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Article

Measuring Entrepreneurial Intentions of Students in Northwestern Croatia

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Abstract: This study explores the factors influencing entrepreneurial intentions among students in northwestern Croatia, with a focus on educational background, family entrepreneurial environment, studying experiences, and perceived self-efficacy. Empirical research was conducted between March and June 2024 on a sample of 160 students from northwestern Croatia, and a multiple regression analysis was performed to identify key predictors of entrepreneurial intentions. The results revealed that entrepreneurial self-efficacy significantly impacted students' intentions to start and run successful businesses, aligning with prior research on entrepreneurial behavior. However, other factors, such as family background and entrepreneurial education, showed no significant influence in this specific regional context. The findings suggest that educational programs should emphasize developing entrepreneurial self-efficacy to foster future entrepreneurs. This study highlights the importance of integrating entrepreneurial activities, such as business plan competitions and start-up incubators, into the curriculum. Limitations related to sample size and cross-sectional design are acknowledged, and future research is encouraged to explore additional factors and larger samples. This research provides valuable insights for educators and policymakers seeking to enhance students' entrepreneurial capacities and support regional economic development.

Keywords: entrepreneurial intentions; students; self-efficacy; entrepreneurial education; entrepreneurial ecosystem



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1. Introduction

Entrepreneurship has long been recognized as a critical driver of economic growth and innovation. As economies worldwide continue to evolve, the role of entrepreneurial education in fostering entrepreneurial activity has become increasingly significant. In particular, the development of entrepreneurial intentions among students is crucial for creating a pipeline of future entrepreneurs who can contribute to regional and national economic development. The entrepreneurial ecosystem in Croatia has seen substantial growth, creating a supportive environment for young entrepreneurs through government backing, funding opportunities, and a vibrant start-up culture with a growing focus on technology and innovation sectors. Notably, seven out of ten adults know someone who has recently started a business, marking an increase from the previous year and positioning Croatia second in Level B and fifth in the Global Entrepreneurship Monitor (GEM) rankings ([GEM \(Global Entrepreneurship Monitor\) 2024](#)). Government initiatives, particularly the European Structural and Investment Funds (ESIF), are critical in providing financial support to small and medium-sized enterprises (SMEs) and start-ups. Programs managed by the Croatian Employment Service, the Croatian Bank for Reconstruction and Development (HBOR), and the HAMAG-BICRO agency specifically target young entrepreneurs, alongside support from the National Programme for Youth 2020–2024 and investments

from the European Social Fund Plus (ESF+) and the European Regional Development Fund (ERDF) (Youth Entrepreneurship Policy Academy 2024). While SMEs across the European Union receive significant support from the ESIF, Croatia’s growth rate in entrepreneurship outpaces the EU average. In 2022, the 25–34 and 35–44 age groups accounted for 67.6% of new business ventures under 3.5 years old in Croatia, compared to 59.5% in the EU, as per the Total Entrepreneurial Activity Index (TEA). Notable disparities in newly established ventures between Croatia and other EU countries were observed in the youngest age categories (9.4% in Croatia versus 14.1% in the EU) and oldest (6.5% in Croatia versus 9.5% in the EU) (Singer et al. 2023).

Figure 1 compares the levels of Total Early-Stage Entrepreneurial Activity (TEA) between the 18–34 and 35–64 age groups, highlighting a higher percentage of young adults (18–34) involved in entrepreneurial ventures.

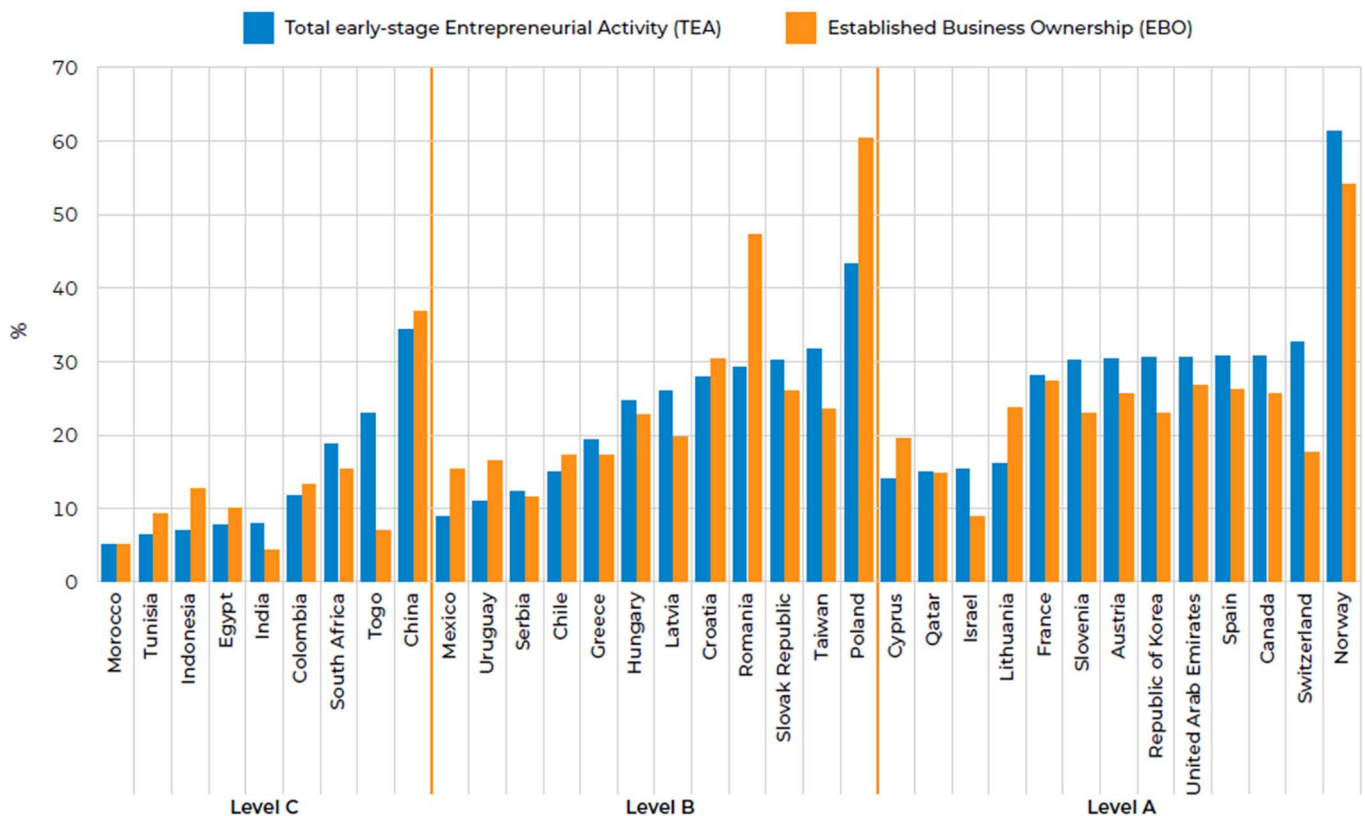


Figure 1. The levels of Total early-stage Entrepreneurial Activity (% adults in each age group) for age groups 18–34 and 35–64 (GEM (Global Entrepreneurship Monitor) 2023b, p. 69).

Crowdfunding has also emerged as a significant financing method, with platforms like the Croatian Crowdfunding Association raising funds for start-up projects. In 2024, Croatian start-ups secured approximately EUR 1.7 million in investments in deep tech (Nuqleus 2024), reflecting growing confidence from local venture capital firms, angel investors, and international investors. Although this figure may seem modest compared to European start-ups, which raised EUR 89 billion in 2019 and increased to EUR 213 billion by 2023, Croatia’s growth trajectory is notable. Since 2019, the total value of start-ups in the region has risen 2.4 times, positioning Croatia alongside Latvia and Lithuania as countries with significant relative increases in value. A 2023 survey revealed that over 63% of Croatians are interested in starting their own businesses, ranking Croatia highest among GEM-participating EU countries for entrepreneurial intent (GEM (Global Entrepreneurship Monitor) 2023a). This enthusiasm aligns with trends in other emerging start-up hubs across Europe, but Croatia distinguishes itself by emphasizing the development of a regional innovation hub through initiatives such as CroStartup and Nuqleus. Therefore, Croatia’s

entrepreneurial ecosystem presents a promising environment for young entrepreneurs, bolstered by robust government initiatives, expanding funding avenues, and a dynamic start-up culture. As these elements continue to evolve, Croatia is well positioned to enhance its reputation as an attractive start-up destination within Europe.

Northwestern Croatia, with its dynamic educational landscape, presents an interesting context for exploring how various factors influence students' entrepreneurial intentions. Entrepreneurship in northwestern Croatia, according to data from the [Croatian Bureau of Statistics \(2024\)](#), holds a significant share of business entities in counties such as Varaždin, Međimurje, Zagrebačka, and Koprivnica-Križevci. As of 2023, Varaždin County recorded nearly 9000 registered businesses, with just under 6000 actively operating. In Međimurje County, approximately 6885 businesses were registered, with more than 4400 active entities. Koprivnica-Križevci County reported over 4900 registered businesses, with around 3000 actively functioning. Furthermore, Varaždin County has approximately 9000 registered business entities for a population of around 160,000, resulting in a ratio of one business entity per 18 inhabitants. Međimurje County has around 6885 business entities for a population of approximately 113,000, yielding a ratio of one business entity per 16 inhabitants ([Croatian Bureau of Statistics 2024](#)). Entrepreneurial activity in these counties demonstrates a predominance of smaller entities with fewer employees, with the most represented sectors being trade, manufacturing, and professional and technical activities. Smaller businesses are often family-owned; however, accurately assessing family ownership is challenging in Croatia due to the lack of a universal definition for "family business" in both theory and practice, as well as the absence of a legal framework for its statistical tracking. Despite these limitations, the entrepreneurial foundation provided by family businesses remains significant and should not be overlooked.

This study aims to investigate the factors influencing entrepreneurial intentions among students in northwestern Croatia. Specifically, it examines how various factors, including educational background, family entrepreneurial environment, studying experiences, and perceived self-efficacy, impact their intentions to start a new business.

Entrepreneurial traits and behaviors have evolved alongside the growing recognition of the entrepreneur as a distinct individual. Key theories that have informed the creation of measurement scales for entrepreneurial traits and behaviors include human capital theory ([Becker 1964](#)), personality theory, and trait psychology ([Cattell 1943](#)). These psychology-based frameworks serve as the foundation for designing tools or assessments to evaluate entrepreneurial personalities and characteristics. Numerous links exist between individual psychology and personality traits, which are then applied to the study of entrepreneurs ([Zhao et al. 2010](#)). While developing measurement instruments presents certain challenges, the primary focus remains on constructing a reliable tool with a solid theoretical and conceptual foundation, capable of producing consistent results and demonstrating strong predictive ability ([Frese and Gielnik 2014](#)).

Previous research has highlighted the importance of entrepreneurial intentions in shaping entrepreneurial behavior and success. However, the interplay between these intentions and other influential factors, such as education and familial entrepreneurial background, remains underexplored, particularly in the context of students. By addressing this gap, the present study seeks to provide valuable insights that can inform educational programs, policymaking, and support mechanisms for aspiring entrepreneurs.

The models proposed for examining entrepreneurial behavior (business initiation behavior) encompass three major categories of variables: behavioral, attitudinal, and personality-related ([Cuesta et al. 2018](#); [Muñiz et al. 2014](#)). This study concentrates on personality variables ([Frese and Gielnik 2014](#)), with a specific focus on evaluating the appropriateness of using distinct entrepreneurial personality traits instead of broader, Big Five personality traits ([Postigo et al. 2021a](#)). There are no conclusive results to date regarding which personality trait measurement instruments and models are most effective, as research fields, samples, and questions vary. Consequently, some authors opt for general traits ([López-Nuñez et al. 2022](#); [Stoll et al. 2020](#); [Postigo et al. 2021a](#)), while others choose

to use more specific traits (Postigo and Fernández 2020; Muñiz et al. 2014; Walter and Heinrichs 2015; Postigo et al. 2021a, 2021b).

The primary research questions guiding this study are the following:

How does perceived entrepreneurial self-efficacy influence students' intentions in starting and running a business one day?

What is the impact of educational background and family entrepreneurial environment on students' entrepreneurial intentions?

To what extent do studying status and motivations shape students' entrepreneurial intentions?

To answer these questions, a multiple regression analysis will be conducted using data collected from a sample of students in northwestern Croatia.

The findings of this study are expected to contribute to the existing literature on entrepreneurship by providing empirical evidence from a specific regional and educational context. Moreover, the insights gained can help educators, policymakers, and support organizations develop targeted strategies to enhance the entrepreneurial capabilities of students.

The scientific contribution of this study lies in its development of an empirical model to test the influence of various educational and social factors on entrepreneurial intentions. Through a comprehensive analysis of educational, familial, and motivational factors, this study aims to pave the way for more effective support and development of entrepreneurial ventures among the student population in the region.

2. Materials and Methods

2.1. Model Development

Entrepreneurial intentions are widely regarded as precursors to entrepreneurial actions, and to advance entrepreneurship theory, it is essential for researchers to understand the factors that influence the intentions of individuals considering entrepreneurship for the first time (Rotefoss and Kolvereid 2005). These influencing factors are diverse, comprising a combination of personal attributes, traits, background, experience, and disposition (Shane et al. 2003). Entrepreneurial intentions refer to an individual's inclination to start a new business. Ajzen's (1991) Theory of Planned Behavior (TPB) has been widely used to explain the formation of entrepreneurial intentions. According to the TPB, intentions are influenced by attitudes toward behavior, subjective norms, and perceived behavioral control. Research by Kolvereid (1996) and Krueger et al. (2000) supports the TPB framework, showing that entrepreneurial intentions are strong predictors of entrepreneurial behavior. The interest in identifying the determinants of entrepreneurial intentions has led to a substantial body of research. Some studies focus on personal factors, following a cognitive approach, while others emphasize environmental influences, such as family, education, and societal factors, adopting a contextual approach (Popescu et al. 2016). Franke and Lüthje (2004) conducted an analysis of the entrepreneurial aspirations of business students from two universities in German-speaking countries and a leading academic institution in the United States. Their findings revealed a strong positive relationship between students' attitudes toward self-employment and their intention to pursue entrepreneurship. In a separate study, Lüthje and Franke (2003) surveyed students in technical disciplines at the Massachusetts Institute of Technology, investigating the influence of personal dispositions and perceived environmental conditions on entrepreneurial intent. Their research identified attitude toward entrepreneurship as the most significant determinant of entrepreneurial intention. Another line of research in the field of entrepreneurship emphasizes environmental conditions as key determinants of individuals' aspirations to start a business. Rajiman (2001) explored the influence of social networks on individuals' entrepreneurial intent. His findings indicated that having close relatives who were entrepreneurs significantly enhanced one's likelihood of pursuing self-employment. Research has demonstrated that entrepreneurial intentions do not arise universally across all contexts but are shaped by the interplay of both personal and environmental influences (Krueger et al. 2000; Krueger 2007; Tuan et al. 2019). Entrepreneurial intentions are analyzed in the literature using samples of nascent entrepreneurs, students, and individuals to assess the level of entrepreneurial potential in

an economy. Many authors focus on the entrepreneurial intentions of students (Kristiansen and Indarti 2004; Boissin et al. 2009; Israr and Saleem 2018), as economies often aim to promote entrepreneurial activity among their citizens. This study adds to the literature by using a sample of students.

Entrepreneurial self-efficacy appears to be a particularly important antecedent to new venture intentions, i.e., entrepreneurial intentions. Bandura's (1986) concept of self-efficacy is often used to measure entrepreneurial confidence and he contended that the concept of self-efficacy should be more specifically focused. Self-efficacy is a construct that measures a person's belief in their ability to successfully launch an entrepreneurial venture (McGee et al. 2009). The concept of self-efficacy is a dynamic construct that evolves over time as individuals acquire new experiences and information (Memon et al. 2019). Despite the growing attention given to entrepreneurs and entrepreneurial practices (Carroll and Hannan 2000; Ireland et al. 2001), there remains a significant gap in understanding entrepreneurial functioning within developing economies, particularly in diverse and challenging environments (Peng 2001; Puffer and McCarthy 2001).

While the self-efficacy construct seems promising, it remains empirically underdeveloped and many scholars have called for further refinement of the construct (Kolvereid and Isaksen 2006; McGee et al. 2009). Numerous empirical studies have assessed self-efficacy by soliciting responses regarding an individual's confidence in various domains that are not exclusively related to entrepreneurial activities (e.g., Baum and Locke 2004). Studies by Chen et al. (1998) and Zhao et al. (2005) showed that entrepreneurial self-efficacy was a strong predictor of entrepreneurial intentions and performance. Furthermore, Lütthje and Franke (2003) found that personal motivations, such as the desire for independence and financial success, were crucial determinants of entrepreneurial intentions.

Entrepreneurial education is widely recognized as a vital component in fostering entrepreneurial skills, attitudes, and behaviors among students. It is reasonable to assume that societies with a higher number of individuals possessing entrepreneurial skills, and thus more entrepreneurial activity, are better positioned for economic advancement than those with fewer such individuals, given that entrepreneurship plays a key role in driving socioeconomic transformation. Education systems in various countries incorporate entrepreneurial education, with varying degrees of effectiveness. According to Fayolle and Gailly (2008), entrepreneurial education aims to develop individuals' entrepreneurial mindset and equip them with the necessary skills to start and manage successful ventures. Studies have shown that exposure to entrepreneurship courses positively influences students' entrepreneurial intentions and confidence (Souitaris et al. 2007; Otache et al. 2019; Ndofirepi 2020; Phiri and Chasaya 2023). In their study on entrepreneurship courses, Kružić and Pavić (2010) aimed to achieve two primary objectives: first, to compile an inventory of the entrepreneurial characteristics of Croatian business students to define their entrepreneurial profile, and second, to assess the extent to which entrepreneurship education fostered the development of entrepreneurial capacities and mindsets. Their findings indicated that university-based entrepreneurship education effectively cultivated entrepreneurial capacity and mindset (Bilić et al. 2011). Furthermore, meta-analyses by Bae et al. (2014) and Zhang et al. (2022) indicated that entrepreneurial education significantly impacted entrepreneurial intentions. Educational background, including the level of education attained and the specific courses taken, influences entrepreneurial confidence and capabilities. A meta-analysis conducted by Martin et al. (2013) revealed that entrepreneurship education positively affected knowledge and skill acquisition, which in turn enhanced entrepreneurial intentions and success. The role of higher education institutions in providing practical entrepreneurial experiences has also been emphasized (Park 2024; Rasmussen and Sørheim 2006). Research by Peterman and Kennedy (2003) suggested that participation in entrepreneurship education programs enhanced students' perceptions of the feasibility and desirability of entrepreneurial careers. While the significance of entrepreneurship education has been acknowledged in the literature, there is still a paucity of empirical studies that specifically analyze its impact on entrepreneurial

intention, distinct from general education, and some researchers call for further empirical validation (Zhang et al. 2014; Adu et al. 2020).

Family background, particularly having entrepreneurial parents, plays a significant role in shaping entrepreneurial intentions and behaviors, given that Carr and Sequeira (2007) found that individuals with entrepreneurial family backgrounds were more likely to develop entrepreneurial intentions due to their exposure to entrepreneurial activities and role models. Similarly, Dunn and Holtz-Eakin (2000) demonstrated that parental entrepreneurship positively affected children's likelihood of becoming entrepreneurs. Entrepreneurial parents serve as role models, demonstrating the feasibility and desirability of entrepreneurial careers. According to Scherer et al. (1991), role models can significantly influence career choices and entrepreneurial intentions. Students observe entrepreneurial behaviors, decision-making processes, and problem-solving skills, which can inspire them to pursue similar paths. Families can directly transfer entrepreneurial knowledge and skills to their children. Entrepreneurial parents often involve their children in business activities, providing practical experience in various aspects of business operations, such as financial management, marketing, and customer service. Family discussions about business challenges and successes can impart valuable knowledge about entrepreneurship. Parental entrepreneurship positively influences entrepreneurial intentions through the transfer of knowledge and skills (Chlosta et al. 2012; Laspita et al. 2012).

Through the review and analysis of studies examining the factors that influenced entrepreneurial intentions, we identified the necessity to develop a multidimensional measure to effectively capture the complexities inherent in entrepreneurial intentions. Based on the literature and theoretical framework, the hypotheses to be tested are the following:

H1: *The confidence in financing a future business significantly impacts entrepreneurial intentions of students. Previous research suggests that entrepreneurial self-efficacy and confidence are strong predictors of entrepreneurial intentions.*

H2: *The confidence in one's own knowledge and understanding market needs significantly impacts entrepreneurial intentions of students.*

H3: *The educational background of respondents' parents significantly influences entrepreneurial intentions. Based on previous research, we argue that education plays a significant role in modeling entrepreneurial intentions.*

H4: *Family entrepreneurial background of respondents significantly influences entrepreneurial intentions.*

H5: *Studying status and motivation from studying significantly influence entrepreneurial intentions. This hypothesis explores the possibility that academic studying is beneficial in influencing entrepreneurial intentions.*

The research model was designed to test these hypotheses by examining the relationships between the independent variables, i.e., factors that influence entrepreneurial intentions (D, E, F, G, I, J, K, L, M) and the dependent variables, i.e., entrepreneurial intentions (M1 and M2).

Dependent Variables:

M1: Intention to start a start-up.

M2: Intention to run a successful business.

Independent Variables:

D: Mother's education level.

E: Father's education level.

F: Family entrepreneurial environment.

G: Studying status.

I: Motivation from studying.

J: Entrepreneurship courses taken.

K: Confidence in own knowledge to start a start-up (perceived self-efficacy).

L: Confidence in own knowledge on market needs (perceived self-efficacy).

M: Confidence in financing a future business (perceived self-efficacy).

The control variables of age, gender, and country of origin were excluded from the model due to their lack of theoretical and empirical relevance to the research outcomes. Additionally, they were omitted to avoid multicollinearity issues with other independent variables (Hünormund and Louw 2023). The hypotheses were designed to explore the relative impact of educational and familial background, perceived self-efficacy, and studying-related factors on entrepreneurial intentions. The research model will allow for the testing of these hypotheses using multiple regression analysis, providing insights into the key determinants of entrepreneurial intentions among students in northwestern Croatia. The chosen research method, multiple regression, is frequently employed by researchers in the same field (Izedonmi and Okafor 2010; Ndofirepi and Rambe 2017; Martyajuarlinda and Kusumajanto 2018; Tuan et al. 2019; Taiwo and Joseph 2020).

2.2. Instruments

In this research, specific factors were measured to understand their impact on students' entrepreneurial intentions and they included educational background, family entrepreneurial environment, studying experiences, entrepreneurial intentions, and perceived self-efficacy. The measuring instrument was developed based on relevant research to ensure consistency (Vodă and Florea 2019; Postigo et al. 2021a). The Battery for the Assessment of the Enterprising Personality (BEPE) was also employed to inform research questions regarding entrepreneurial intentions and self-efficacy (Muñiz et al. 2014). The measuring instrument for this research consisted of a structured questionnaire with closed questions. Entrepreneurial intentions were measured using Likert scale statements from 1 to 6, where 1 indicated "I don't agree at all" and 6 indicated "I completely agree". The entrepreneurial intention constructs in this study included the intention to start a start-up and the intention to lead a successful business. These constructs were used to measure the strength of students' entrepreneurial intentions. Entrepreneurial self-efficacy was measured similarly, using Likert scales from 1 to 6 (Lee and Paek 2014; Tanujaya et al. 2022). The constructs included confidence in financing a future business, understanding market needs, and overall entrepreneurial knowledge to start a start-up. These measures will assess students' confidence in their entrepreneurial knowledge and abilities, which is crucial for entrepreneurial success. In contrast, some authors, such as Tominc and Rebernik (2007), used binary yes/no questions like, "Do you have the knowledge, skills, and experience required to start a new business?" Self-efficacy questions were based on the works of Bandura (1986) and Zhao et al. (2005).

The aim of the construct family entrepreneurial environment is to measure the influence of having entrepreneurial role models in the family on students' entrepreneurial intentions and confidence. The scale was binary or yes/no.

Furthermore, this study will investigate how studying status and motivations affect students' entrepreneurial intentions, where the constructs were studying status, motivation for studying, and entrepreneurship courses taken to evaluate the impact of academic experiences and motivations, measured through binary options. The scales consisted of binary yes/no responses and four options (see Table 1).

Likert scales were designed with response options ranging from 1 to 6 to eliminate indecisive responses, which can occur with 5-point Likert scales. The consistency of the measuring instrument was tested using Cronbach's alpha. All questionnaire items are described in more detail in Table 1.

Table 1. Variable-measuring scales.

Name	Measuring Scale
<i>Educational background of parents</i>	
What is the educational level of your mother?	Five options *
What is the educational level of your father?	Four options *
<i>Family entrepreneurial environment</i>	
Is somebody in your family an entrepreneur?	Binary, Yes/No
<i>Studying status and experiences</i>	
Do you study?	Four options *
Did your studies motivate you to start a business?	Four options *
Did you attend an entrepreneurship course during your studies?	Binary, Yes/No
<i>Perceived self-efficacy</i>	
I think I possess sufficient knowledge to start a start-up.	Likert scale, 6 items
I think I possess sufficient knowledge to determine what consumers need to create a successful business.	Likert scale, 6 items
I think I possess sufficient knowledge to finance a future business.	Likert scale, 6 items
<i>Entrepreneurial intentions</i>	
Intention to start a start-up.	Likert scale, 6 items
Intention to run a successful business.	Likert scale, 6 items

* A more detailed operationalization of the measurement instruments is provided in Table 2.

Table 2. Sample characteristics.

	Percentage
Gender	
Male	22.5%
Female	77.5%
Age	
16–18 years old	1.2%
19–22 years old	71.9%
23–25 years old	20%
26–30 years old	4.4%
31 or older	2.5%
Educational level of mother	
High school	66.9%
Higher education institution (HEI)	18.8%
Postgraduate studies	7.5%
Primary school	6.8%
Educational level of father	
High school	67.5%
HEI	13.1%
Postgraduate studies	5%
Primary school	14.4%
Studying status (Do you study?)	
Yes, I study at a polytechnic in the field of economics.	20.6%
Yes, I study at a polytechnic in a non-economics-related field.	7.5%
Yes, I study at a university in the field of economics.	18.8%
Yes, I study at a university in a non-economics-related field.	53.1%

Table 2. Cont.

	Percentage
Level of study	
First year of undergraduate studies.	11.8%
Second year of undergraduate studies.	23.8%
Third year of undergraduate studies.	46.9%
Fourth year of undergraduate studies.	1.9%
First year of graduate studies.	10%
Second year of graduate studies.	5.6%
Attendance of entrepreneurship course during studies	
Yes (economics-related studies)	35.6%
No (economics-related studies)	5.6%
Yes (non-economics-related studies)	15%
No (non-economics-related studies)	41.3%
I am not a student	2.5%

2.3. Sample Characteristics and Data Analyses

The measuring instruments were administered online in the same order for all participants. An application developed ad hoc by the research team was used for the administration of the instrument. The interactive questionnaire was distributed to students in northwestern Croatia via social networks and personal contacts of the authors, and it was available from March to June 2024. A total of 160 responses were collected. The average age of respondents was 20 years, with the majority between 19 and 22 years old. Parental educational levels were predominantly high school (66.9% for mothers and 67.5% for fathers). All respondents were students: 53.1% were enrolled in non-economics-related universities, 7.5% in non-economics-related polytechnic programs, 20.6% in economics-related polytechnic programs, and 18.8% in economics-related universities. Respondents were at various stages in their studies. Additionally, 50.6% of respondents had taken an entrepreneurship course, spanning both economics and non-economics study programs. Sample characteristics are shown in Table 2.

The collected data were analyzed using multiple regression analysis to determine the relative influence of various factors on students' entrepreneurial intentions. In accordance with the Standards for Educational and Psychological Testing ([American Educational Research Association et al. 2014](#)), the reliability of the measuring instruments was assessed using Cronbach's alpha ([Cuesta et al. 2018](#)). This analysis aimed to identify statistically significant predictors of entrepreneurial intentions. The statistical analysis was performed using SPSS software.

3. Results

Firstly, the consistency of Likert measuring instruments was tested by using Cronbach's alpha on the obtained sample.

Cronbach's alpha for the entrepreneurial intentions of "I will definitely start a start-up one day" and "I will definitely run a successful company one day, that's my goal" was 0.822. The obtained values indicated a high internal consistency and reliability of the measuring instrument, meaning that the items were adequately interconnected to measure the same construct with a high level of reliability. The high value of alpha also implied that the respondents had consistently answered the questions, which implied clarity and understanding of the questions.

Cronbach's alpha for the entrepreneurial knowledge, "I think I possess sufficient knowledge to finance my future business", "I think I possess sufficient knowledge to determine what consumes need to create a successful business", and "I think I possess sufficient knowledge to set-up a business one day" was 0.845. These results also suggest high internal consistency.

Furthermore, the dependent variables were tested for multicollinearity. The variable "Do you study?" with the answer "Yes, at a university in the field of economics" reported a

VIF = 12.93, and for “During your studies, you attended an entrepreneurship course” with the answer “No” reported a VIF = 12.00, indicating high multicollinearity. These variables were removed from the models.

Homoscedasticity was further conducted with the Breusch–Pagan test. The p -value for the Breusch–Pagan test was 0.826 (greater than >0.05), which indicates that there was no significant evidence of heteroscedasticity in the model residuals, suggesting that the variance of the residuals was constant across different levels of the independent variables. The Lagrange multiplier statistic was 28.04, F-value 0.726, and p -value 0.866.

When testing for normality, the results of the Shapiro–Wilk test for normality of the residuals were the following: Shapiro–Wilk statistic 0.980, p -value 0.021, and since the p -value was less than 0.05, we rejected the null hypothesis that the residuals were normally distributed, indicating that the residuals of the model deviated from normality. We further transformed dependent variables with log transformation, with the results of the Shapiro–Wilk test being 0.990, p -value: 0.325. Since the p -value (0.325) was greater than 0.05, we failed to reject the null hypothesis that the residuals were normally distributed, which indicates that the log transformation successfully addressed the issue of non-normality in the residuals.

To test the research model, multiple linear regression was used, since the aim of this study was to understand how educational levels of parents, entrepreneurial background, and studying motivations affected entrepreneurial intentions. Two models were developed as depicted below.

Model 1

$$M1 = \beta_0 + \beta_1D + \beta_2E + \beta_3F + \beta_4G + \beta_5I + \beta_6J + \beta_7K + \beta_8L + \beta_9M + \epsilon \quad (1)$$

to test the influence of chosen variables, perceived self-efficacy, educational background, family entrepreneurial environment, and studying-related factors on entrepreneurial intentions measured with the statement “I will definitely start a start-up one day”, and

Model 2

$$M2 = \beta_0 + \beta_1D + \beta_2E + \beta_3F + \beta_4G + \beta_5I + \beta_6J + \beta_7K + \beta_8L + \beta_9M + \epsilon \quad (2)$$

to test the influence of chosen variables, perceived self-efficacy, educational background, family entrepreneurial environment, and studying-related factors on entrepreneurial intentions measured with the statement “I will definitely run a successful company one day, that’s my goal”.

Research results for Model 1 reported an R-squared of 0.247 (24.7% variation in the dependent variable explained by independent variables), adjusted R-squared of 0.207 (20.7% variations explained upon adjustment for the number of predictors), F-statistic of 6.185 ($p < 0.001$), and a probability (F-statistic) of 6.69×10^{-7} , which implied a statistically significant model.

In Table 3, the OLS regression results for the first model are reported.

Coefficients for the model are presented in Table 4. Perceived self-efficacy, measured as the knowledge required to understand consumer needs, was the only predictor of entrepreneurial intentions.

Research results for Model 2 reported an R-squared of 0.288 (28.8%), adjusted R-squared of 0.250 (25%), F-statistic of 7.630 ($p < 0.001$), and a probability (F-statistic) of 1.51×10^{-8} , which implied a statistically significant model. The results can be seen in Table 5.

Coefficients for the Model 2 are presented in Table 6. Similar to Model 1, perceived self-efficacy—measured as the knowledge required to understand consumer needs and the knowledge necessary to start a business—was the only predictor of entrepreneurial intentions.

Table 3. OLS regression results for Model 1.

Dependent Variable	I Will Start a Start-Up One Day.
R-squared:	0.247
Model:	OLS
Adjusted R-squared:	0.207
Method:	Least squares
F-statistic:	6.185
Prob (F-statistic):	6.69×10^{-7}
Log-Likelihood:	-243.19
No. Observations:	160
AIC ¹ :	504.4
Df Residuals:	151
BIC ² :	532.1
Df Model:	8
Covariance Type:	Non-robust

¹ Akaike’s Information Criteria; ² Bayesian information criteria.

Table 4. Significance of various factors on entrepreneurial intentions measured by the statement “I will start a start-up one day”.

Constant	0.870 (0.473)
What is the educational level of your mother?	-0.023 (0.124)
What is the educational level of your father?	0.179 (0.136)
Is somebody in your family an entrepreneur?	-0.311 (0.206)
Did your studies motivate you to start a business?	-0.011 (0.135)
I possess sufficient knowledge to start a start-up.	0.1034 (0.100)
I think I possess sufficient knowledge to determine what consumers need to create a successful business.	0.258 * (0.092)
I think I possess sufficient knowledge to finance a future business.	0.264 (0.168)
R-squared	0.247
No. Observations	160

Standard errors are reported in parentheses. * indicates significance at the 90% level, respectively.

Table 5. OLS regression results for Model 2.

Dependent Variable	I Will Definitely Run a Successful Company One Day, That’s My Goal.
R-squared:	0.288
Model:	OLS
Adj. R-squared:	0.250
Method:	Least squares
F-statistic:	7.630
Prob (F-statistic):	1.51×10^{-8}
Log-Likelihood:	-240.04
No. Observations:	160

Table 5. *Cont.*

Dependent Variable	I Will Definitely Run a Successful Company One Day, That's My Goal.
AIC ¹ :	498.1
Df Residuals:	151
BIC ² :	528.8
Df Model:	8
Covariance Type:	Non-robust

¹ Akaike's Information Criteria; ² Bayesian information criteria.

Table 6. Significance of various factors on entrepreneurial intentions measured by the statement "I will definitely run a successful company one day, that's my goal".

Constant	1.140 (0.464)
What is the educational level of your mother?	0.196 (0.122)
What is the educational level of your father?	0.142 (0.133)
Is somebody in your family an entrepreneur?	−0.338 (0.202)
Did your studies motivate you to start a business?	−0.013 (0.133)
I possess sufficient knowledge to start a start-up.	0.194 * (0.098)
I think I possess sufficient knowledge to determine what consumers need to create a successful business.	0.201 * (0.091)
I think I possess sufficient knowledge to finance a future business.	0.312 (0.110)
R-squared	0.288
No. Observations	160

Standard errors are reported in parentheses. * indicates significance at the 90% level, respectively.

Both models were statistically significant, implying that self-efficacy positively impacted students' entrepreneurial intentions.

4. Discussion

The findings indicated that entrepreneurial self-efficacy significantly influenced entrepreneurial intentions, consistent with Hypotheses 1 and 2, while the other hypotheses were rejected. The results align with those of [Chen et al. \(1998\)](#); [Zhao et al. \(2005\)](#); [Liu et al. \(2022\)](#); [Naktiyok et al. \(2010\)](#); [Sesen \(2013\)](#); [Farrukh et al. \(2017\)](#); and [Rosique-Blasco et al. \(2018\)](#). Similarly, [Dinis et al. \(2013\)](#) found that self-confidence and the need for achievement positively influenced entrepreneurial intentions among secondary students. This suggests that educational programs should focus on developing entrepreneurial self-efficacy to empower students with entrepreneurial intentions to start their own businesses. Courses and workshops designed to inspire and motivate students to envision themselves as future entrepreneurs could enhance their confidence and preparedness. The significance of entrepreneurial intentions implies that integrating entrepreneurial mindset development into the curriculum could be beneficial. Universities and educational institutions should incorporate practical entrepreneurial activities, such as business plan competitions, start-up incubators, and real-world projects, to bolster students' confidence and skills.

The findings of this study suggested that family entrepreneurial background, entrepreneurial education, and study experiences did not significantly influence entrepreneurial intentions among students in northwestern Croatia. This contrasts with the existing literature, where the impact of entrepreneurial education appears mixed. While some studies reported a positive correlation between education and entrepreneurial traits ([Zhang et al.](#)

2014; Bazkiaei et al. 2020), others, like by Maheshwari et al. (2023), did not find a direct effect on entrepreneurial intentions. Similarly, while Bouhalleb (2020) identified a moderate effect of family entrepreneurial background, this study's results indicated that such factors may not universally apply across different regions or student populations, highlighting the complex and context-specific nature of entrepreneurial intention development.

Policymakers and educational authorities should recognize the importance of entrepreneurial intentions in developing future entrepreneurs. Policies supporting entrepreneurial education and providing resources for start-up initiatives could play a crucial role in fostering a robust entrepreneurial ecosystem.

5. Conclusions

This study highlights the significant role of entrepreneurial self-efficacy in shaping confidence in starting and running a future business. These findings have important implications for educational programs, curriculum development, and policymaking aimed at fostering entrepreneurial mindsets. The regional context of northwestern Croatia provided a unique backdrop for this study, as the area had seen positive trends in economic development and entrepreneurial activities, particularly in the tourism sector (Horak et al. 2006). Understanding the specific challenges and opportunities faced by students in this region can provide valuable insights for regional policymaking and support programs. This study contributes to the literature by examining entrepreneurial intentions within this specific regional context. However, this study also had limitations related to its sample size, generalizability, and cross-sectional design.

This study was based on a specific sample of students in northwestern Croatia, which may have limited the generalizability of the findings to other populations or regions. Future research should consider larger and more diverse samples to enhance the external validity of the results. Additionally, this study relied on self-reported data, which may have been subject to response biases, such as social desirability bias or inaccurate self-assessment. Future studies could incorporate objective measures or triangulate self-reported data with other data sources. The research model used cross-sectional data, capturing a single point in time, which limited the ability to make causal inferences about the relationships between variables. Longitudinal studies would be beneficial to track changes in entrepreneurial intentions and confidence over time. The models explained only a moderate portion of the variance in the dependent variables, suggesting that other important factors influencing entrepreneurial intentions were not included in this study. Future research should explore additional variables, such as personality traits, environmental factors, and cultural influences.

Future research should address these limitations and explore additional factors to provide a more comprehensive understanding of the determinants of entrepreneurial confidence. Furthermore, this research paves the way for exploring additional variables, such as personal traits (e.g., risk tolerance, resilience), social support networks, and prior entrepreneurial experience, which influence entrepreneurial intentions.

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