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The influence of personal characteristics on entrepreneurial intentions: International comparison

Alice Reissová, Jana Šimsová, Ralph Sonntag, Kristýna Kučerová

ABSTRACT

Objective: The aim of this study is to establish which factors are the most influential with regard to the development of entrepreneurial intentions (EI) and to establish whether it is the environment (each respondent's country of origin), gender, or personal characteristics the influence of which factor prevails.

Research Design & Methods: The created hypotheses were tested using the classification tree method, following a logistic regression. The research population ($n=789$) comprised students of economic fields from universities in three countries: the Czech Republic, Germany, and the United Kingdom. 'Willingness to run a business' was a dependent variable whereas the countries of respondents' origin, their gender, prior work experience, and personal characteristics (self-reliance, ability to accept risk, creativity, proactivity, and responsibility) were independent variables.

Findings: We found that the most significant factor in the willingness to run a business is the ability to accept risk. Other factors, such as the country of origin or respondents' gender, are also statistically significant. Prior work experience did not prove to be a strong predictor.

Implications & Recommendations: The results show that the willingness to run a business, which forms an integral part of EI, is to a large extent influenced by relatively stable variables (i.e., personal characteristics, gender, and country of origin). Therefore, it is possible that certain measures aimed at starting and developing a business (e.g., education) will be less effective if the monitored variables (e.g., personal characteristics) are not taken into account.

Contribution & Value Added: The added value of this study is the identification and verification of variables influencing business within the international context.

Article type: research article

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INTRODUCTION

Entrepreneurship and its development receive extensive attention because of their contribution to economics and the social area. Entrepreneurs can react promptly to current market demands, create new jobs, and introduce innovations.

The area of entrepreneurship receives a lot of attention in the fields of science and education. Dolhey (2019) analyses almost 1400 scientific articles dealing with entrepreneurial intentions published in 2000-2018. The sheer number of studies shows that researchers all over the world pay great attention to entrepreneurship.

It might be difficult to find one's way in such a large number of studies. Accordingly, cross-sectional studies aimed at categorising and systemising such a broad topic are very valuable. One of the most important studies is that by Liñán and Fayolle (2015), who analyse a total of 409 articles dealing with entrepreneurial intention, published in 2004-2013 (inclusive). The criteria for categorisation were quotation and thematic analysis.

One extensive topic is the examination and application of a variety of social psychological theories and their relationship to entrepreneurship or the prediction of future entrepreneurial activities. Although studies may be based on different theories, they usually all want to apply their effects in practice. This brings another large-scale topic concerning entrepreneurship: education and the development of entrepreneurial skills and the ensuing discussion about the potential impacts of entrepreneurial education, methods, and similar matters. A cross-sectional study focusing on the topic was drawn up by Nabi *et al.* (2017). Entrepreneurial intentions of students are influenced by a variety of factors.

The aim of this study is to establish which variables are the most influential with regard to the entrepreneurial intentions of students. The structure of this article is as follows: a brief introduction, an overview of the literature, theoretical anchoring of the discussed topic, and the formulation of hypotheses. Then, a detailed description of the research process (methodology) follows, including a description of the cohort and the methods used. The main part of this article includes results acquired based on statistical methods (classification tree and logistic regression). The conclusion discusses the limits and restrictions, followed by theoretical and actual impacts of the presented research.

LITERATURE REVIEW

Many researchers seek to explain why people start a business. For example, Jafari-Sadeghi (2019) explores whether business venturing is opportunity-driven or necessity-driven as running a business is their only way to earn money. Asante and Affum-Osei (2019) state that the ability of individuals to recognise entrepreneurial opportunities is the crucial factor in the decision-making of business ventures. Another reason why people may start an entrepreneurial career is family tradition, when young people as successors take over the management of family businesses. However, even in this case, the motivation of successors may be influenced by the fact that they perceive business as an opportunity and that they have no choice (Porfírio, Felício, & Carrilho, 2019). If the successors lack high levels of psychological ownership of their business, their innovative production also significantly decreases (Rau, Werner, & Schell, 2019).

Some authors seek to find barriers hindering business. Established barriers differ in various socio-economic characteristics, such as the country, level, and type of education attained, gender, and others (Iskandarini, 2014; Wąsowska, 2016; Oliveira & Rua, 2018; Ng & Fu, 2018; Sitaridis & Kitsios, 2019; and others). Age is also a frequently monitored socio-demographic characteristic. In this respect, research was conducted by Zhang and Acs (2018). Using multilevel logistic regression, they found that the relation between entrepreneurship and age is not provable. Later, Zhang and Acs (2019) also deal with the identification of intergenerational differences (Traditionalists, Boomers, Gen Xers, and Millennials). However, no influences were found. A barrier to business may also be the negative image of businesspeople and entrepreneurship in society. Chmielecki and Sułkowski (2016) explore metaphoric statements to find that most metaphors related to entrepreneurship contain negative images; especially in the cohort of respondents with the lowest level of education.

Entrepreneurial Intentions

Many authors try to find a model to predict the intentions to run a business. Most models are based on social-psychological theories assuming that decisions with long-term consequences – such as the choice of occupation – usually do not arise from immediate decisions and are not mere reactions to individual stimuli, but they rather are premeditated and planned. Obviously, this includes a degree of cognitive processing.

Krueger, Reilly, and Carsrud (2000) state such intentions are typical for entrepreneurship; however, the timing of starting a new business does not necessarily need to be planned (they may occur when an opportunity appears), and to predict a planned behaviour it is useful to observe the intentions of such a behaviour. There are many models dealing with such a prediction. In their study, Krueger, Reilly, and Carsrud (2000) compare two such models using Ajzen's theory of planned behaviour (TPB) and Shapero's model of entrepreneurial event (SEE). Ajzen assumes that intentions generally depend on perceptions of personal attractiveness, social norms, and feasibility. On the contrary, Shapero assumes that entrepreneurial intentions depend on perceptions of personal desire, feasibility, and propensity to act.

The Ajzen concept of planned behaviour assumes that behaviour is always preceded by an intention, usually a behavioural intention. It is defined as a certain subjective probability that an individual will perform a specific behaviour in a specific situation. However, the final behaviour does not always match predictions because human behaviour is influenced by many other factors. Ajzen originally defined two influencing factors: personal attitudes and subjective norms. Personal attitude to particular behaviour can be either positive or negative. If an individual evaluates specific behaviour as desirable, s/he will most probably behave in this way. Attitudes and beliefs change throughout our life as they are not congenital, and they develop. Subjective norms represent some social pressure exerted by our close environment, e.g., family, friends. A new component was later added to the theory: perceived behavioural control. This refers to the perceived difficulty of enacting a specific behaviour. If a person believes s/he can enact specific behaviour, s/he is more likely to enact such a behaviour (Ajzen, 1991).

Both models were tested on students who were making decisions on their future careers at the time of testing. Using regression analysis, it was found that both models have

strong statistical support. The conclusion is that the best predictor of any planned behaviour, including entrepreneurship, are intentions.

Maes, Leroy, and Sels (2014) also use the TPB as their basis. They deeply modify this theory by including its measuring model and subsequently exploring whether there are gender differences in the area of entrepreneurial intentions. They find that the influence of gender on entrepreneurial intentions arises from personal attitudes and the perceived control of behaviour, but not from social standards. Female students are more motivated to follow normative role models.

Another approach based on the TPB appears in a new study by Al-Jubari, Hassan, and Liñán (2019). They integrate the TPB with the organismic theory of motivation from the self-determination theory (SDT). They test the role of basic psychological needs of autonomy, competence, and relatedness in shaping university students' attitudes and intentions towards entrepreneurship. They conclude that internal and external motivations play a role in the formation of entrepreneurial intentions implemented in business activities.

Lee *et al.* (2011) define entrepreneurial intention as a result of the influence of work environment and personality factors. A negative work environment influences low job satisfaction, which may increase entrepreneurial intentions. Among personal characteristics, it is self-reliance which plays the positive role.

Eid *et al.* (2019) criticise theories focusing only on the relationship between the perception of entrepreneurs and their intentions as they ignore cognitive and psychological characteristics, which may play an important role. Therefore, they integrate Ajzen's theory of planned behaviour (TPB) and the model of entrepreneurial event (EEM). The model is extended with personal characteristics of an entrepreneur which could influence perception and intentions. Therefore, it is obvious that there is no respected theory or model explaining or predicting the active approach, i.e., starting a business venture. We may assume that the existing models will be worked on and extended in future researches.

EI and the Influence of the Country

Recent years have seen a significant increase in the interest of scientists in researches comparing entrepreneurial intentions of students in different countries (Franke, 2003; Pittaway & Cope, 2007; Carayannis *et al.*, 2003; Boissin *et al.*, 2009; Lee *et al.*, 2009; Lee *et al.*, 2005; Pruett *et al.*, 2009; Giacomini, 2011), or a few newer studies, such as Khursheed *et al.* (2018), Khursheed *et al.* (2019). The results obviously show that cultural background and social influences may play both a positive and a negative role. In some countries, traditions and values may hinder business venturing. For example, Pruett *et al.* (2009) found that Chinese students would like to take an entrepreneurial career but their family often reject such intentions.

Entrepreneurial Intentions and Prior Work Experience

Zapkou *et al.* (2015) also take from Ajzen's theory of planned behaviour. The main objective of their work is to identify how prior entrepreneurial exposure influences the entrepreneurial intention. They verified whether attitude, subjective standards, and perceived behavioural control contribute to the influence of entrepreneurial role models and work experience on entrepreneurial intention. The authors conclude that different types of prior entrepreneurial exposure and its perceived quality influence the entrepreneurial intention of individuals.

Entrepreneurial Intentions and Personal Characteristics

There is a relatively broad agreement among authors concerning personal characteristics and qualities and their influence on entrepreneurial intentions. There is significantly lower agreement on which characteristics are crucial in this respect. Krueger, Reilly, and Carsrud (2000) state that entrepreneurship is a way of thinking which consists in preferring opportunities to threats. Most often, personal characteristics in relation to entrepreneurial intentions are explored using the Big Five (Yu-Fen & Ming-Chuan, 2010). Their results show that the attitude of students to entrepreneurship was influenced by both environmental factors (family, society, education, and economic environment) and personal characteristics (the Big Five). Except for temperament characteristics developed on the genetic basis, personal characteristics may play an important role. Personal characteristics include, e.g., willingness/aversion to take risk, which may play an important role in relation to entrepreneurial intention (Shinnar *et al.*, 2009).

An interesting research in this area was conducted by Wach and Wojciechowski (2016). They established that apart from the variables of Ajzen theory – attitude to entrepreneurship, subjective norms, and perceived behavioural control – the attitude to risk plays a significant role. Similar conclusions were also made by Zhang *et al.* (2020), too. Accordingly, we will investigate whether personality traits influence students' entrepreneurial intentions, along with the importance of aversion to risk as one of personality traits. Thus, we defined the following hypotheses:

- H1:** Out of the monitored variables (i.e., country, gender, prior work experience, and personal characteristics), personal characteristics have the most significant influence on the willingness to run a business.
- H2:** Out of the monitored variables, the ability to accept risks has the greatest influence on the willingness to start an entrepreneurial career.

Entrepreneurial Intentions and Gender

Many authors deal with gender issues in the area of entrepreneurship, e.g. Wilson, Marlino, and Kickul (2004), Adachi and Hisada (2017), Murnieks, Cardon, and Haynie (2020). Machado *et al.* (2016) endeavour to find the main factors making life difficult for women who are starting their business in industry, commerce, and services. They conclude that women are not a homogeneous group and propose that if a country wants to increase the number of female entrepreneurs, it should provide women with help to resolve their difficulties.

Holienka, Pilková, and Jančovičová (2016), carried out an extensive investigation in the Visegrád group. One of the conclusions made from the analysis of secondary data was that a barrier to starting business is the fear of failure; however, gender plays an important part as well. Female students have a significantly lower chance of becoming entrepreneurs.

Recent research indicates that gender differences are more often seen in the stage of decision-making and considering (intentions) rather than in the stage of action (business activity; Verheul *et al.*, 2012). These results are confirmed with Reissová and Šimsová's research (2019), who explore whether men plan to start an entrepreneurial career more often than women. Gender differences in willingness to run a business were found in a cohort of students who do not have a business, whereas these differences

were not found in a cohort of students who already run a business. We defined our third hypothesis based on these findings:

H3: Gender is the least important variable influencing the willingness to run a business.

Factors Adversely Affecting Entrepreneurial Intentions

Heretofore, we mentioned studies looking into variables that positively affect EI. However, there also is a number of researchers who look into factors that affect EI adversely. This area involves rather frequently discussed factors, such as the absence of role models in the family, which consequently leads to the low level of entrepreneurial intention (Nowiński & Haddoud, 2019). Postigo, Iacobucci, and Tamborini (2006) conclude that the occupation of parents plays an important role and influences students' EI as well. Consequently, even this study will examine whether students consider the absence of these role models as an important negative obstacle in their entrepreneurship:

H4: The factor that most adversely affects EI is the absence of business role models in the family.

RESEARCH METHODOLOGY

Data Collection and Sample

The main research method was the written questionnaire method. The questionnaire was based on Ajzen's theory of planned behaviour. It contained questions focused on students' attitudes towards future entrepreneurship (a plan to do business in the future), and it investigated students' characteristics as well. We assumed that if a student displays characteristics in his/her self-assessment – established early on as important for future entrepreneurship (willingness to accept risk, creativity, initiative, responsibility and independence) – s/he will also feel that entrepreneurship is feasible in reality.

The questionnaire was distributed to full-time students at three universities. The faculty of Social and Economic studies in Ústí nad Labem (the Czech Republic), the University of the West of Scotland (UWS) in Paisley (the UK), and the Faculty of Business Administration at the University of Applied Sciences in Dresden (Germany). The selected cohort included students of economic studies. First-year students were excluded from the survey because they usually do not have a clear picture of their future professional career at the beginning of their studies. From the viewpoint of socio-demographic features (age, education, and the field of study), the cohort was relatively homogeneous. The respondents significantly differed according to their place of residence (i.e., country). The indicated quotes were selected intentionally with regard to the aim of the research, as 'country' and 'gender' represented independent variables.

The selected population comprised 789 respondents (326 men and 463 women). Of the total, 269 respondents came from the Czech Republic, 271 from Germany, and 249 from the UK.

Measures

The dependent variable (willingness/intention to run a business) was explored using the following question: 'What are you planning to do upon completion of your studies (within three to five years of completion of your studies)?' The question was followed

by a choice of possible activities (will be employed in my home country, run a business, work abroad). For each of these activities, respondents were asked to indicate to what extent it is likely they will perform the activity on a four-point Likert scale (from 1 = definitely yes to 4 = definitely not).

The independent variable was personal characteristics, which may be assumed to play a certain role within the choice of entrepreneurship. The respondents were asked, again using the four-point Likert scale, to assess to what extent are the selected personal characteristics typical for them (from 1 = definitely yes to 4 = definitely not). The personal characteristics were selected based on conducted research and included self-reliance, ability to accept risk, creativity, proactivity, and responsibility. The results of self-assessment are given in Table 1 below.

Table 1. Self-assessment by students – in absolute frequencies

Scale	Self-reliance	Accepting risk	Creativity	Proactivity	Responsibility
1	370	240	208	203	494
2	371	393	347	434	246
3	42	150	209	144	39
4	6	6	25	8	10

Source: own elaboration in SPSS.

Within this research, willingness to run a business is a dependent variable and the following are independent variables: gender, country, prior working experience, and personal characteristics (attitude to risk, self-reliance, creativity, proactivity, responsibility). The data were processed using SW SPSS. The statistical method of the classification tree was used. Subsequently, the analysis was amended with logistic regression.

To find the answer to the fourth hypothesis (the absence of entrepreneurial role models on EI), respondents were asked to use the four-point Likert scale to assess how the following situations can adversely affect the entrepreneurship of young people (from 1 = strongly agree to 4 = strongly disagree):

1. No one runs a business in the family;
2. Business idea missing;
3. Concerns about unstable salary.

RESULTS AND DISCUSSION

First of all, data were evaluated using the classification tree. It follows from Picture 1 that the greatest influence on the decision whether the students will start an entrepreneurial career upon completion of their studies is the fact whether they are able to accept the risk. Using this variable, the model split the data into three more homogeneous groups (the first branch of the dendrogram). The first group includes those who state they are *definitely able* to accept risk. Of this group, 57.9% of respondents want to run a business. The second group comprises respondents who are *rather able* to accept risk, whereas most of them do not want to run a business (62.1%). The third group comprises those who are *not willing to accept risk* (rather not and definitely not); in this group, 82.7% of respondents do not want to run a business.

The second level (branch) of the dendrogram shows that for those who are definitely or rather willing to accept risk, the strongest predictor is their country of origin. For respondents who are *rather willing to accept risk*, the group is formed by English and Czech students as opposed to German students. The group of Czech and English students willing to accept risk shows one more statistically significant predictor, which is gender.

The fourth of the monitored variables, i.e., prior work experience, was not reflected in the generated dendrogram at all. This means that this variable shows the lowest influence compared to the monitored variables.

Using the dendrogram, we can also see which students declare their willingness to run a business more often. These are German students who are *definitely willing to accept risk*. Similarly, most of the German students who are *rather able to accept risk* are also willing to start an entrepreneurial career upon completion of their studies.

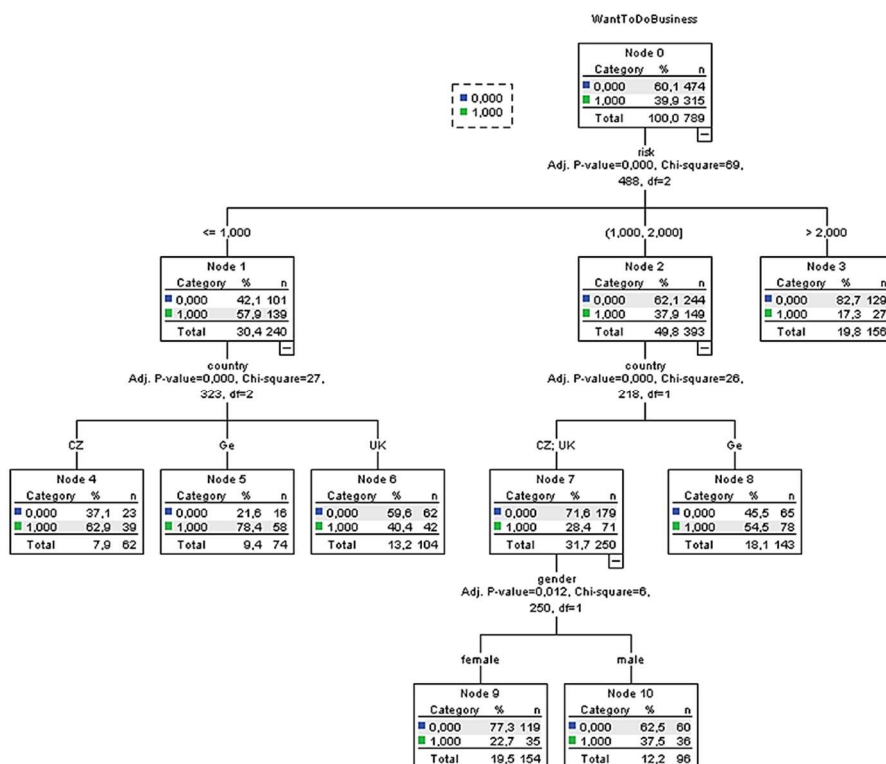


Figure 1. Dendrogram: the identification of variables with the greatest influence on the willingness to run a business

Source: own elaboration in SPSS.

As the model classifies correctly only 69.1% of cases and the risk estimate is 30.9%, we conducted another analysis using forward stepwise logistic regression. Again, willingness to run a business was a dependent variable and the following were independent variables: gender, country of origin, personal characteristics (attitude to risk, self-reliance, creativity, proactivity, and responsibility).

Within four steps, the variables of ability to accept risk, country of origin, creativity, and gender (Table 2) were identified as significant variables influencing the decision to run a business.

Using Wald's statistics (column Wald), we gained levels of significance (column Sign.). It follows from the low values that with the exception of the country variable (CZ vs UK), the hypothesis of zero regression coefficients is rejected.

The values in column exp(B) obviously show that the greatest willingness to run a business is declared by German students (3.918 times greater chance compared to English students.) This decision is also greatly influenced by their ability to accept risk. There is only a 40% chance to run a business in those who are slightly (rather) willing to accept risk compared to those who are definitely able to accept risk. With each lower self-assessment for acceptance of risk, the chance for a positive attitude to entrepreneurship decreases 0.4 times. The success rate of this model is 69.5%.

Table 2. Logistic regression: the identification of variables

Variables in the Equation	B	S.E.	Wald	Sign.	df	Exp(B)
Risk	-0.908	0.127	51.012	0.000	1	0.403
Creativity	-0.342	0.103	11.085	0.001	1	0.710
Gender	-0.437	0.163	7.153	0.007	1	0.646
Country			50.447	0.000	2	
CZ vs. UK	0.366	0.205	3.183	0.074	1	1.442
GE vs. UK	1.366	0.204	44.984	0.000	1	3.918
Constant	1.605	0.299	28.800	0.000	1	4.976

Source: own elaboration in SPSS.

Using the p-values of the Hosmer and Lemeshow test (0.908), the hypothesis of a match between the regression model and data is not rejected. Nagelkerke statistics (R 0.22) show that the model is not the best means to estimate the values of the dependent variable (I want to run a business upon the completion of my studies), but it can be used for a summary analysis.

Both methods validated that variables of the ability to accept risk and the country of origin strongly influence the attitude to entrepreneurship. Especially German students predicted a positive attitude to entrepreneurship, as they are (definitely or rather) able to accept risk. Weaker predictors were gender and self-assessment of creativity. Other monitored personal characteristics (self-reliance, creativity, proactivity, responsibility) have no significant influence on the willingness to run a business. Such findings comply with conclusions of the study, which established upon correlation and regression analysis that people who are entrepreneurship-friendly have standard psychological characteristics. They include a greater inclination toward risk and tolerance of ambiguity (Murugesan, 2010).

The H_1 hypothesis was only partially confirmed. Of personal characteristics, a significant variable influencing willingness to run a business proved to be the ability to accept risk and, within the logistic regression model, also creativity. Proactivity, self-reliance, and responsibility did not prove to be characteristics influencing the decision to start an entrepreneurial career upon the completion of studies. Hence, the H_2 hypothesis was confirmed.

Should institutional measures be considered to support entrepreneurship, it is very important to recognise the influence of individual personality variables. Some of them can be

rather stable dispositions (viz. Wąsowska, 2016), other can result from character traits that can be influenced more effectively. Liñán, Rodríguez-Cohard, and Rueda-Cantuche (2011) identify the most important factors that explain entrepreneurial intentions: personal attitude and perceived behavioural control. They are the most important factors explaining entrepreneurial intentions. Interesting findings were also made by Chmielecki and Sułkowski (2016). The variables represented by creativity, innovation, and risk appear in their research as outputs of students' metaphoric statements, presented by them in connection with entrepreneurship. Nevertheless, this area clearly requires additional research.

Both within the model of logistic regression and dependence using classification trees, gender proved to be a significant variable influencing the willingness to run a business; however, based on the third level of the dendrogram and the value of coefficient in the logistic regression, the influence is weaker than the influence of accepting risk and home country. Hence, the H_3 hypothesis was confirmed.

Within this research, gender appears to be a hardly convincing predictor. Zhang *et al.* (2009) conducted research on an extensive sample of thousands of monozygotic and dizygotic twins to explore whether the stronger predictor for entrepreneurship is genetics (temperament characteristics such as extraversion or neuroticism) or influences of the environment. They conclude that there are significant gender differences. Whereas in women there appeared a significant relationship between genetics and the tendency towards entrepreneurship, in men the influence of external environment was stronger.

Ward, Hernández-Sánchez, and Sánchez-García (2019) show that there are no big differences between men and women in entrepreneurial intentions. Kristiansen and Indarti (2004) do not find any differences. They conclude that age, gender, and education do not have a statistically significant impact on the established rate of entrepreneurial intentions.

Our study established that there are divergent attitudes to entrepreneurship between students from different countries (GE, UK, CZ). There are also other studies which deal with the identification of differences between individual countries. For example, Liñán and Chen (2009) compared Taiwanese and Spanish students to also find different attitudes to starting business, which they see in particularly dissimilar cultural differences.

The last part of the test wanted to find out whether students consider the absence of entrepreneurial role models in the family as a factor adversely affecting entrepreneurship of young people. Table 3 specifies the relative frequency of answers to individual questions. The results suggest that respondents evaluate having no one running a business in the family as a factor adversely affecting entrepreneurship of young people. However, such an absence of role models is evaluated as the least adverse compared to other factors. Accordingly, the 'Missing business idea' or 'Concern about unstable salary' are more frequently marked as negative factors.

Table 3. What adversely affects entrepreneurship of young people: relative frequency

Answers	Strongly agree	Agree	Disagree	Strongly disagree
No one runs a business in the family	23.03%	40.08%	28.37%	8.52%
Business idea missing	38.42%	46.44%	12.47%	2.67%
Concern about unstable salary	33.59%	48.6%	16.41%	1.4%

Source: own elaboration in SPSS.

The p-value relative frequency test of positive answers was used to verify whether the established differences are statistically significant. The results are shown in Table 4 below.

Table 4. What adversely affects entrepreneurship of young people: p-value

p-values	1 The family runs no business	2 Missing idea	3 Unstable salary
1. No one runs a business in the family	x		
2. Business idea missing	0	x	
3. Concern about unstable salary	0	0.0786	x

Source: own elaboration in SPSS.

The table shows that the percent of positive answers to question 1 (No-one runs a business in the family) is statistically significantly smaller than the percent of positive answers to question 2 (Business idea missing) and 3 (Concern about unstable salary).

Since we established that the country of origin affects respondents' attitudes to entrepreneurship, we further examined whether the students' answers to these last three questions would differ in different countries. Table 5 shows p-values of the relative frequency test of positive answers to questions 1 to 3 for individual countries. The table clearly shows no differences in the opinions among students in this area. Accordingly, they do not recognise the absence of family role models as a negative factor. However, the other two assessed factors are stronger, regardless of the country of origin. Thus, H4 was rejected.

Table 5. What adversely affects the entrepreneurship of young people: p-values

p-values	No one runs a business in the family			Business idea missing			Concern about unstable salary		
	cz	de	sc	cz	de	sc	cz	de	sc
cz	x			x			x		0.889
de d	0.3571	x		0.1027	x		0.3845	x	
sc	0.3599	0.2283	x	0.0963	0.4734	x	0.2889	0.1994	x

Source: own elaboration in SPSS.

The results following from the conclusions of this article can be helpful in the preparation of educational and training programmes. Many educational programmes aimed at motivating young people and preparing them for entrepreneurship are emerging, as it may be a good alternative for young people to employment in the labour market (Brizek & Poorani, 2006; Gordon, Hamilton, & Jack, 2012; Ghina, 2014; Sondari, 2014; Rustiadi, 2015). Maresch *et al.* (2016) note that education in entrepreneurship increases entrepreneurial intentions but the effect of business education in different fields of study varies.

Giure *et al.* (2020) states that entrepreneurial intentions can be influenced by perceived skill and sufficient necessary information. Similar conclusions were made earlier by Liñán (2008) as well, who established that value and skills play a significant role in explaining entrepreneurial intention. The conclusions of studies confirm that entrepreneurial education is important.

People who do not have any education usually do not pursue a career in doing business. A similar finding was established for people with a very high level of attained education (Blanchflower, 2000). It is likely that people who become top specialists will not show

any entrepreneurial intentions. A precondition for effective entrepreneurship education is primarily the choice of persons who should be educated. Obviously, not everybody has the personality preconditions to become an entrepreneur. However, women should not be excluded from the process of the development of entrepreneurial skills just because they are women or because some studies show that women do not have such a strong relationship to entrepreneurship as males. Our study established that gender may play a certain role; however, this variable had the lowest influence of all the monitored variables. Moreover, results of other studies show that gender differences are apparent only in the group of students who do not do business, not in the group of students who already do business (Reissová & Šimsová, 2019). Entrepreneurial education should also be verified afterwards. Liñán, Rodríguez-Cohard, and Rueda-Cantuche (2011) propose a standardised EIQ questionnaire that could be used as an instrument to assess entrepreneurial education programmes. The questionnaire was drawn up by Liñán and Fayolle (2015). A positive relationship was established between entrepreneurial education and entrepreneurial intentions (Turker & Selcuk, 2009). Respondents with formal entrepreneurial education show a higher intention to start business (Cera *et al.*, 2020). Entrepreneurial education forms certain attitudes and enhances overall entrepreneurial intention (Souitaris, Zerbinati, & Al-Laham, 2007). Zhang, Duysters, and Cloudt (2014), Zhang *et al.* (2020), and Jena (2020) also refer to the positive relationship between entrepreneurial education and entrepreneurial intentions. Many authors seem to agree on the positive influence of education. The importance of some other variables is then arguable. For example, the study by the last mentioned authors foregrounds interesting findings that previous entrepreneurial exposure negatively influences entrepreneurial intentions. Apparently, despite the extensive number of studies focusing on this topic, there is still a large scope for further examination.

CONCLUSIONS

The aim of this study was to establish which variables are most influential with regard to willingness to run a business. Independent variables included country, gender, prior work experience, and personal characteristics. Using a decision tree, we found that personal characteristics and – in particular – the ability to accept risk play the most significant roles. On the other hand, prior work experience did not prove to be a significant predictor. The aforementioned variables were confirmed using logistic regression. Furthermore, another characteristic – that of creativity – was found as related to starting an entrepreneurial career. Characteristics such as self-reliance, proactivity, or responsibility did not prove to be good predictors. Moreover, we established that the absence of entrepreneurial role-models in the family is not considered the factor which most strongly adversely affects the entrepreneurship of young people. The ‘Business idea missing’ or ‘Concern about unstable salary’ were more frequently statistically significantly indicated as negative factors.

The findings may be useful for institutions and organisers of educational programmes aimed at developing entrepreneurial skills. The measured effectiveness of such programmes may not reflect just the quality of offered education but also the rate of entrepreneurial intentions of their participants and all variables influencing such intentions (such as personal characteristics). Consideration should always be given to who the education is specified for. Universities should focus entrepreneurial education in consideration of the field of study.

Although the conclusions of this research bring interesting findings, let us note the possible restrictions and limits that arise from several facts.

We found that the most important variable is the ability to accept risk and – partially – also creativity. Thus, we should consider the fact that it did not include specialised psychological diagnostics of these characteristics but respondents' self-assessment. As the questionnaire was anonymous and there was no advantage or penalty related to respondents' answers, they were not motivated to misrepresent their answers. However, self-assessment definitely has a lower validity than objective diagnostics.

The dependent variable 'willingness to run a business' was also expressed in a declarative way. Thus, it indicates rather the direction of thinking, considering the future, than it guarantees that a student expressing willingness to run a business will actually follow an entrepreneurial career or that a student who is not considering business at the moment will not start doing business later.

Last but not least, we should consider the fact that in each country the research cohort consisted of students from a single university, which to a certain extent can be a limiting factor. However, within the quota selection, criteria were defined and observed. In all cases, these were universities of a regional type and all the students studied economics-related fields. Therefore, individual populations were relatively homogeneous and could be subsequently compared. For further research, it would be suitable to increase the number of universities, but also the number of monitored variables, such as previous work or entrepreneurial exposure, which might affect the perception of the risk rate or the fact whether a close person does business in the student's family background (and how successful s/he is), because even such a factor can influence student attitudes.

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