 = no
Ability to identify opportunities	Belief in good opportunities for starting a business in the area where respondent lives, in the next 6 months	1 = yes; 0 = no
Contextual related factors		
Status of entrepreneurs in society	Agreement that in respondent's country successful new entrepreneurs possess high levels of status and respect	1 = yes; 0 = no
Personal background related factors		
Age	Age category	1 = 18–24; 2 = 25–34
Gender	Gender of the respondent	Male = 1, female = 2
Education	Highest achieved educational attainment	1 – lowest; 3 – highest
Employment status	Respondent's current employment status	9 categories
Knowing other entrepreneurs	Knowing personally someone who started a business in recent two years	1 = yes; 0 = no
Business discontinuance	Whether the respondent already ceased his or her own business in the past 12 months	1 = yes; 0 = no
Household income	Total annual household income classified for country into one of three ranges (lowest/middle/upper 33 %-tile).	1 = lowest 33%-tile; 2 = middle 33%-tile; 3 = upper 33%-tile
Proxies		
Country	Slovakia, Czech Republic, Poland, Hungary	Country codes
Year of survey	2011–2014	Year of survey

2258 individuals with entrepreneurial intentions who owned or managed no businesses and 6753 individuals who owned or managed no business and had no entrepreneurial intentions. This was our primary sample since we wanted to analyze the population not involved in any type of business at that time but having intentions to do so in the future. This sample was then analyzed to extract clean data sample (no missing values or individuals not knowing the answer to a specific question – variable). Final data sample comprised of 1632 individuals with entrepreneurial intentions (who had owned or managed no business) and 4626 with no entrepreneurial intentions (who had owned or managed no business). Frequencies (representation in % of each variable in the dataset) of the primary and final data samples have not changed significantly.

This analysis used GEM variables. Dependent variables indicated having entrepreneurial intention, i.e. expecting to start, alone or with others, a new business, including any type of self-employment, within the next three years.

The explanatory variables can be divided into three categories based on the literature (Tab. I).

In the first step of studying entrepreneurial intentions within the population of young individuals aged 18–34 we used a univariate (using Weight of Evidence and Information value analysis) and multivariate analysis (using Pearson Chi-square test of good fitness and Cramer's V). In the second step, we applied a decision tree model. Decision tree model is a powerful tool used for classification and prediction. Based on our data, the decision tree model is method used

for obtaining or predicting a set of characteristics which should a young individual possess in order to have an intention to start a business. Graphically, the decision tree model is represented in a form of "up-side-down" tree and we present the results from top to bottom. An important feature of this model is the easiness of its interpretation once it is constructed. The construction of the model itself is based on the premise that we look for "the purest" set of individuals with specific characteristics – the algorithm chooses individual's characteristics step by step and ideally ends when it finds a set of individuals with all the same characteristics predicting selected dependent variable (alternatively, the algorithm ends when the set is too small to be divided again). This is done through calculation of purity measures (in our model entropy is used) and then the information gain is calculated. Information gain is a measure to decide whether the supposedly added variable is to be beneficial to the model. At each step, the variable with the highest information gain is added to the model. In our model, the algorithm stopped when the final set of individuals was about to be smaller than 5 % of the whole population.

After creating the decision tree model, a binomial logistic regression model was constructed as a robustness check for our findings. This model estimates the probability of an event happening. In our case this event was having intentions to start a business, compared to not having such intention in the close future. We compared the variables and their odds in the final regression model to the results of the decision tree model.

II: *Results of univariate analysis*

Variable	Information Value
Entrepreneurial self-confidence	0.5384
Knowing other entrepreneurs	0.2300
Ability to identify opportunities	0.1120
Gender	0.0962
Fear of failure	0.0862
Age	0.0623
Occupation – Student	0.0604
Occupation – Part time	0.0365
Occupation – own business	0.0363
Seeking Employment	0.0339
Occupation – Full time	0.0325
Household income	0.0256
Business discontinuance	0.0160
Education	0.0040
Employed	0.0027
Status of entrepreneurs in society	0.0020
Unemployed	0.0006
Occupation – at home	0.0003
Occupation – other	0.0002

To estimate the parameters of each model we used statistical software R, namely its packages and their functions for decision tree models and built-in functions for Generalized Linear Models (GLM) which was set on binomial family with logit transformation. The selection of the best appropriate logistic regression model was then conducted through step-wise selection.

RESULTS

Tab. II contains results of univariate analysis. This analysis consists of calculation of Weight of Evidence and Information value for all our explanatory variables. This is a widely used measure for grouping variables and expressing the predictive power of the independent variable in relation to the dependent variable. We can see that the variables with the strongest predictive power are Entrepreneurial self-confidence (very strong predictive power), Knowing other entrepreneurs and Ability to identify opportunities (medium predictive power). Variables with Information value in range of 0.1–0.02 are considered to be weak predictors. In our analysis we identified several such predictors, namely Gender (being very close to medium predictive power), Fear of failure, Age category, Occupational statuses of being a Student, an Employee with a part-time contract, or a full-time contract, Seeking Employment and Household

income Information value less than 0.02 indicated no predictive or explanatory power.

In the Tab. III we can find the results of multivariate analysis conducted using Chi-square test (which indicates the independence between variables) and Cramer's V (which indicates the strength of association when analyzing factor variables). The dependence of variables based on results of the Chi-square test is indicated by bolding. The results of Cramer's V test are the numbers themselves. We can see, that the two tests are in accordance – no independence discovered by Chi-square test (not bolded cells) means any or very weak association measured by Cramer's V. Between the explanatory variables, there are only few which we can consider as dependent from each other (bold and underlined): Business discontinuance and Full-time employment occupation status, Status of entrepreneurs in society and Occupation – own business, Seeking Employment and Entrepreneurial self-confidence, Being Student and the Household Income, Unemployment and Fear of failure and Business discontinuance and Ability to identify opportunities. Regarding the response variable, we can see a strong association between entrepreneurial intentions and Occupation at home and other type of occupation (mostly handicapped). Since none of the variables is strongly independent of any other, we can consider them for our models.

III: *Results of correlation analysis*

	Entrepreneurial intentions	Gender	Age	Education	Occupation – full-time	Occupation – part-time	Occupation – own business	Seeking occupation
Entrepreneurial intentions	1.000							
Gender	0.000	1.000						
Age	0.000	**0.156**	1.000					
Education	**0.290**	0.000	0.000	1.000				
Occupation – full-time	0.000	0.000	0.000	0.000	1.000			
Occupation – part-time	0.000	**0.275**	0.000	0.002	0.000	1.000		
Occupation – own business	0.000	0.000	0.192	0.000	0.000	0.000	1.000	
Seeking occupation	0.000	0.044	0.000	0.000	0.000	0.000	0.007	1.000
Other not mentioned type of occupation	<u>0.936</u>	0.000	0.000	**0.228**	0.000	0.041	0.005	**0.053**

	Entrepreneurial intentions	Gender	Age	Education	Occupation – full-time	Occupation – part-time	Occupation – own business	Seeking occupation
Student	0.000	0.014	0.000	0.000	0.000	0.000	0.006	**0.564**
Occupation – at home	<u>**0.663**</u>	0.000	0.000	0.000	0.000	**0.211**	0.001	0.000
Unemployed	**0.583**	**0.327**	0.008	0.000	0.000	0.000	0.000	0.000
Employed	**0.125**	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000
Household income	0.000	0.000	**0.245**	0.000	0.000	**0.318**	0.072	0.000
Status of entrepreneurs in society	**0.238**	0.045	0.000	0.000	0.000	**0.262**	<u>**0.766**</u>	**0.227**
Entrepreneurial self-confidence	0.000	0.000	0.000	0.000	0.000	**0.056**	0.000	<u>**0.625**</u>
Fear of failure	0.000	0.000	0.000	0.000	0.000	0.001	0.000	**0.276**
Knowing other entrepreneurs	0.000	0.000	0.017	0.000	0.000	**0.393**	0.000	**0.329**
Ability to identify opportunities	0.000	0.000	0.017	0.000	**0.123**	0.000	0.000	0.001
Business discontinuance	0.000	0.000	0.007	0.018	<u>**0.682**</u>	**0.190**	0.000	0.076

	Other not mentioned type of occupation	Student	Occupation – at home	Unemployed	Employed	Household income	Status of entrepreneurs in society
Other not mentioned type of occupation	1.000						
Student	0.000	1.000					
Occupation – at home	0.000	0.000	1.000				
Unemployed	0.000	0.000	0.000	1.000			
Employed	0.000	0.000	0.000	0.000	1.000		
Household income	0.000	<u>**0.689**</u>	0.000	0.000	0.000	1.000	
Status of entrepreneurs in society	<u>**0.896**</u>	0.032	**0.145**	**0.174**	0.000	0.001	**1.000**
Entrepreneurial self-confidence	**0.559**	0.000	**0.987**	0.021	0.000	0.000	0.000
Fear of failure	**0.234**	0.000	0.039	<u>**0.716**</u>	0.000	0.036	**0.200**
Knowing other entrepreneurs	**0.240**	0.470	**0.585**	0.000	0.000	0.000	0.000
Ability to identify opportunities	0.021	0.000	**0.358**	0.000	0.000	0.000	0.004
Business discontinuance	**0.199**	0.000	**0.728**	0.021	**0.190**	0.393	0.002

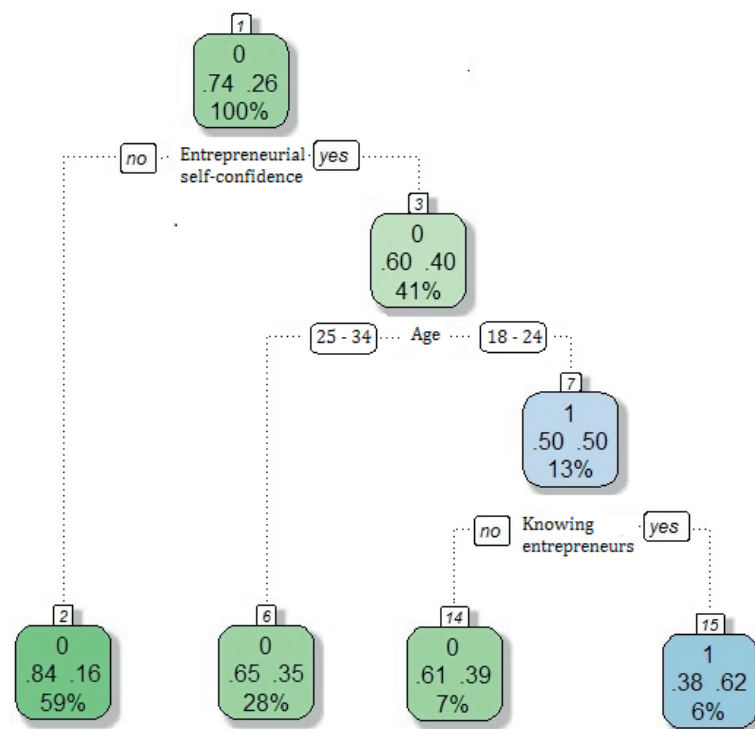|	Entrepreneurial self-confidence	Fear of failure	Knowing other entrepreneurs	Ability to identify opportunities	Business discontinuance
Entrepreneurial self-confidence	1.000				
Fear of failure	0.000	1.000			
Knowing other entrepreneurs	0.000	**0.216**	1.000		
Ability to identify opportunities	0.000	0.000	0.000	1.000	
Business discontinuance	0.000	**0.112**	0.000	<u>**0.632**</u>	1.000

The results of decision tree model conducted in order to identify the drivers of young individuals aged 18–34 years having intentions to start their own business suggest that only three out of twenty-one variables are significant (Fig. 1).

From the decision tree model below, we can see that 26% of all the observed population has intention to start a business. The first important characteristic is the entrepreneurial self-confidence – perception of having knowledge, skill and experience required to start a new business. In particular, 59% young individuals indicated no entrepreneurial self-confidence and out of this 84% don't have any intention to start a business. For the other 41% of the observed population who believes to have entrepreneurial self-confidence (40% of them have intention to start a business) the second characteristic was discovered, which is age. When an individual believes to have

entrepreneurial self-confidence, and is aged 18–24 years, 50% of these individuals have intentions to start a business. If the respondent is older, only 28% of such individuals have intention to start a business. The third characteristic is knowing personally someone who started a business in recent two years. When one believes to have the skills to manage his own business, is aged 18–24 years and knows someone who has started his own business, 62% of these individuals have intention to start business. The splitting has stopped afterwards because we reached a set threshold of minimum 5% of population in splitting sample.

The results of binomial logistic regression conducted in order to cross-check the results of decision tree model suggest that eleven out of twenty-one analysed variables are significant (Tab. IV).

1: *Results of decision tree model*

IV: *Regression coefficients*

	Coeff.	p-value	S.E.	Sig.
(Intercept)	–0.7347	0.0006	0.2146	***
Personality traits-related factors				
Entrepreneurial self-confidence (yes)	1.1640	0.0000	0.0648	***
Fear of failure (yes)	–0.3184	0.0000	0.0628	***
Seeing opportunities (yes)	0.4672	0.0000	0.0671	***
Contextual related factors				
Status of entrepreneurs in society	–	–	–	–
Personal background related factors				
Age (25–34)	–0.3799	0.0000	0.0765	***
Gender (woman)	–0.3454	0.0000	0.0648	***
Education	–	–	–	–
Employment status–full time employment (no)	0.1643	0.0465	0.0826	*
Employment status–part time employment (no)	–0.1838	0.0614	0.0982	.
Employment status–self-employed	–	–	–	–
Employment status–seeking employment (no)	–0.3341	0.0002	0.0897	***
Employment status–retired / disabled	–	–	–	–
Employment status–student (no)	–0.2620	0.0037	0.0903	**
Employment status–at home (no)	–0.1778	0.0495	0.0905	*
Employment status–unemployed	–	–	–	–
Employment status–employed	–	–	–	–
Knowing entrepreneurs (yes)	0.6252	0.0000	0.0632	***
Business discontinuance	–	–	–	–
Income	–	–	–	–
Other variables				
Country	–	–	–	–
Year of survey	–	–	–	–

* Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level; *** Correlation is significant at the 0.001 level; –missing coefficients – variable wasn't a part of the final model.

In Tab. IV coefficients describe the effect of a variable on the odds of having intention to start a business relative to not having intention to start a business at all. If the coefficient is positive, holding all other variables equal, an increase in a variable raises the likelihood of having the entrepreneurial intention. Thus, as can be seen from the results, the odds of having entrepreneurial intention among young population is positively influenced mainly by having an entrepreneurial self-confidence (with the highest coefficient value in the model), personally knowing someone who had recently started a business, and perception of good business opportunities. On contrary, significantly negatively related to the odds of having entrepreneurial intentions is mainly having a fear of failure, belonging to the age category 2 – young population between 25 and 34 years (with lowest coefficient value in the model which means that if the respondent is older than 24 years, probability that he has intention to start a business decreases), gender – being a woman and not seeking job.

Comparing the two models, we can see in the Tab. V that logistic regression model is more complex, involving more variables. Among the personality traits-related factors, both models identify the entrepreneurial self-confidence as the most influencing one. From personal back-round related factors category, in the decision tree model, the second most influencing factor on the intention to start a business was the age of the respondent, while in the logistic regression model, this variable had the fourth strongest explanatory power. It was "outrun" by seeing an opportunity to start a business within the category of personality traits-related factors. In both models, the age category predict that the respondent has to be younger (18–24 years old) to be identified to have stronger intentions to start a business. Further, from the personal background related factors category, knowing entrepreneurs was identified as the second most influencing in the logistic regression model and the third in the decision tree model. To sum it up, the two significant categories are personality traits and personal background related factors. As for the variables from the second category – contextual related factors, none was identified as significant to predict the intention to start business.

V: *Comparison of two models*

Variables	Decision Trees	Logistic Regression
Personality traits-related factors		
Entrepreneurial self-confidence	1.	1.
Fear of failure	–	7.
Seeing opportunities	–	3.
Contextual related factors		
Status of entrepreneurs in society	–	–
Personal background related factors		
Age	2.	4.
Gender	–	5.
Education	–	–
Employment status–full time employment	–	11.
Employment status–part time employment	–	9.
Employment status–self-employed	–	–
Employment status–seeking employment	–	6.
Employment status–retired / disabled	–	–
Employment status–student	–	8.
Employment status–at home	–	10.
Employment status–unemployed	–	–
Employment status–employed	–	–
Knowing entrepreneurs	3.	2.
Business discontinuance	–	–
Income	–	–
Other variables		
Country	–	–
Year of survey	–	–

CONCLUSION

Our paper had a twofold aim: both to identify significance of selected individual-level factors in their effect on entrepreneurial intention among youth in Visegrad countries, and to contribute to overcome some of the gaps and methodological limitations addressed in literature review applying univariate and multivariate analysis and non-traditional methods in entrepreneurial intention analysis (decision tree algorithm alongside with binomial logistic regression models).

These two statistical methods contradict the standard statistical methods like descriptive statistics, variance analysis, regression analysis, cluster analysis and path analysis that can lead to a biased result, which assume linear relation between the independent variables and dependent variables and are hard to present the relations between variables as a whole. The logistic regression is a rather powerful tool to predict probabilities of event occurring. Based on the character of the data, it is a valid tool to predict intention to start a business, since based on specific characteristics of an individual, we can assume the probability of him/her really having intentions to open his/her own business. Then, it is true but it doesn't handle the immediate interaction between the independent variables itself. This was approached by employing decision tree model, which creates links between the characteristics.

Our aim was to shed light on the topic of youth intention factors, which is frequently discussed in general, but rather under-researched from the perspective of our specific region and in terms of the methods which we have applied. Based on theoretical framework we have studied three groups of factors that influence youth entrepreneurial intentions. According to our findings, only two groups of factors (personality-traits and personal background related factors) are significant drivers of entrepreneurial intentions. The first group contains personality-traits related factors. In our results, the entrepreneurial self-confidence proved the highest predictive power in univariate analysis and in both models is the factor which has the highest influence (1st position among all studied factors). Self-confidence is considered a valuable individual asset and a key personal success because it makes people happier, and it improves the individual's motivation to undertake projects and persevere in the pursuit of these goals (Al-Harrasi, *et al.*, 2014; Fatoki, 2010; etc.). Self-confidence is the only factor from this group chosen by our decision tree model. Both in results of the univariate analysis and in

results provided by the logistic regression model, perception of good entrepreneurial opportunities has also high influence (3rd position) on entrepreneurial intention. Researchers and practitioners agree that without opportunities, entrepreneurship cannot occur. And if one talks about opportunities, one should also discuss intentions (Nielsen, *et al.*, 2012). According to both our findings and the literature, ability to see opportunities belongs to the crucial personality-traits (Bhave, 1994; Shane, 2003). The last factor in this group is fear of failure which can be understood as a proxy of risk aversion. In literature, risk taking propensity is a crucial factor of entrepreneurial intention (Estay *et al.*, 2013). According to our findings, it is a significant but rather weaker factor. Similar to V4 countries, empirical research indicated importance of variables related to self-confidence and opportunities perception (Linan, 2008; Pruett *et al.*, 2009; Chen and He, 2011; Geldhof *et al.*, 2013) as well as fear of failure or risk aversion (Geldhof *et al.*, 2013).

The most interesting of our finding is that contextual related factors (the second group) are not significant drivers for entrepreneurial intention among our sample of youth individuals in Visegrad countries. According to Al-Harrasi *et al.*, (2014), contextual factors can either facilitate or impede entrepreneurial activities. It looks like in Visegrad countries these two studied factors have no significance for youth intention and its prediction to start a new business.

In the last of the studied groups – personal background related factors – age has a significant influence both according to decision tree (2nd position) and logistic regression (4th position). According to our decision tree model, we found out that if one thinks to have the abilities and skills to start his/her own business, it is his/her age 18–24 which determines the further intentions to do so. Lastly, it is the fact, if the respondent knows somebody who has started his/her own business that shapes his/her intention. This finding also corresponds to patterns identified in previous research (Geldhof *et al.*, 2013; Chen and He, 2011). In this way, we created a link between the variables, where each of them in the model is predetermined by the other.

Based on the above-mentioned results, several implications for entrepreneurship policy directions were derived. First, besides creating generally favourable conditions for starting and running a business, targeted support is required to build and enhance enterprising mindset and entrepreneurial skills among youth population, resulting to increased self-confidence and ability to spot entrepreneurial opportunities. Second, policy instruments should focus on leveraging the effect of social capital formed by individuals' networks with entrepreneurs, e.g. by supporting and encouraging involvement in formal and informal networks, and organizing mentoring and internship schemes. Third, entrepreneurship policies should be aimed to reduce drop in entrepreneurial intentions among non-entrepreneur population with increase of age. Those who have established as employees and acquired professional experience and expertise shall not only abstain from entrepreneurship and stay on the path of an employee, but also consider entrepreneurship as an option to capitalize upon gained experience. Further analysis is required to better understand the origins of such pattern of declining entrepreneurial inclination.

Our findings in this paper contribute to current state of youth entrepreneurial intention research in Visegrad countries both from methodological and content driven point of view. This is a good basis for further studies on the other aspects of youth intention in this region.

REFERENCES

AJZEN, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2): 179–211.

AL-HARRASI, A. S., AL-ZADJALI, E. B. and AL-SALTI, Z. S. 2014. Factors impacting Entrepreneurial Intention: A Literature Review. *International Journal of Social, Management, Economics and Business Engineering*, 8(8): 2479–2482.

BANDURA, A. 1977. Self-efficacy: toward a unifying theory of behavioural change. *Psychological Review*, 84(2): 191–215.

BHAVE, M. P. A. 1994. Process model of new venture creation. *Journal of Business Venturing*, 9(3): 223–242.

BIRD, B. 1988. Implementing entrepreneurial ideas: The case for intention. *Academy Management Review*, 13(3): 442–453.

BOSMA, N. 2012. *GEM Manual: A report on the design, data and quality control of the Global Entrepreneurship Monitor*. London: GERA.

BRUYAT. C. and JULIEN, P. A. 2001. Defining the field of research in entrepreneurship. *Journal of Business Venturing*, 16(2): 165–180.

ELFVING J., BRANNBACK, M. and CARSRUD A. 2009. Toward A Contextual Model of Entrepreneurial Intentions. In: CARSRUD, A., BRÄNNBACK, M. (Eds.) *Understanding the entrepreneurial mind: Opeening the Black box*. New York: Springer-Verlag, pp. 23–33.

ESTAY, C., DURRIEU, F. and AKHTER, M. 2013. Entrepreneurship: from motivation to start-up. *Journal of International Entrepreneurship*, 11(3): 243–267.

FATOKI, O. O. 2010. Graduate entrepreneurial intention in South Africa: motivations and obstacles. *International Journal of Business and Management*, 5(9): 87–98.

FINI, R., GRIMALDI, R., MARZOCHCHI, G. L. and SOBRERO, M. 2009. *The foundation of entrepreneurial intention*. Working paper. DRUID.

FRANCIS, D. H. and BANNING, K. 2008. Who wants to be entrepreneur? *Journal of Academy of Business Education*, 1(2): 5–11.

FRANCO, M., HAASE, H. and LAUTENSCHLAGER, A. 2010. Students entrepreneurial intentions: an inter-regional comparison. *Education + Training*, 52(4): 260–275.

GALICIA, A. P. E., PEREZ, F. V. and REHAK, J. 2015. Entrepreneurial intention among Mexican university students: the effect of entrepreneurship education and professional networks. *Comenius Management Review*, 9(1): 13–29.

GARTNER, W. B. 1989. Who is entrepreneur? is the wrong question. *Entrepreneurship Theory and Practice*, 13(4): 47–68.

GELDHOF, J. *et al*. 2013. Fostering Youth Entrepreneurship: Preliminary Findings from the Young Entrepreneurs Study. *Journal of Research on Adolescence*, 24(3): 431–446.

CHEN, Y. and HE, Y. 2011. The impact of strong ties on entrepreneurial intention: An empirical study based on the mediating role of self-efficacy. *Journal of Chinese Entrepreneurship*, 3(2): 147–158.

KORUNKA, C., FRANK, H., LUEGER, M. and MUGLER, J. 2003. The entrepreneurial personality in thecontext of resources, environment and the startup procees – a configurational Approach. *Entrepreneurship Theory and Practice*, 28(1): 23–42.

KRUEGER, N. F., REILLY, M. D. and CARSRUD, A. L. 2000. Competing models of entrepreneurial intentions. *Journal of business venturing*, 15(5): 411–432.

LIÑÁN, F. 2008. Skill and value perceptions: how do they affect entrepreneurial intentions? *International Entrepreneurship and Management Journal*, 4(3): 257–272.

LIÑÁN, F. and FAYOLLE, A. 2015. A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal*, 11(4): 907–933.

NIELSEN, S. L., KLYVER, K., EVALD M. R., and BAGER, T. 2012. *Entrepreneurship in theory and practice. Paradoxes in play*. Cheltenham, Northampton: Edward Elgar Publishing.

PENG, Z., LU, G. and KANG, H. 2012. Entrepreneurial intentions and its influencing factors: A survey of the university students in Xi'an China. *Creative Education*, 3(supplement): 95–100.

PRUETT, M., SHINNAR, R. and TONEY, B. 2009. Explaining entrepreneurial intentions of university students: a cross-cultural study. *International Journal of Entrepreneurial Behavior & Research*, 15(6): 571–594.

SHANE, S. 2003. A general theory of entrepreneurship: concepts and contributions. *Entrepreneurship Theory and Practice*, 16(2): 47–70.

SHANE, S., and VENKATARAMAN, S. 2000. The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review*, 25(1): 217–226

SHAPERO, A., and SOKOL, I. 1982. Social dimensions of entrepreneurship. In: KENT, C., SEXTON, D. and VESPER, K. (Eds.). *The Encyclopedia of Entrepreneurship*. Englewood Cliffs, NJ: Prentice-Hall, 72–90.

SINGER, S., AMORÓS, J. E. and ARREOLA, D. M. 2015. Global Entrepreneurship Monitor 2014 Global Report. London: GERA.

TABACHNICK, B. G., and FIDELL, L. S. 2001. Using Multivariate Statistics. Boston: Allyn and Bacon.

THOMSON, E. R. 2009. Individual Entrepreneurial Intent: construct clarification and development of an internationally reliable metric. *Entrepreneurship Theory and Practice*, 33(3): 669–694.

Contact information

Anna Pilková: anna.pilkova@fm.uniba.sk
Marian Holienka: marian.holienka@fm.uniba.sk
Zuzana Jančovičová: zuzana.jancovicova@fm.uniba.sk