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Attitude of University Students toward entrepreneurship environment and toward entrepreneurship propensity in Czech Republic and Slovak Republic – International Comparison

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ABSTRACT

On the basis of online survey (made in 2017) about entrepreneurship environment we wanted to find out which entrepreneurship conditions are different from the viewpoint of Czech university students (156 men and 252 women) and Slovak university students (216 men and 352 women). From 40 available questionnaire items about two-thirds of them were different in a group of Czech university students compared with Slovak university students ($p < 0.05$). Czech university students trust more in: entrepreneurial support from the state, macroeconomic environment, quality of entrepreneurship environment and quality of university education compared with Slovak students. In contrast, Slovak students are more optimistic about the image of entrepreneurs in the media, about personal attributes for entrepreneurship, about career growth in entrepreneurship and are more ready to start entrepreneurship after graduation. CART decision tree was used for the multivariate classification problem between Czech university students and Slovak university students. A final CART decision tree model involved only four questionnaire items. Two of them were related to rather macroeconomic conditions - "Legal conditions for doing entrepreneurship are of high quality" and "I consider the macroeconomic environment of my country to be positive for entrepreneurship". These items were significantly more positively accepted in a group of Czech university students. The other pair of involved items was concerned with personality traits - "Every person has certain prerequisites for entrepreneurship" and "The most important characteristics of an entrepreneur are specializsation, persistence, responsibility, and risk-resistance." They were more valued in the case of Slovak university students. Average correct classification rate of CART decision tree model with four mentioned items was 71.0%.

1. Introduction

One way to achieve greater interest in young people's entrepreneurial activities is to set up active learning processes through education at universities, as well as support them through government institutions, in each country. These processes are also determined by internal policies as well as by cultural and socio-economic determinants (Androniceanu & Ohanyan, 2016). The education system in each country should serve as its core platform and should allow students to create a sufficient and quality base for successful entrepreneurship in the future (Kozina & Ponikvar, 2015; Jelonek, Dunay, & Bálint Csaba, 2017). This will also affect the creation of positive attitudes and social statuses of students towards entrepreneurship. Here is also the feedback from these processes, which could have an acceleration effect and reveal other student business themes with positive impacts (Stankevičiené et al. 2017). Despite many attempts to create an integrated business curriculum, education at many universities is organised in separate disciplinary fields, declared by numerous research studies from the national as well as international research environments (Doucek, Maryska, & Novotny, 2012; Kubak, Tkacova, Androniceanu, Tvaronavičiené, & Huculova, 2018). Universities often lack a dynamic, integrated, multidisciplinary model of entrepreneurship education that reflects on the current issues of young people's business development, as well as filling the gaps between theory and practice in the curriculum (Tvaronavičiené, 2016). Valuable knowledge in setting up such learning processes can bring comparative research analyses that reveal differences in educational processes as well as in national policy settings (Saee, 2004). These consistent facts have encouraged us to carry out our research, from which we present partial results. The main objective of our paper is to find out which entrepreneurship environment conditions (including entrepreneurship propensity) are different from the viewpoint of Czech university students in comparison with Slovak university students. That is why we have made an online survey among Czech and Slovak university students.

2. Literature review

Many foreign research studies explore the impact of several factors on young people's business development and entrepreneurial skills (Okręglicka, Havierniková, Mynarzová, & Lemańska-Majdzik, 2017; Khalifa & Dhiaf, 2016). A high quality education and its adjustment process play an important role in the development of young people's entrepreneurship. The learning process must be dynamic, reflecting permanent changes in the country as well as in the international economic environment, taking into account the setting of adequate policies in the country (Androniceanu, 2015; Rasoaisi & Kalebe, 2015). Similar findings have also been found by Tomovska et al. (2016), who examined the factors affecting the business goals of Macedonian entrepreneurs. The study's results have been declared to be the reason for the growing interest in business education being its impact on job creation and economic growth in the country. Research explicitly confirms the strong link between business activities and the economic performance of the country. Staniewski and Awruk (2015) examined in more detail the factors motivating potential entrepreneurs to start their own business as well as obstacles preventing its achievement. The most important factors motivating people to start their own business

are self-realisation and self-confidence, the possibility of higher incomes and the independence of the entrepreneur in decision-making. They identified lack of experience, lack of capital and the potential risk of failure as factors behind the start of their own business. Gender differences were not identified in motives and obstacles. Younger entrepreneurs perceived more barriers to business development than older entrepreneurs. A new study by these authors (Staniewski & Awruk, 2016) is already more intensively exploring the factors behind the business goals of future entrepreneurs. This demand for a deeper examination of the factors is mainly justified by the identified negatives: the high rate of unemployment in the country and the failure of a large number of start-ups, which discourages other start-ups. Revealing determinants preventing business start-ups and regulating them may change the relationship between business intent and business behaviour of entrepreneurs. The authors summarise the conclusions of their study and highlight the role of universities and education systems in this process. Just by improving the skills of potential entrepreneurs in solving problems and increasing motivation for entrepreneurship can increase the chance for a young person to start a business. A favourable situation in business motives appears in Poland, because in this country micro-enterprises are more important than in other EU countries. These facts were confirmed by researchers Staniewski and Szopiński (2015). Micro-enterprises are important economic and economic entities in this country in terms of the economic indicators monitored. Even these authors confirm the significant impact of university education on starting their own business. Higher levels of people's education have been associated with higher business start-ups and the likelihood of survival of a newly-established firm and its better economic performance. The results of their research show that gender affects the varying degrees of preparation of students to start their own business. This is also reflected in the prevalence of gender differentiation in approaches to start-up funding for companies. Korent, Vuković, and Brčić (2015) perceive the importance of entrepreneurial activities also in the context of the regional development of the country. Their research studies are based on relevant data from the Croatian regions. The results of their analyses confirm the complexity and ambiguity of the impact of the level of regional development and the economic growth of the country on the growth of entrepreneurial activities in the Croatian regions. Analysis of the impact of business activities on economic development has important political implications. First, the question is whether policy measures should encourage the emergence of new or the development of existing businesses. Critical attitudes to the learning process in the context of the company's current needs are of interest to Gutiérrez & Baquero (2017). In their study, they present a proposal for a better tertiary education in the field of entrepreneurship with links to innovation and multidisciplinary programmes. Many universities declare this in their institutional documents, curricula, teaching methods, etc. As the results of their studies show, education at many universities is primarily theoretical, lacking in good practice, failing to identify problems, solutions, creative ideas, innovative activities, creative thinking, etc. and the interest in entrepreneurship education. The authors propose the creation and implementation of correct teaching methods that would be critical to the success of entrepreneurial education programmes at universities. Similar findings came from the authors of the most recent research study by Nisula and Pekkola (2018). Their research is based on long-standing criticism of the quality of

entrepreneurship education. Critically, they call for theoretical concepts and highlight insufficient integration of learning methods. These research studies, despite their heterogeneity in the set research objectives, have been a potent inspiration in our comparative analysis. In spite of numerous decision tree applications in entrepreneurship (e.g., Messina & Hochsztain, 2015) there are only a few examples of students' attitudes toward entrepreneurship (Haris, Yahya, Abdullah, Othman, & Rahman, 2016; Pilkova, Holienka, & Jancovicova, 2017; Zekic-Susac, Pfeifer, & Durdevic, 2010).

3. Data and methodology

All data were gathered by an online survey that concerned attitude toward entrepreneurship among Czech (156 men (38.2%) and 252 women (61.8%)) and Slovak (216 men (38.0%) and 352 women (62.0%)) university students in 2017. We gained data of 40 entrepreneurship indicators overall. They can be classified into ten groups. Indicators of first nine groups are input oriented. They characterise attitude of students towards entrepreneurship environment conditions in both states. The last tenth group was assigned for entrepreneurship propensity (more output character). Each group contains four indicators (complete list of all used indicators is in Appendix). Measure of student agreement with statements about entrepreneurship conditions and about entrepreneurial propensity was graded by typical ordinal five-level Likert scale: 1 -Strongly disagree, 2 - Disagree, 3 - Neutral; 4 - Agree, 5 - Strongly agree.

For achievement of our objective we used appropriate statistical methods: descriptive statistics, parametric (ANOVA) and non-parametric (Wilcoxon test) analysis of variance. Decision (classification) tree was used for possible multivariate classification of state based on entrepreneurship conditions from the viewpoint of students and on the propensity for entrepreneurship of students. All statistical reports and graphs were made by statistical system IBM SPSS version 19. We wanted to know associations of state to location parameters (arithmetic mean and median) of available entrepreneurial indicators. The aim of our research was to find the most significant associations of them. Assumptions of established classification methods (discriminant analysis and logistic regression) such as normality of variables etc. are not fulfilled. For this reason, we used newer data mining methodology – decision trees. The decision tree creates a tree-based classification model which classifies into values of a dependent (target) variable based on values of independent (predictor) variables. In SPSS there are three decision tree methods: Chi-squared Automatic Interaction Detection (CHAID) (Kass, 1980), Classification and Regression Trees (CART) (Breiman, et al., 1984), and Quick, Unbiased, Efficient Statistical Tree (QUEST) (Loh & Shih, 1997). In our analysis a CART method is used because it produced relatively the best results.

4. Results

Now let us present results of our analyses. The first viewpoint is a set of possible differences of items between Czech and Slovak university students disregarding gender. It means associations of answers with the state. Basic statistical characteristics

Table 1. Comparison of statistical characteristics of university students' attitudes toward entrepreneurship by state.

Group Item	CZ			SK			
	M	Mdn	s	M	Mdn	s	p
X11	3.89	4.00	1.226	3.84	4.00	1.151	0.207
X12	3.12	3.00	0.977	3.21	3.00	0.967	0.149
X13	2.60	2.00	0.922	2.59	2.00	0.937	0.927
X14	2.32	2.00	0.793	2.54	2.00	0.852	0.000
X21	2.81	3.00	1.020	2.48	2.00	0.995	0.000
X22	2.81	3.00	0.955	2.37	2.00	0.940	0.000
X23	2.80	3.00	0.895	2.62	2.00	0.959	0.001
X24	2.87	3.00	0.882	2.55	2.00	0.919	0.000
X31	3.17	3.00	0.937	2.50	2.00	0.970	0.000
X32	3.14	3.00	0.920	2.64	2.00	0.934	0.000
X33	3.47	4.00	0.846	3.11	3.00	0.956	0.000
X34	3.36	4.00	0.859	2.82	3.00	0.938	0.000
X41	3.01	3.00	0.989	2.46	2.00	0.958	0.000
X42	3.55	4.00	0.773	3.12	3.00	0.967	0.000
X43	3.17	3.00	0.876	2.90	3.00	0.979	0.000
X44	2.37	2.00	0.985	2.52	2.00	0.978	0.014
X51	2.81	3.00	0.931	2.64	2.00	0.962	0.002
X52	3.50	4.00	0.835	3.36	4.00	0.863	0.012
X53	3.41	4.00	0.837	3.29	3.00	0.846	0.024
X54	3.29	3.00	0.812	3.18	3.00	0.879	0.029
X61	3.51	4.00	0.900	3.15	4.00	1.069	0.000
X62	3.63	4.00	0.913	3.50	4.00	1.013	0.104
X63	3.59	4.00	0.923	3.51	4.00	1.010	0.265
X64	3.40	4.00	0.824	3.30	4.00	0.977	0.196
X71	2.68	2.00	1.211	2.85	2.00	1.152	0.010
X72	3.44	4.00	1.017	3.80	4.00	0.868	0.000
X73	4.03	4.00	0.864	4.08	4.00	0.796	0.555
X74	2.21	2.00	1.029	2.76	2.00	1.101	0.000
X81	3.38	4.00	0.892	3.28	4.00	1.006	0.243
X82	2.93	3.00	0.986	3.05	3.00	1.011	0.056
X83	3.52	4.00	0.917	3.81	4.00	0.778	0.000
X84	4.01	4.00	0.766	4.03	4.00	0.732	0.917
X92	3.36	4.00	0.996	3.44	4.00	0.974	0.198
X93	3.17	3.00	1.129	3.18	3.00	1.107	0.994
X94	2.39	2.00	0.822	2.54	2.00	0.876	0.003
Y1	3.30	3.00	1.157	3.50	4.00	1.061	0.005
Y2	2.77	3.00	1.126	3.01	3.00	1.099	0.000
Y3	2.69	2.00	1.089	2.82	3.00	1.039	0.051
Y4	2.18	2.00	1.159	2.20	2.00	1.113	0.505

Notes: M – arithmetic mean, Mdn – median, s – sample standard deviation, p – Wilcoxon test two sided p value.
Source: Own elaboration.

(arithmetic mean, median, sample standard deviation and Wilcoxon test two-sided p value) of university students´ attitudes towards entrepreneurship grouped by state are in Table 1. We must remark that indicator X91 (the disadvantages of entrepreneurship outnumber the advantages) was excluded from further analyses because of its redundant information in comparison with X81 (the advantages of entrepreneurship outnumber the disadvantages). Both indicators have the same meaning: X81 is positive about entrepreneurship advantages while X91 is rather negative. So the final number of analysed items is 39. From Table 1 we can see that measure of agreement with entrepreneurship statements is significant in about two-thirds (25/39) of survey items from the viewpoint of the state (Wilcoxon test; $p < 0.05$). It is caused by

relatively large number of compared samples (hundreds of students) and also by number of tests. If we decrease p level by Bonferroni correction then the critical p value is 0.001 (0.05/39).

From two-sample Wilcoxon test of questionnaire items by the state we can see that Czech university students are more optimistic in the following statements in comparison with Slovak university students ($p \leq 0.001$):

- X21 (The state supports entrepreneurship by using its tools),
- X22 (The state creates high-quality conditions for starting an entrepreneurship),
- X23 (The state financially supports entrepreneurship),
- X24 (Legal conditions for entrepreneurship are of high quality),
- X31 (I consider the macroeconomic environment of my country to be positive for entrepreneurship),
- X32 (The state of macroeconomic environment of my country supports starting an entrepreneurship),
- X33 (Present macroeconomic environment does not prevent me from starting an entrepreneurship),
- X34 (Present level of basic macroeconomic factors (GDP, employment, inflation) supports entrepreneurship and creates interesting entrepreneurship opportunities),
- X41 (The entrepreneurship environment of my country is of good quality and convenient for starting an entrepreneurship),
- X42 (The entrepreneurship environment of my country is relatively risk-resistant and enables me to start an entrepreneurship),
- X43 (Conditions for entrepreneurship have improved in my country in the last five years),
- X61 (I consider university education of my country to be of good quality).
- Let us mention that items X21 – X24 belong to "Entrepreneurial support from state" (E2), items X31 – X34 are from "Macroeconomic environment" (E3), items X41 – X43 measure "Quality of entrepreneurship environment" (E4) and X61 concerns "Quality of university education" (E6).

Consequently Czech university students have more trust in entrepreneurial support from the state, macroeconomic environment, quality of entrepreneurship environment and quality of university education.

Slovak university students note the following items in comparison with Czech university students ($p \leq 0.001$):

X14 (Media provide true information regarding status and activities of entrepreneurs),

X72 (The most important characteristics of an entrepreneur are specialisation, persistence, responsibility, and risk resistance),

X74 (Every person has certain prerequisites for entrepreneurship),

X83 (Entrepreneurship enables one to have career growth and interesting job opportunities),

Y2 (I am convinced that I will start an entrepreneurship after I graduate from university).

Table 2. Comparison of statistical characteristics of university students' attitude toward entrepreneurship by gender for both states.

State	CZ							SK						
Gender	Woman			Man				Woman			Man			
Item	M	Mdn	s	M	Mdn	s	p	M	Mdn	s	M	Mdn	s	p
X11	3.88	4	1.216	3.91	4	1.246	0.666	3.85	4	1.158	3.81	4	1.142	0.616
X12	3.11	3	0.974	3.13	3	0.984	0.770	3.29	4	0.958	3.09	3	0.972	0.016
X13	2.65	3	0.860	2.51	2	1.013	0.079	2.62	3	0.898	2.54	2	0.997	0.194
X14	2.28	2	0.738	2.38	2	0.875	0.357	2.51	2	0.861	2.57	2	0.838	0.278
X21	2.81	3	1.002	2.79	3	1.052	0.824	2.50	2	0.978	2.46	2	1.024	0.486
X22	2.81	3	0.911	2.80	3	1.025	0.846	2.39	2	0.957	2.35	2	0.913	0.718
X23	2.77	3	0.859	2.87	3	0.951	0.367	2.60	2	0.964	2.66	2	0.951	0.447
X24	2.92	3	0.859	2.79	3	0.916	0.108	2.60	2	0.901	2.47	2	0.945	0.061
X31	3.15	3	0.922	3.21	3	0.962	0.589	2.49	2	0.961	2.52	2	0.988	0.680
X32	3.10	3	0.885	3.20	3	0.973	0.295	2.60	2	0.925	2.70	2	0.949	0.257
X33	3.40	4	0.844	3.56	4	0.844	0.035	3.05	3	0.952	3.20	3	0.956	0.081
X34	3.24	3	0.846	3.56	4	0.844	0.000	2.75	3	0.915	2.93	3	0.966	0.038
X41	2.96	3	0.946	3.11	3	1.051	0.091	2.45	2	0.945	2.46	2	0.983	0.983
X42	3.48	4	0.786	3.65	4	0.742	0.012	3.15	3	0.955	3.07	3	0.986	0.330
X43	3.13	3	0.831	3.22	3	0.946	0.220	2.91	3	0.923	2.88	3	1.066	0.804
X44	2.44	2	0.937	2.24	2	1.048	0.024	2.54	3	0.957	2.48	2	1.011	0.334
X51	2.80	3	0.906	2.83	3	0.972	0.911	2.68	2	0.956	2.57	2	0.971	0.214
X52	3.44	4	0.833	3.59	4	0.834	0.089	3.34	4	0.860	3.38	4	0.870	0.742
X53	3.41	4	0.863	3.42	4	0.795	0.869	3.31	4	0.837	3.26	3	0.863	0.571
X54	3.22	3	0.807	3.40	4	0.809	0.048	3.10	3	0.870	3.30	3	0.882	0.007
X61	3.59	4	0.868	3.38	4	0.940	0.017	3.19	4	1.089	3.10	3	1.036	0.191
X62	3.68	4	0.877	3.54	4	0.966	0.137	3.51	4	0.984	3.49	4	1.061	0.853
X63	3.56	4	0.919	3.65	4	0.928	0.243	3.53	4	1.001	3.46	4	1.025	0.374
X64	3.39	4	0.856	3.43	4	0.771	0.736	3.30	4	0.991	3.29	4	0.956	0.768
X71	2.62	2	1.186	2.76	2	1.250	0.304	2.80	2	1.139	2.95	2	1.170	0.130
X72	3.46	4	1.019	3.42	4	1.016	0.721	3.85	4	0.843	3.72	4	0.903	0.106
X73	3.93	4	0.888	4.19	4	0.802	0.002	4.12	4	0.795	4.02	4	0.795	0.064
X74	2.17	2	0.927	2.26	2	1.176	0.947	2.76	2	1.074	2.77	2	1.145	0.865
X81	3.29	3	0.927	3.51	4	0.815	0.018	3.20	3	0.988	3.42	4	1.022	0.013
X82	2.85	3	1.001	3.06	3	0.952	0.041	2.97	3	1.011	3.18	3	1.001	0.029
X83	3.46	4	0.954	3.62	4	0.846	0.190	3.82	4	0.762	3.80	4	0.804	0.607
X84	3.92	4	0.737	4.15	4	0.794	0.000	4.00	4	0.702	4.07	4	0.777	0.116
X92	3.49	4	0.959	3.15	3	1.021	0.001	3.56	4	0.904	3.25	4	1.053	0.000
X93	3.14	3	1.129	3.23	3	1.129	0.445	3.18	3	1.111	3.17	3	1.104	0.848
X94	2.33	2	0.756	2.49	2	0.912	0.073	2.46	2	0.833	2.66	3	0.931	0.004
Y1	3.02	3	1.134	3.74	4	1.053	0.000	3.39	4	1.043	3.68	4	1.067	0.001
Y2	2.50	2	1.054	3.21	3	1.106	0.000	2.86	3	1.037	3.25	3	1.154	0.000
Y3	2.46	2	0.979	3.07	3	1.153	0.000	2.70	3	0.975	3.01	3	1.110	0.001
Y4	1.96	2	0.987	2.54	2	1.317	0.000	2.06	2	1.020	2.44	2	1.215	0.000

Notes: M – arithmetic mean, Mdn – median, s – sample standard deviation, p – Wilcoxon test two sided p value.
Source: Own elaboration.

Item X14 belongs to "Social environment" (E1), items X72 and X74 are related to "Personality traits" (E7), one item X83 is from "Entrepreneurships advantages" (E8). The last one Y2 concerns "Entrepreneurial propensity" (Y).

We can conclude that Slovak university students are more optimistic about the image of entrepreneurs in the media, about personal attributes, about career growth in entrepreneurship and are more decided to start entrepreneurship after graduation. If we look at arithmetic means and medians we can see that Slovak students are more pessimistic in the field of state support of entrepreneurship. Despite this fact Slovak students are more likely to take part in entrepreneurship after graduation. Another necessary approach is two-way comparison of items by gender for both

states. The objective is to find significant differences in answers according to gender for the same state (see results in Table 2).

First, we present interpretation of results for Czech Republic university students. From Table 2 we can see that measure of agreement with entrepreneurship environment statements is significantly larger in group of Czech men students compared with Czech women students in the case of the following indicators ($p \leq 0.001$):

- X34 (Present level of basic macroeconomic factors (GDP, employment, inflation) supports entrepreneurship and creates interesting entrepreneurship opportunities),
- X84 (Entrepreneurship enables to make use of own abilities),
- Y1 (I am very interested in entrepreneurship),
- Y2 (I am convinced that I will start an entrepreneurship after I graduate from university),
- Y3 (If nothing unexpected happens, I will start an entrepreneurship within three years at the latest),
- Y4 (At present, I have entrepreneurship activities).

Women were more likely to agree in the case of X92 (the disadvantage of entrepreneurship is not having a regular income).

From questionnaire items the most often significant (all four) are indicators of group Y (entrepreneurship propensity). For Slovak students we can see that measure of agreement with entrepreneurship environment statements is significantly larger in a group of men compared with women in the case of the following indicators:

- Y1 (I am very interested in entrepreneurship),
- Y2 (I am convinced that I will start an entrepreneurship after I graduate from university),
- Y3 (If nothing unexpected happens, I will start an entrepreneurship within three years at the latest),
- Y4 (At present, I have entrepreneurship activities).

Thus, men are more self-confident from the viewpoint of actual and possible entrepreneurship. On the other hand Slovak women students were more likely to agree in case of X92 (the disadvantage of entrepreneurship is not having a regular income). They are more aware of irregular income disadvantage than men. It is interesting that five significant differences (X92, Y1-Y4) according to gender are common for both Czech and Slovak university students. Therefore we included also gender of students in the classification problem between Czech and Slovak university students. Now we can step up to results of multivariate classification of the basis of the state as group variable. We tried a modern data mining decision tree called CART (abbr. classification and regression tree) from SPSS software. We used CART decision tree in default settings in IBM SPSS (Gini impurity measure, five levels of maximum tree depth, etc. …) with the exception of equal prior probabilities, of one standard error pruning and of minimum cases numbers in parent (child) node 40 (20). Let us again remind ourselves of the scale of measure of agreement: 1 - Strongly disagree, 2 -

Disagree, 3 - Neutral; 4 – Agree, 5 - Strongly agree. The final CART decision tree model involved only four questionnaire items (see Figure 1):

- The first division is made by macroeconomic condition – X31 ("I consider the macroeconomic environment of my country to be positive for entrepreneurship"). Left node 1 contains answers of disagreement with the statement (values one - "Strongly disagree" and two - "Disagree"). The proportion of Slovak students´ disagreement is significantly larger than the proportion of Czech students (73.7% vs. 26.3%). In right node 2 there are cases with agreement or neutral attitude towards positive influence of macroeconomic environment in the country from the viewpoint of entrepreneurship. The proportion of Slovak students is significantly lower (42.5% vs. 57.5%).
- At second level both nodes are divided by the same item X74 ("Every person has certain prerequisites for entrepreneurship"). Left node 1 is divided into terminal node 3 with students of rather pessimistic attitudes towards macroeconomic environment and also towards personal entrepreneurship prerequisites of all people and into node 4 with students of more positive attitudes towards personal entrepreneurship prerequisites (the proportion of Slovak students is 76.5% vs. 23.5%). The more positive attitude of Slovak students can be seen also in case of division in node 2. The proportion of Slovak students is larger (63.4% vs. 36.6%; terminal node 6) in group of at least neutral attitude towards common personal entrepreneurship prerequisites as opposed to the lower proportion 32.1% vs. 67.9% with some disagreement with common personal entrepreneurship prerequisites (terminal node 5).
- At third level node 4 is divided by personality entrepreneurship characteristics item X72 ("The most important characteristics of an entrepreneur are specialisation, persistence, responsibility, and risk-resistance"). In a group of at least neutral attitude towards personality entrepreneurship characteristics the proportion of Slovak students is larger (79.7% vs. 20.3%; terminal node 8). The last division of node 7 is made at the fourth level by entrepreneurial support from state item X24 ("Legal conditions for entrepreneurship are of high quality"). Here we can again see rather pessimistic opinion of state entrepreneurial support in the case of Slovak students. The proportion of Slovak students that disagree with the statement is 72.0% vs. 28.0% (last node 9) contrary to at least a neutral attitude to the statement 31.8% vs. 68.2% (terminal node 10).

Two of involved items were related to rather macroeconomic conditions - "Legal conditions for entrepreneurship are of high quality" and "I consider the macroeconomic environment of my country to be positive for entrepreneurship". These items were significantly more positively accepted in the group of Czech university students. The other couple of involved items were concerned with personality traits - "Every person has certain prerequisites for entrepreneurship" and "The most important characteristics of an entrepreneur are specialisation, persistence, responsibility, and risk-resistance." They were more valued in the case of Slovak university students.
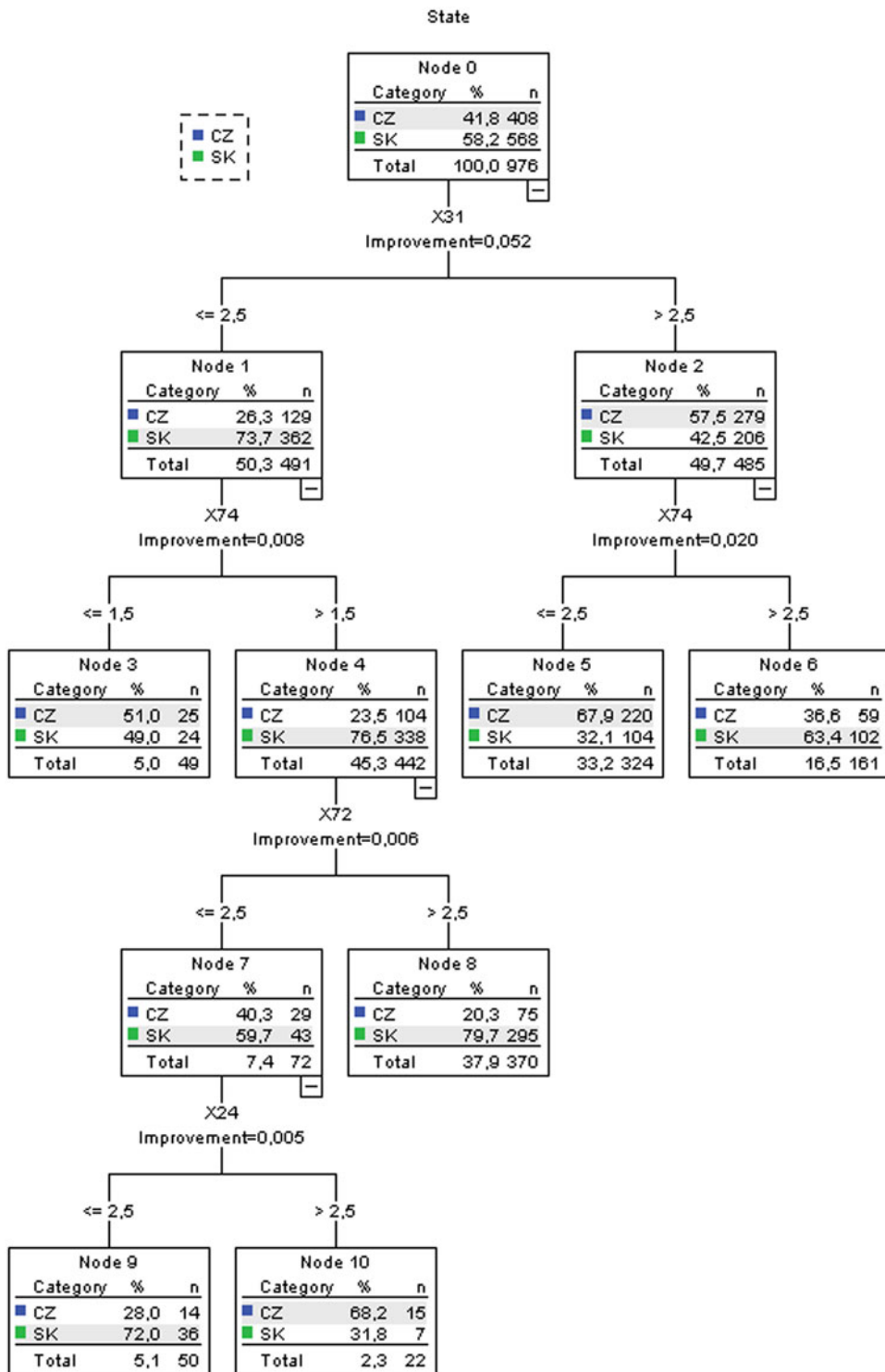
Figure 1. Classification tree (CART) between Czech and Slovak university students based on entrepreneurship survey items. Source: Own elaboration.

Table 3. Classification matrix of state by four significant entrepreneurship indicators in CART decision tree.

Observed / Predicted	CZ	SK	Correct %
CZ	260	148	63.70%
SK	135	433	76.20%
Overall %	40.5%	59.5%	71.0%

Source: Own elaboration.

The classification matrix of CART decision tree of cases assigned to the state is in Table 3. Correct classification rate for Czech students is $260/(260 + 148) = 260/408 = 63.7\%$. For Slovak students the rate is $433/(433 + 135) = 433/568 = 76.2\%$. Overall correct classification rate is $(260 + 433)/(408 + 568) = 693/976 = 71.0\%$.

We see the classification strength of the CART decision tree model. We need to ask only five single questions (of if - then type) to obtain correct classification of 71% cases between Czech Republic university students and Slovak Republic university students.

5. Conclusions

On the basis of an online survey (made in 2017) about entrepreneurship environment we wanted to find out which entrepreneurship conditions are different from the viewpoint of Czech (156 men and 252 women) and Slovak (216 men and 352 women) university students. From 40 available questionnaire items about two-thirds of them were different in a group of Czech university students in comparison with Slovak university students ($p < 0.05$). Czech university students trust more in: entrepreneurial support from state, macroeconomic environment, quality of entrepreneurship environment and quality of university education in comparison with Slovak students. In contrast, Slovak students are more optimistic about the image of entrepreneurs in the media, about personal attributes for entrepreneurship, about career growth in entrepreneurship and are more decided to start entrepreneurship after graduation. The CART decision tree model involved only four questionnaire items. Two of them were related to rather macroeconomic conditions - "Legal conditions for entrepreneurship are of high quality" and "I consider the macroeconomic environment of my country to be positive for entrepreneurship". These items were significantly more positively accepted in the group of Czech university students. The other pair of involved items was concerned with personality traits - "Every person has certain prerequisites for entrepreneurship" and "The most important characteristics of an entrepreneur are specialisation, persistence, responsibility, and risk-resistance." They were more valued in the case of Slovak university students. The average correct classification rate of the decision tree model was 71.0%. The results of our study represent a valuable platform for both regional and national policy makers in the field of education as well as for a broad professional education community in the country. It is also beneficial for institutions dealing with financial support for the development of business activities in the country. It is these innovations that should be explored on a long-term basis for business start-ups, to carry out in-depth analyses of what young entrepreneurs perceive as the main obstacles to setting up their own businesses, as

research studies state that financial resources are not the only key barrier to business. The decision to start a business is determined by many motives, external and internal factors, accompanied by threats and losses from business. This can especially be seen by young people without a business experience. Therefore, it is necessary to examine issues of entrepreneurial subjective perception of the reasons behind the start of business, to monitor and to influence them positively. Entrepreneurship support institutions should engage in various activities to support entrepreneurial behaviour, to influence it in the right direction, to develop, in particular, more effective cooperation with universities supporting entrepreneurship and innovation, to encourage the creation of different innovation and education clusters. Comparing the results of the two countries' research has significant benefits also for the purpose of setting up active education policies in individual countries, as in recent years there has been a significant mutual migration between Czech and Slovak students. In the long run, it is important to monitor the motives of this mutual migration, to discover its causes and to set up active regulatory mechanisms in the field of education policy. As education concepts are similar in both countries and their modification is influenced by time-consuming legislative processes, for our national education policy makers, our findings will be of strategic importance.

We would like to continue in our research because it is important to educate future generations of entrepreneurs in post-socialist countries from both professional and ethical viewpoints. Comparative analyses with other V4 countries (Poland and Hungary) could be interesting.

Funding

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Appendix

E1: Social environment

X11 (There is an entrepreneur in my family and I highly respect him/her).

X12 (Society in general appreciates entrepreneurs).

X13 (Politicians as well as public consider entrepreneurs to be beneficial for society).

X14 (Media provide true information regarding status and activities of entrepreneurs).

E2: Entrepreneurial support from state

X21 (The state supports entrepreneurship by using its tools).

X22 (The state creates high-quality conditions for starting an entrepreneurship).

X23 (The state financially supports entrepreneurship).

X24 (Legal conditions for entrepreneurship are of high quality).

E3: Macroeconomic environment

X31 (I consider the macroeconomic environment of my country to be positive for entrepreneurship).

X32 (The state of macroeconomic environment of my country supports starting an entrepreneurship).

X33 (Present macroeconomic environment does not prevent me from starting an entrepreneurship).

X34 (Present level of basic macroeconomic factors (GDP, employment, inflation) supports entrepreneurship and creates interesting entrepreneurship opportunities).

E4: Quality of entrepreneurship environment

X41 (The entrepreneurship environment of my country is of good quality and convenient for starting an entrepreneurship).

X42 (The entrepreneurship environment of my country is relatively risk-resistant and enables to start an entrepreneurship).

X43 (Conditions for entrepreneurship have improved in my country in the last five years).

X44 (The amount of administrative work of entrepreneurs in my country has decreased in the last five years).

E5: Access to the financial resources

X51 (There is no intensive financial risk in the entrepreneurship environment, i.e. having limited access to external financial sources, bad payment habits, etc.).

X52 (Entrepreneurship entities have easy access to bank credits).

X53 (I consider the credit conditions of commercial banks in my country to be appropriate).

X54 (The interest rates of commercial banks support entrepreneurship activities).

E6: Quality of university education

X61 (I consider university education of my country to be of good quality).

X62 (I consider the educational structure at my faculty (university) to be of high quality).

X63 (The knowledge acquired at my faculty (university) will help me with entrepreneurship).

X64 (The knowledge acquired by students in my country will help them to start an entrepreneurship).

E7: Personality traits

X71 (An entrepreneur does not have to have any special innate abilities).

X72 (The most important characteristics of an entrepreneur are specialisation, persistence, responsibility, and risk-resistance).

X73 (It is easier to do entrepreneurship if close relatives are in entrepreneurship).

X74 (Every person has certain prerequisites for entrepreneurship).

E8: Entrepreneurships' advantages

X81 (The advantages of entrepreneurship outnumber the disadvantages).

X82 (An entrepreneur is wealthier and has a higher social status).

X83 (Entrepreneurship enables to have career growth and interesting job opportunities).

X84 (Entrepreneurship enables to make use of own abilities).

E9: Entrepreneurship disadvantages

X91 (The disadvantages of entrepreneurship outnumber the advantages).

X92 (The disadvantage of entrepreneurship is not having a regular income).

X93 (The negative aspect of entrepreneurship is the fact that an entrepreneur does not have time to be with his/her family).

X94 (The disadvantage of entrepreneurship is not having good reputation within society).

Y: Entrepreneurial propensity

Y1 (I am very interested in entrepreneurship).

Y2 (I am convinced that I will start an entrepreneurship after I graduate from university).

Y3 (If nothing unexpected happens, I will start an entrepreneurship within three years at latest).

Y4 (At present, I have entrepreneurship activities).