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PREDICTING ENTREPRENEURIAL INTENTIONS THROUGH ENTREPRENEURSHIP EDUCATION: A THEORY OF PLANNED BEHAVIOUR-BASED ANALYSIS

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Abstract: This paper examines how entrepreneurship education shapes the entrepreneurial intentions of university students in Serbia using the Theory of Planned Behaviour (TPB) as a conceptual framework. The study aimed to test whether personal attitude, subjective norms, and perceived behavioural control mediate the relationship between entrepreneurship education and entrepreneurial intentions. Data were collected from 445 students of the University of Niš by using the snowball sampling technique. Using factor analysis, correlation analysis, and mediation modelling, the research confirmed that entrepreneurship education significantly enhances students' attitudes and perceived behavioural control, which in turn strongly predict entrepreneurial intentions, while subjective norms showed no positive effect. The findings demonstrate the practical relevance of experiential, practice-oriented programmes for strengthening self-efficacy and pro-entrepreneurial attitudes. The study contributes originality by providing empirical evidence from a transitional economy where entrepreneurship is between necessity and opportunity-driven career choice, highlighting cognitive pathways rather than social approval as key mechanisms. This offers valuable guidance for educators and policy makers seeking to design more effective curricula and support measures that develop entrepreneurial skills, confidence and opportunity-oriented mindsets.

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1. Introduction

Entrepreneurship in Serbia's transition economy is recognised as crucial for growth, but it remains largely a response to necessity and opportunity (Ognjanović et al., 2025). Despite policy interest, local research on how entrepreneurship education influences students' intentions is scarce. Indeed, few empirical studies examine entrepreneurial intentions in such transitional settings as the Serbian economy (Djordjevic et al., 2021; Milanović Zbiljić, 2024; Nikolić Tošović & Jovanović, 2020). Taken together, these studies indicate that in Serbia's transitional economy, entrepreneurial intentions are shaped less by demographic characteristics and more by cognitive and contextual factors such as students' attitudes toward entrepreneurship, perceived behavioural control (self-efficacy), and social support (Nikolić Tošović & Jovanović, 2020). Evidence also shows that formal entrepreneurship education and practical work experience strengthen these attitudes and skills, which in turn foster higher entrepreneurial intentions (Milanović Zbiljić, 2024). This highlights the critical role of tailored educational programmes and experiential learning in transforming Serbia into a country of totally opportunity-oriented ventures.

The study is grounded in Ajzen's Theory of Planned Behaviour (TPB), which posits that behavioural intentions stem from three key factors: attitudes, subjective norms, and perceived behavioural control (Ajzen, 2020). In the entrepreneurial context, attitude reflects a student's positive or negative evaluation of starting a business, subjective norms capture perceived social support or pressure to become an entrepreneur, and perceived behavioural control corresponds to self-efficacy in entrepreneurial tasks. Prior research suggests that entrepreneurship education can bolster these cognitive determinants – for example, it significantly enhances students' attitudes and perceived feasibility, thereby raising intentions (Milanović Zbiljić, 2024).

In order to better understand how entrepreneurial intention develops in the Serbian educational context, primary research using the snowball sampling technique in collecting data was conducted. The sample included 445 university students in Serbia using a validated entrepreneurial intention questionnaire to test these relationships. By examining how education-related experiences feed into the TPB constructs, the analysis will fill a local evidence gap. This study will contribute to entrepreneurship literature by providing empirical evidence from an under-researched transitional economy, showing how entrepreneurship education influences intentions via TPB constructs. In practical terms, the findings will contribute to understanding how entrepreneurship education can shape motivation via cognitive pathways such as attitudes, norms, and control. This insight may guide curriculum design and policy for enhancing students' attitudes and self-efficacy through targeted entrepreneurship coursework, which could foster more opportunity-driven entrepreneurship in Serbia.

The structure of the paper is as follows: the opening section reviews the literature on the application of the theory of planned behaviour in explaining entrepreneurial intentions and entrepreneurship education, alongside the formulation of research hypotheses. The next section outlines the research methodology employed to generate findings. The following section presents the results together with their discussion. Finally, the paper concludes with implications for human resource management and closing remarks.

2. Literature review

2.1. Basic Assumptions and Applications of the TPB Model in Entrepreneurial Intention Research

There are several theories about the conditions under which entrepreneurial intentions develop. Among them, the *Model of Entrepreneurial Event* (Shapero & Sokol, 1982) and the *Theory of Planned Behaviour* (further, TPB) (Ajzen, 1985) stand out. On the other hand, the most cited theory that explains intentions and predictive behaviour of a person is the TPB. The basis for the formation of this theory was provided by Vroom's Expectancy Theory from 1964, according to which a person's choices depend on the sum of the expected outcome of that choice and the psychological significance that that choice will have for the individual (Vroom, 1964, in Douglas, 2020). Later, according to the TPB, an individual's actions are primarily determined by their intention to act in a particular manner. Intentions represent 'the motivational drivers behind behaviour, reflecting the degree of effort a person is prepared to exert and the extent of commitment they are willing to make to carry out the behaviour' (Ajzen, 1991, стр. 181). Researchers aim to clearly identify the factors that shape an individual's intention to engage in a specific behaviour.

According to Ajzen (2020), the TPB explains that such intentions are influenced by three key components: (i) the individual's attitude toward the behaviour, (ii) the subjective norm, and (iii) perceived behavioural control. He explains that people's attitudes toward a given behaviour – such as entrepreneurship – are shaped by their expectations of its outcomes. This means attitudes are essentially "behavioural beliefs" about what will happen if the behaviour is carried out. Ajzen (1985) notes that subjective norms reflect the perceived social pressure from influential people or groups about engaging in a behaviour. These "normative beliefs" represent how strongly an individual thinks important others expect them to act in a certain way. Ajzen (2002) explains that perceived behavioural control – essentially entrepreneurial self-efficacy – arises from an individual's control beliefs about factors that may affect their ability to act. This involves both locus of control (seeing the behaviour as controllable) and self-efficacy (feeling capable of performing it). Such control factors can either make the behaviour easier or more difficult to carry out.

The TPB is one of the most widely used frameworks for predicting entrepreneurial intentions. Research has consistently examined how personal attitudes toward entrepreneurship, subjective norms, and perceived behavioural control shape entrepreneurial intentions. Many of these studies focus on student populations, recognising students as an important driver of entrepreneurship in society (Table 1).

Table 1: Summary of Research on Factors Influencing Entrepreneurial Intention in University Populations

Authors (Year)	Sample Size (N)	Predictors		
		Attitudes toward entrepreneurship	Subjective norms	Perceived behavioural control
Wu & Wu (2008)	162	*		*
Schwarz et al. (2009)	2,124	*		
Küttim et al. (2014)	55,781	*		
Miranda et al. (2017)	1,178	*		
Farrukh et al. (2018)	1,175	*	*	*
Munir et al. (2019)	1,016	*	*	*
Eyel & Vatansever Durmaz (2019)	391	*		*
Doanh & Bernat (2019)	2,218	*		*
Paray & Kumar (2020)	309	*	*	*

Source: Authors' presentation.

Table 1 summarises selected studies on university populations and the predictors of entrepreneurial intention according to the TPB. Moreover, such studies recognise that an entrepreneurial mindset is strongly shaped by how individuals view entrepreneurial behaviour, social support and by their belief in the likely success of entrepreneurial ventures. In essence, positive attitudes and optimism about outcomes are central to fostering an entrepreneurial way of thinking (Douglas, 2020). Having in mind previous studies (Table 1), the following research hypotheses are stipulated:

H1a: Personal attitudes influence entrepreneurial intentions of Serbian students.

H1b: Subjective norms influence entrepreneurial intentions of Serbian students.

H1c: Perceived behavioural control influences entrepreneurial intentions of Serbian students.

Both theoretical frameworks and empirical evidence indicate that entrepreneurial intentions are significantly shaped by factors including personality characteristics, education, previous experience, relationships with other people, as well as various socio-demographic attributes. Among all, the influence of entrepreneurship education on entrepreneurial intentions is widely researched. Thus, the next section presents contemporary research on this matter.

2.2. Role of Entrepreneurial Education in Shaping Entrepreneurial Intentions

Entrepreneurial education encompasses structured learning activities aimed at cultivating an entrepreneurial mindset, skills and confidence in students (Vodă & Florea, 2019). It denotes a set of pedagogical inputs and experiences designed to develop entrepreneurial knowledge, skills, attitudes and dispositions that increase the likelihood of new-venture creation (Opuni et al., 2022). It is commonly classified into formal (curricular courses, accredited programmes, degree modules) and informal (extracurricular workshops, incubator participation, mentorship, project-based learning and self-directed exposure) (Johnson & Majewska, 2022). This duality matters because the mode, intensity and pedagogy of education condition effects on psychological antecedents of action (Fayolle & Gailly, 2015).

Within the TPB framework, entrepreneurial education is hypothesised to affect entrepreneurial intentions primarily by shaping three proximal determinants: attitude toward entrepreneurship**,** subjective norms**,** and perceived behavioural control**.** Empirical evidence supports these pathways while also documenting direct effects on intention. Meta-analytic and systematic reviews indicate positive average effects of entrepreneurship education on cognitive and affective outcomes (attitudes, knowledge, self-efficacy) and more modest but significant effects on stated entrepreneurial intentions (Bae et al., 2014; Küttim et al., 2014; Martin et al., 2013).

First, education tends to improve *personal attitudes toward entrepreneurship* by increasing knowledge about opportunity identification, clarifying potential benefits and reducing perceived risks. Concerning attitudes, educational programmes generally promote positive perceptions of entrepreneurship (Abbes, 2024; Souitaris et al., 2007). For instance, curriculum content that emphasises autonomy, economic opportunity and creative problem-solving tends to raise students' confidence that entrepreneurship is desirable and rewarding (Aliedan et al., 2022). Such attitudinal shifts operate as motivational antecedents for intention in multiple national contexts (Abbes, 2024; Aliedan et al., 2022; Souitaris et al., 2007).

H2a: Entrepreneurship education positively influences Serbian students' personal attitudes.

Second, the effect on *subjective norms* is more context-sensitive. Where institutional signals (university endorsement, visible role models, incubator activities) and family expectations favour entrepreneurship, education amplifies perceived social support, which can raise intention. Aliedan et al. (2022) report that university entrepreneurship support raised students' subjective norms. Similarly, Abbes (2024) found a significant effect of entrepreneurship education on norms among Saudi students. In other words, structured entrepreneurship programmes can create a cultural "push" toward entrepreneurship by signalling societal approval (Souitaris et al., 2007).

H2b: Entrepreneurship education positively influences Serbian students' subjective norms.

Third, entrepreneurship education reliably increases *perceived behavioural control*, i.e., self-efficacy**,** when programmes include hands-on tasks (business planning, simulations, venture creation experiences). Conceptually, as university courses increase knowledge and technical competence, students become more confident in their ability to perform entrepreneurial tasks (Aliedan et al., 2022). Opuni et al. (2022) similarly reported that higher-quality entrepreneurial programmes significantly raised students' entrepreneurial self-efficacy.

H2c: Entrepreneurship education positively influences Serbian students' perceived behavioural control.

Empirical studies also document direct relationships between entrepreneurial education and *intention*, although these are frequently partially mediated by TPB constructs (Zhang et al., 2019). Classic experimental/quasi-experimental work shows that well-designed, practice-oriented programmes (especially those targeted at science and engineering students) can yield measurable increases in entrepreneurial intention relative to controls (Souitaris et al., 2007). Overall, the majority of evidence supports a generally positive, but heterogeneous, net effect of education on intention (Abbes, 2024; Zhang et al., 2019). Abbes (2024) reports that a comprehensive education programme, such as content, pedagogy and supportive environment, leads to higher entrepreneurial intention.

H2d: Entrepreneurship education positively influences Serbian students' entrepreneurial intentions.

Consistently across studies, enhanced attitudes toward entrepreneurship, subjective norms and perceived behavioural control through entrepreneurial education translate into stronger intentions. In Abbes's (2024) model, positive personal attitudes developed through entrepreneurial education significantly predicted intention. Increased perceived behavioural control (i.e., self-efficacy) is one of the most consistent mediators between education and intention: as students acquire concrete skills and mastery experiences, they report higher readiness to undertake entrepreneurial actions. Meta-analytic evidence identifies self-efficacy as a central mechanism through which education converts learning into intended behaviour (Martin et al., 2013). Zhang et al. (2019) propose that entrepreneurial learning serves as an external influence on entrepreneurial intention, and this influence is mediated through the changes of individual perceptions on entrepreneurial-related attitudes, subjective norms and perceived behavioural control among university students in Hong Kong. Based on the above, the final research hypothesis to be tested in the paper is as follows:

H3: The Relationship between entrepreneurship education and entrepreneurial intentions of Serbian students is mediated by personal attitudes, subjective norms and perceived behavioural control.

3. Research Methodology

3.1. Data collection and sample

Data for the empirical research were collected by surveying students at all levels of study (bachelor, master and doctoral academic studies) of 12 faculties of the University of Niš. The questionnaire was delivered to students during the school year 2021/2022, and data were collected by using Google Forms. In this research, the snowball sampling technique was applied since university professors were asked to share the questionnaire among their students. The research context was under the influence of the pandemic, so any other way of collecting data was not possible. In total, 445 responses were collected.

Following the research approach of Yen et al. (2025), sampling error was calculated by applying Cochran's (1977) formula:

$$n = \frac{Z^2 pq}{e^2} \quad (1)$$

where n is the sample size, which in this study is 445 respondents, at a confidence level of 95% for which Z = 1.96, p = q = 0.5. The calculated margin of sampling error is 4.65%, which allows the sample to be considered representative of the overall population of 175,629 students enrolled at state universities (Republički zavod za statistiku Republike Srbije, 2021). Accordingly, it can be inferred that the selected sample of 445 respondents adequately represents the target population and provides a sufficient basis for the forthcoming analysis.

3.2. Measurements

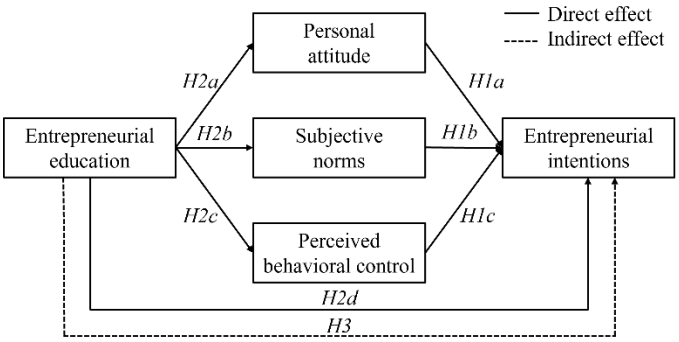
In this research, a questionnaire consisted of two parts. In this respect, demographic characteristics – such as age, gender, level of studies, and year of studies – of respondents were assessed. Entrepreneurial education as an independent variable in the research model was measured as a dummy variable, where respondents stated whether they had or had not had previous entrepreneurial education, such as a formal course at a faculty or other educational institution. The part of the questionnaire related to the TPB, which assesses respondents' personal attitudes toward entrepreneurial behaviour, subjective norms, perceived behavioural control as mediating variables and entrepreneurial intention as a dependent variable in the research model, was selected from the literature as the most commonly used scale developed by authors Liñán and Chen (2009). These variables were measured by applying the Entrepreneurial Intentions Questionnaire. The variable 'personal attitude' was measured by using five items, where one item was 'A career as an entrepreneur is attractive to me'. The variable 'subjective norms' was measured by using three items, where one item was 'If you decided to create a firm, would your

colleagues in your close environment approve of that decision?' Variable 'perceived behavioural control' was measured by using six items, where one item was 'I know the necessary practical details to start a firm'. The variable 'entrepreneurial intention' was assessed by using six items, where one was 'I am determined to create a firm in the future'. All questions are structured to assess responses using a 7-point Likert scale, ranging from 1 (total disagreement) to 7 (total agreement).

3.3. Research analysis

After collecting the data, it was screened for missing data and proceeded to variable calculation. The database was statistically analysed using statistical software SPSS (version 23) as well as the PROCESS macro. The data were summarised using descriptive statistical methods in this analysis. In the next step, factor analysis was conducted, including KMO and Bartlett's test of sphericity, followed by reliability analysis, such as the calculation of Cronbach's alpha values. Moreover, mediation analysis, in which the entrepreneurial education was the independent variable, personal attitude toward entrepreneurship, subjective norms, and perceived behavioural control were mediating variables, and entrepreneurial intention was the dependent variable, was conducted (Figure 1). G*power was applied for the assessment of the needed sample size for regression analysis. Before applying mediation analysis, the linearity of data, homoscedasticity, normality of errors, multicollinearity, and autocorrelation were screened.

Figure 1. Research model



Source: Authors' presentation

4. Results

4.1. Demographic statistics

During the research, an online questionnaire was conducted. The questionnaire was shared with students of the University of Niš during the fall semester of the school

year 2021/2022. The research sample consisted of 445 respondents from 12 faculties out of 14 that are established within the University of Niš. On average, respondents were 21.76 years old (SD = 3.353). Table 2 presents demographic statistics of the sample.

Table 2: Demographics statistics

Indicator	Category	N	Percentage
Gender	Male	159	35.7
	Female	286	64.3
Level of studies	BSc	375	84.3
	MSc	43	9.7
	PhD	27	6.1
Entrepreneurial education	No	299	67.2
	Yes	146	32.8
Total		445	100

Source: Authors' calculation

As presented in Table 2, the majority of respondents were women (286 or 64.3%), while men accounted for 159 or 35.7%. On the other hand, 84.3% of % respondents were students of bachelor studies. In terms of entrepreneurial education, students replied that 299 (67.2%) did not have previous formal entrepreneurial education, while 146 (32.8%) had such an education.

4.2. Factor analysis

When it comes to sampling adequacy, the Kaiser-Meyer-Olkin test (KMO) showed good sampling adequacy (KMO = 0.942). Bartlett's test of sphericity produced an approximate chi-square value of 6,807.052 with 190 degrees of freedom ($p < 0.000$), indicating that the correlation matrix significantly differs from an identity matrix.

Furthermore, factor analysis – principal component analysis – was conducted, and rotated solutions are presented in Table 3, followed by reliability analysis represented by Cronbach's alpha factor values.

Factor analysis identified four different factors where observed variables are strongly related to the identified factor. For the first identified factor – personal attitude toward entrepreneurship – factor loadings for five items vary between 0.641 and 0.782. For the second identified factor – subjective norms – factor loadings for three items vary between 0.810 and 0.868. For the third identified factor – perceived behavioural control – factor loadings for six items vary between 0.611 and 0.850. For the fourth identified factor – entrepreneurial intentions – factor loadings for six items vary between 0.670 and 0.792. Therefore, four distinct constructs were detected.

Table 3: Factor analysis

Item	Component				Cronbach alpha
	1	2	3	4	
PA1	.730				.912
PA2	.773				
PA3	.782				
PA4	.741				
PA5	.641				
SN1		.817			.795
SN2		.868			
SN3		.810			
PBC1			.646		.899
PBC2			.611		
PBC3			.734		
PBC4			.850		
PBC5			.839		
PBC6			.642		
EI1				.670	.937
EI2				.792	
EI3				.765	
EI4				.790	
EI5				.755	
EI6				.753	

Note: PA – personal attitude, SN – subjective norm, PBC – perceived behavioural control, EI – entrepreneurial intention. *Source:* Authors' calculation.

Cronbach's alpha values, which represent the reliability of the scales, indicate good internal consistency among the research variables, as all values exceed the 0.6 threshold (Hair et al., 2019). For example, the Cronbach's alpha is 0.912 for personal attitude, 0.795 for subjective norms, 0.899 for perceived behavioural control, and 0.937 for entrepreneurial intentions.

4.3. Correlation analysis

The following table (Table 4) presents descriptive statistics and the correlation between researched variables. The mean scores range from 4.173 (perceived behavioural control) to 5.824 (subjective norms), indicating generally favourable responses across constructs since these variables were measured on the 7-point Likert scale. Standard deviations suggest moderate variability in participants' responses.

Table 4: Descriptive Statistics and Correlation Analysis

Variable	Min	Max	Mean	SD	1	2	3	4	5
1. EE					1				
2. PA	1.00	7.00	5.251	1.385	.162**	1			
3. SN	1.67	7.00	5.824	1.045	.054	.299**	1		
4. PBC	1.00	7.00	4.173	1.374	.201**	.597**	.211**	1	
5. EI	1.00	7.00	4.456	1.614	.238**	.758**	.217**	.712**	1

Note: EE – entrepreneurial education, PA – personal attitude, SN – subjective norm, PBC – perceived behavioural control, EI – entrepreneurial intention; $p < 0.0$;

Source: Authors' calculation.

Correlation analysis shows that entrepreneurial intentions are significantly and positively correlated with all predictors: entrepreneurial education ($r = .238$, $p < .01$), personal attitude toward entrepreneurship ($r = .758$, $p < .01$), subjective norms ($r = .217$, $p < .01$), and perceived behavioural control ($r = .712$, $p < .01$). Among these, personal attitude toward entrepreneurship and perceived behavioural control exhibit particularly strong associations with entrepreneurial intentions, supporting their central role in the theory of planned behaviour.

Furthermore, strong inter-correlations are observed between personal attitude toward entrepreneurship and perceived behavioural control ($r = .597$, $p < .01$), and moderate correlations exist between personal attitude toward entrepreneurship and subjective norms ($r = .299$, $p < .01$) and perceived behavioural control and subjective norms ($r = .211$, $p < .01$), suggesting a degree of overlap among these constructs. All significant relationships are in the expected direction, providing preliminary support for the hypothesised model.

4.4. Mediation effect analysis

The next step in the analysis was to test the assumptions of regression analysis to conduct a mediation analysis. Firstly, the assessment of the necessary sample size for regression analysis was checked. In the case of four predictors in the regression analysis, an adequate sample size would be 129 respondents or more, according to the G*power program calculation. This assumption is fulfilled. Therefore, further steps included data screening for missing data, which were not found. During the outlier check, eleven cases were eliminated and afterwards, normality of data, linearity, homoscedasticity, multicollinearity (tolerance and variance inflation factor), and autocorrelation were screened.

To examine whether personal attitude toward entrepreneurship, subjective norms, and perceived behavioural control mediate the relationship between entrepreneurial education and entrepreneurial intention, a mediation analysis was conducted. The analysis followed the causal steps approach and estimated indirect

effects using bootstrapping with a 95% confidence interval (CI). Results are presented in the following table (Table 5).

Table 5. Results of mediation analysis – entrepreneurial education as independent variable

Relations	**R^2**	**F**	**b**	**SE**	**t**	**p**	**CI (95%)**
a_1 = EE → PA	.041	18.270***	.571	.134	4.271	**.000**	**[.308;.833]**
a_2 = EE → SN	.004	1.826	.140	.103	1.351	.177	[-.063;.343]
a_3 = EE → PBC	.041	18.319***	.587	.137	4.280	**.000**	**[.317;.856]**
b_1 = PA → EI	.748	318.130***	.720	.040	18.093	**.000**	**[.642;.799]**
b_2 = SN → EI			-.086	.041	-2.096	**.037**	**[-.166;-.055]**
b_3 = PBC → EI			.416	.037	11.110	**.000**	**[.342;.489]**
c' (direct effect) = EE → EI			.173	.085	2.034	**.043**	**[.006;.340]**
c (total effect) = EE → EI	.057	26.085***	.816	.160	5.107	**.000**	**[.502;1.131]**
Total indirect effect (**a x b**)			.643	.135			**[.373;.906]**
PA (**a_1b_1**)			.411	.094			**[.226;.597]**
SN (**a_2b_2**)			-.012	.010			[-.036;.004]
PCB (**a_3b_3**)			.244	.059			**[.130;.360]**

Source: Authors' calculations.

Both personal attitude toward entrepreneurship and perceived behavioural control significantly predicted entrepreneurial intention (Table 5). Personal attitude toward entrepreneurship had a strong positive effect on entrepreneurial intentions, b = 0.720, SE = 0.040, t = 18.093, p < .001, 95% CI [0.642, 0.799], as did perceived behavioural control, b = 0.416, SE = 0.037, t = 11.110, p < .001, 95% CI [0.342, 0.489]. In contrast, subjective norms were a significant but negative predictor of entrepreneurial intentions, b = –0.086, SE = 0.041, t = –2.096, p = .037, 95% CI [–0.166, –0.055]. Therefore, hypotheses H1a, H1b and H1c are confirmed, while the influence of personal attitude toward entrepreneurship and perceived behavioural control positively influence entrepreneurial intentions, the influence of subjective norms was very weak and negative.

Table 5 indicates that entrepreneurial education significantly predicted personal attitude toward entrepreneurship, b = 0.571, SE = 0.134, t = 4.271, p < .001, 95% CI [0.308, 0.833], and perceived behavioural control, b = 0.587, SE = 0.137, t = 4.280, p < .001, 95% CI [0.317, 0.856]. However, entrepreneurial education was not a significant predictor of subjective norms, b = 0.140, SE = 0.103, t = 1.351, p = .177, 95% CI [–0.063, 0.343]. Therefore, hypotheses H2a and H2c were confirmed while H2b was not supported by the results.

The full model predicting entrepreneurial intentions accounted for 74.8% of the variance (R^2 = .748, F = 318.130, p < .001), indicating a high level of explanatory

power. The direct effect of entrepreneurial education on entrepreneurial intentions, controlling for the mediators, was significant but modest, b = 0.173, SE = 0.085, t = 2.034, p = .043, 95% CI [0.006, 0.340], thus indicating that hypothesis H2d is confirmed. The total effect of entrepreneurial education on entrepreneurial intentions was stronger, b = 0.816, SE = 0.160, t = 5.107, p < .001, 95% CI [0.502, 1.131], indicating partial mediation.

The total indirect effect of entrepreneurial education on entrepreneurial intentions through the three mediators was significant, b = 0.643, SE = 0.135, 95% CI [0.373, 0.906]. Among the mediators, personal attitude toward entrepreneurship had the strongest indirect effect (a_1b_1), b = 0.411, SE = 0.094, 95% CI [0.226, 0.597], followed by perceived behavioural control (a_3b_3), b = 0.244, SE = 0.059, 95% CI [0.130, 0.360]. The indirect effect via subjective norms (a_2b_2) was not significant, b = –0.012, SE = 0.010, 95% CI [–0.036, 0.004]. Therefore, H3 was confirmed.

5. Discussion and implications

5.1. Discussion of obtained results

The findings of this study confirm that entrepreneurship education significantly bolsters students' attitudes toward entrepreneurship and their perceived behavioural control, which in turn strongly predict entrepreneurial intentions. This aligns with international evidence showing that attitude is typically the most powerful TPB antecedent of intentions (Heredia-Carroza et al., 2024; Pham et al., 2023). For example, in a Spanish context, Heredia-Carroza et al. (2024) found that positive attitudes and a strong sense of perceived behavioural control were closely associated with entrepreneurial intentions, whereas subjective norms had no significant effect. Paray and Kumar (2020) observed a very large effect of perceived behavioural control and attitudes toward entrepreneurship on intentions, whereas the direct effect of subjective norms on intention was essentially significant. On the other hand, study results where subjective norms have a negative influence on entrepreneurial intentions are not without support in the literature. For instance, Balgiu and Simionescu-Panait (2024) found that subjective norms unexpectedly had a negative association with entrepreneurial intention among Romanian engineering students. Therefore, students may observe the current state of support in society as discouraging for starting a business.

Numerous studies unequivocally support study results that entrepreneurship education positively influences students' personal attitudes toward entrepreneurship (Abbes, 2024; Küttim et al., 2014; Paray & Kumar, 2020; Souitaris et al., 2007), perceived behavioural control (Aliedan et al., 2022; Paray & Kumar, 2020) and entrepreneurial intentions (Abbes, 2024; Aliedan et al., 2022; Küttim et al., 2014; Paray & Kumar, 2020; Souitaris et al., 2007). Regarding the effect of entrepreneurship

education on social norms, no significant effect was detected. This finding indicates that entrepreneurship education does not appear to change students' perceptions of social support within social relations.

Lastly, the mediating effect of TPB variables in the relation between entrepreneurship education and entrepreneurial intentions was confirmed. As significant mediators, attitudes toward behaviour and perceived behavioural control were identified. Previous studies have also demonstrated the importance of maintaining a positive attitude in transforming knowledge acquired from entrepreneurship education into practical entrepreneurial objectives (Abbes, 2024; Al-Qadasi et al., 2024). Entrepreneurship education facilitates the transformation of perceived behavioural support and perceived behavioural control into stronger entrepreneurial intentions by enhancing individuals' confidence, resources, and readiness for entrepreneurial action (Aliedan et al., 2022).

Within the Serbian context, the results also resonate with local findings. Đorđević et al. (2025) emphasise the importance of education and practical experience in shaping entrepreneurial attitudes and intention, reinforcing the idea that entrepreneurship education is critical in fostering a pro-entrepreneurial mindset among students. Unlike some TPB-based studies that report significant social influences (Abbes, 2024; Aliedan et al., 2022), the study analysis and the Serbian evidence suggest that normative pressures from family or peers are not the main driver of students' start-up intentions in this setting. These findings suggest that the entrepreneurial environment in Serbia (and similar settings) may rely less on social approval and more on individual beliefs and skills.

5.2. Implications for Education and Policy

These results have clear practical implications. Entrepreneurship curricula should emphasise activities that build positive entrepreneurial attitudes and students' perceived behavioural control. For example, programs might include business simulations, start-up projects, mentoring by entrepreneurs, and internships, which have been shown to reinforce confidence and competence (Đorđević et al., 2025; Hoang et al., 2021). Since norms appear less influential, educators should focus on creating learning experiences that directly enhance capabilities such as networking skills and opportunity recognition rather than trying to control peer or family opinions.

At the policy level, ministries and universities should embed entrepreneurship broadly across disciplines and combine theory with hands-on practice (Đorđević et al., 2025; Hoang et al., 2021; Milanović Zbiljić, 2024). National strategies might prioritise entrepreneurship training that targets perceived behavioural control – for instance, by offering workshops on business plan development or facilitating access to seed funding for student ventures (Hoang et al., 2021). Study findings also imply that general promotional campaigns to change societal norms may have a limited

effect unless accompanied by the empowerment of individuals. Nonetheless, governments could still cultivate a more entrepreneurial culture (e.g. by celebrating successful local entrepreneurs) to indirectly support intentions (Pham et al., 2023). In summary, policies should aim to make students feel capable and excited about founding businesses, since these psychological factors most strongly mediate the influence of education on entrepreneurial intention.

6. Conclusion

This study confirms that entrepreneurship education significantly strengthens Serbian students' personal attitudes and perceived behavioural control, which in turn act as key mediators in shaping entrepreneurial intentions. The mediation analysis revealed that while entrepreneurship education directly affects entrepreneurial intentions, much of its influence operates indirectly through enhanced behavioural control and positive attitudes, underscoring the robustness of the TPB in transitional economies. Interestingly, subjective norms did not show a positive effect, suggesting that cultural and institutional factors in Serbia may limit the role of social approval in entrepreneurial decision-making.

The implications of these findings are substantial for higher education and policy. Universities should prioritise experiential and practice-oriented curricula, such as simulations, mentoring, and student ventures, that strengthen self-efficacy and positive perceptions of entrepreneurship. Policy makers should support initiatives that combine skill-building and real-world exposure, recognising that attitudinal and efficacy-based interventions may be more powerful than campaigns to change social norms alone.

The study faces a few limitations that should be taken into consideration. First, the cross-sectional design restricts causal inference, and the use of self-reported measures may introduce social desirability bias. On the other hand, entrepreneurial education was measured dichotomously (having or not having such education), which may underestimate its nuanced effects.

Future research should employ longitudinal designs to capture the dynamic evolution of attitudes, perceived behavioural control, and intentions over time. Cross-country comparisons could enlighten us on how cultural and institutional factors moderate these relationships. Finally, more specific measurements of entrepreneurial education (e.g., intensity, quality, and pedagogy) could help identify which programme components exert the strongest influence. By addressing these issues, future studies can provide deeper insight into how education translates into entrepreneurial behaviour across diverse economic contexts.

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PREDVIĐANJE PREDUZETNIČKIH NAMERA KROZ PREDUZETNIČKO OBRAZOVANJE: ANALIZA ZASNOVANA NA TEORIJI PLANIRANOG PONAŠANJA

Rezime: Ovaj rad ispituje kako preduzetničko obrazovanje oblikuje preduzetničke namere univerzitetskih studenata u Srbiji koristeći Teoriju planiranog ponašanja (TPP) kao konceptualni okvir. Studija je imala za cilj da testira da li lični stav, subjektivne norme i percipirana kontrola ponašanja posreduju u vezi između preduzetničkog obrazovanja i preduzetničkih namera. Podaci su prikupljeni od 445 studenata Univerziteta u Nišu korišćenjem tehnike snežne kugle. Koristeći faktorsku analizu, analizu korelacije i modeliranje medijacije, istraživanje je potvrdilo da preduzetničko obrazovanje značajno poboljšava stavove studenata i percipiranu kontrolu ponašanja, što zauzvrat snažno predviđa preduzetničke namere, dok subjektivne norme nisu pokazale pozitivan efekat. Rezultati pokazuju praktičnu relevantnost iskustvenih, praktično orijentisanih programa za jačanje samoefikasnosti i pro-preduzetničkih stavova. Studija doprinosi originalnosti pružajući empirijske dokaze iz tranzicione ekonomije gde je preduzetništvo karijerni izbor koji je između onog vođenog nuždom i prilikama, ističući kognitivne puteve, a ne društveno odobravanje kao ključne mehanizme. Ovo pruža dragocene smernice za edukatore i kreatore politika u osmišljavanju efikasnijih nastavnih planova i mera podrške koje razvijaju preduzetničke veštine, samopouzdanje i način razmišljanja usmeren na prilike.

Ključne reči: preduzetničko obrazovanje, preduzetničke namere, Teorija planiranog ponašanja, univerzitetski student, tranziciona ekonomija.

JEL Classification: I23, L26, J24.

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