Acta Sci. Pol.
Oeconomia 22 (3) 2023, 5–17
acta_oeconomia.sggw.pl ISSN 1644-0757 eISSN 2450-047X DOI: 10.22630/ASPE.2023.22.3.14

ORIGINAL PAPER

Received: 02.08.2023
Accepted: 04.12.2023

STUDENTS' ENTREPRENEURIAL INTENTIONS DURING THE COVID-19 PANDEMIC IN THE CONTEXT OF THE DARK TRIAD TRAIT

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ABSTRACT

Aim: Despite research on how the constellation of the dark triad traits relates to entrepreneurial intention, it still remains to be seen how nuanced such relationships were during the COVID-19 pandemic in Europe. In this article, we investigate this phenomenon by elaborating on the relations between components of the dark triad traits concerning pull and push factors affecting entrepreneurial intention. **Methods:** Using 4,056 datasets from the Global University Entrepreneurial Spirit Students' Survey (GUESSS) 2021 and data on unemployment rates and GDP per capita of 22 European countries, we employed multivariate regression analysis to examine the antecedents of entrepreneurial intention. **Results:** Our results show that GDP per capita is inversely related to entrepreneurial intention, with statistical significance also found for the unemployment rate and narcissism in their influence on entrepreneurial intention. More so, we found that COVID-19 unlocked the hidden potential of student entrepreneurship for the represented European countries. We also found interesting results on how the intensities of the dark triad influence entrepreneurial intentions. **Conclusions:** Difficult situations such as COVID-19 might trigger the manifestation of dark triad traits, which – to a greater extent – influence entrepreneurial intentions.

Keywords: Dark Triad Trait, GDP per capita, unemployment rate, entrepreneurial intention

JEL codes: D81, L6, D91

INTRODUCTION

Before the COVID-19 pandemic, research attributed attitudes towards behavior, subjective norms, and perceived behavioral control as antecedents of university students' entrepreneurial intentions [Gomes et al. 2021, Prasastyoga et al. 2021]. Nevertheless, in the circumstances of social and economic uncertainty, students' dark triad personality characteristics will reinforce entrepreneurial intentions [Cai et al. 2021]. In times of crisis, the dark triad could become condition-dependent adjustments in addressing life adaptive problems [Jonason et al. 2016]. The literature has extensively studied the prevalence of these traits and how much darkness is seen as a gift in disguise [Wu

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et al. 2019]. The dark triad is made up of psychopathy, Machiavellianism, and narcissism. Psychopathy is defined by callous social attitudes and amorality, Machiavellianism by manipulation and cynicism, and narcissism by vanity and self-centeredness [Cai et al. 2021, Peixoto et al. 2021]. Scholars have examined the phenomenon of the dark triad trait from the viewpoints of career interests [Jonason et al. 2014 and Cavallo 2020], country perspective [Kajonius et al. 2015], demographics, and sociological perspectives [Dinic et al. 2018, Jonason and Davies 2018]. Kajonius et al. [2015] found narcissism and Machiavellianism to be highly linked with value achievement and a preference for power, while psychopathy corroborated with hedonism. In evaluating the paradigms of the human development index, political orientations, cultural values, and narcissism was found to have the most profound variance [Jonason et al. 2019].

The COVID-19 pandemic has had diverse economic implications globally, leading to poor economic growth, rising inflation, unemployment, and lockdowns in most countries [Liu et al. 2020]. European countries experienced varying impacts, leading to the establishment of the Rehabilitation and Resilience Fund (RRF) to support the most vulnerable nations [Watzka and Watt 2020]. The latest report from the Global Entrepreneurship Monitor revealed differing effects of the pandemic, with 12 out of 38 economies showing significantly higher levels of entrepreneurial activities in 2022 compared to the pre-pandemic period, while 16 countries reported lower levels, and the remaining countries exhibited little change [The University of Strathclyde 2023]. Amidst the pandemic's complexities, studies have focused on the influence of the dark triad traits on entrepreneurial intention within and across countries [Cai et al. 2021]. Understanding the impact of the dark triad traits is crucial in comprehending how negative personality traits may stimulate entrepreneurial intentions in the face of challenging situations such as the COVID-19 economic turmoil. Additionally, variables such as age and gender, along with country-level indicators like GDP per capita and employment rate, are vital in explaining the variability of students' entrepreneurial intentions. The authors suggest that the implications of the pandemic vary across contexts, possibly serving as a push or pull factor for university students, triggering the dark triad traits and influencing entrepreneurial intentions. This paper aims to examine this relationship by theorizing the observable situation of the COVID-19 pandemic and shed light on the dark triad traits and entrepreneurial intentions of university students within the country-specific implications of the pandemic. This paper is organized as follows: literature review, assumptions and hypotheses, methodology, results, discussions, research implications, and conclusion.

ENTREPRENEURSHIP AND ENTREPRENEURIAL INTENTION

Entrepreneurship is a process by which individuals explore and exploit opportunities that can lead to the creation of new ventures, products or services [Carsrud and Brännback 2011]. However, the process is not uniform and varies from one individual to another. These variations lie in the fact that different primary motivators prompt individuals to nurse the intentions to start a business [Carsrud and Brännback 2011]. Entrepreneurial intention is understood as a self-acknowledged conviction by a person intending to start a new business and consciously plans to do so in the future [Thompson 2009]. According to the Theory of Planned Behavior (TPB), an individual's disposition can be seen from the point of their attitude, subjective norm, and perceived behavioral control, which encourages understanding of the dynamics of entrepreneurship. Amit et al. [1995] posited that individuals are driven into entrepreneurship by situational factors (for example, poor remuneration, the prospects of a new venture, a career setback, and the loss of their job) and referred to these elements as "push and pull factors". These push and pull factors have been studied in various contexts, such as entrepreneurship education, entrepreneurship engagement, and entrepreneurial motivation [Malebana 2021]. Zainuddin and Ismail [2011] found that entrepreneurship education had greater pulling factors than salient beliefs. Karanja et al. [2018] found that push factors play a more significant role in student entrepreneurial engagement. Malebana [2021] investigated entrepreneurial motivation among final-year commerce

students in Limpopo and Mpumalanga. The results showed that entrepreneurial motivation had a statistically significant positive relationship with entrepreneurial intention and its antecedents. The push and pull variables enable contextualization of various phenomena, although their strength and outcome differ. The authors believe that age, gender, GDP per capita, and unemployment rates are antecedents of the push and pull strategy – particularly in light of the COVID-19 pandemic. This explanation will aid in understanding the variation in students' entrepreneurial goals in the context of dark triad traits.

EMPIRICAL EVIDENCE ON THE DARK TRIAD TRAIT AND ENTREPRENEURIAL INTENTIONS

The dark triad trait and entrepreneurial intentions have been extensively studied [Kramer et al. 2011, Al-Ghazali and Afsar 2021]. Kramer et al. [2011] found that narcissism and psychopathy have a positive relationship with entrepreneurial intention, while Machiavellianism has no association among 158 students involved in a business plan competition. Al-Ghazali and Afsar [2021] found that individuals with narcissistic traits display more entrepreneurial intentions and that self-efficacy mediates the effect of narcissism on entrepreneurial intentions. Their study utilized data from 362 employees in Saudi Arabia in the entrepreneurial ecosystem built by the government to support entrepreneurship. McLarty et al. [2021], using a sample of 345 adults in industries across the United States of America, found that Machiavellianism and psychopathy influence entrepreneurial intentions, while narcissism does not. They recommended that the dark triad traits are important components of the entrepreneurial process that foster excellent entrepreneurial spirit, an entrepreneurial mindset, and new venture creation orientation. Cai et al. [2021], using an extended version of the dark triad scale (dart tetrad) in China, found Machiavellianism, narcissism, psychopathy, and sadism to have a significant positive influence on entrepreneurial intention. Wu et al. [2019], in their sample of aspiring business professionals, found a negative association between narcissism, psychopathy, and entrepreneurial intention. Studies have shown that the dark triad traits align with entrepreneurial intentions. To test the variability of entrepreneurial intention, a robust empirical examination will be timely to assess the variability of variables across different contexts.

RESEARCH HYPOTHESES

Drawing on assumptions from the literature that individuals exhibit different levels of dark triad personality traits with accompanying cross-situational variabilities and consequences, the study proposes that the dark triad traits (psychopathy, Machiavellianism, and narcissism) are survival strategies in

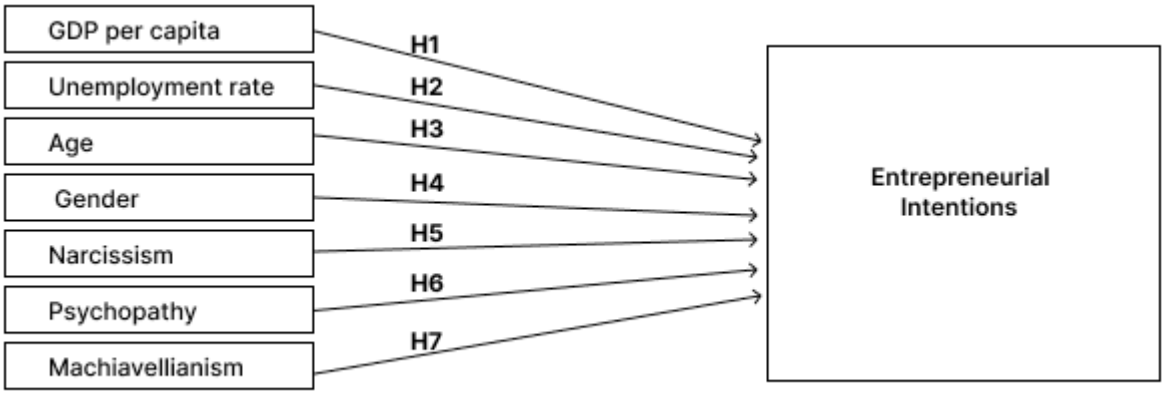

Fig. 1. Conceptual model of the study

Source: the authors.

difficult times [Birkas et al. 2016], especially given the current adversities of the COVID-19 pandemic and its implications for individuals' livelihoods. Additionally, drawing from the 'push and pull' approach of Gilad and Levine [1986] and Amit and Muller [1955], we propose that individuals who want to start a business out of necessity exhibit push behavior, while those who exhibit pull behavior are opportunity-driven and seek prospects for growth and independence.

Based on the previous, the current study assumes that students' entrepreneurial intentions can be explained in the context of their dark triad traits. Hence, the following hypotheses are made:

H_1: In countries with a higher GDP per capita, students present higher entrepreneurial intentions.

H_2: In countries with a high unemployment rate, students present higher entrepreneurial intentions.

H_3: Younger students often present higher entrepreneurial intentions.

H_4: Males more often display higher entrepreneurial intentions.

H_5: There is no statistically significant positive relationship between narcissism and entrepreneurial intention.

H_6: There is no statistically significant positive relationship between psychopathy and entrepreneurial intention.

H_7: There is no statistically significant positive relationship between Machiavellianism and entrepreneurial intention.

RESEARCH METHODS

To test the hypotheses, we used the ninth data collection wave of the GUESSS (Global University Entrepreneurial Spirit Students' Survey) database in spring 2021, one of the world's most significant entrepreneurship research endeavors. The survey, involving 58 countries on a global scale, measures student entrepreneurial intentions, activity, and the main influencing factors of students' decisions. For every data collection, the GUESSS core team at the University of St. Gallen and the University of Bern develops the online survey instrument, and then survey invitations are sent to country teams (one per country) – for which the Department of Economics and Economics Policy in Agribusiness, Poznan University of Life Sciences, Poznan, Poland, carried out the survey for Poland (under the supervision of Joanna Kosmaczewska). In Poland, the number of respondents was determined based on the number of students in the voivodeship (region) and calculated proportionally to the number of students. After that, partner institutions forward the survey to their students. Data is collected, stored, and prepared by the GUESSS core team. For this study, a sample was chosen for each country based on the completed observations for the dependent and independent variables espoused in the study to allow for within-country variability and reliable estimates of country-level effects amongst the respondents, as with Guerrero and Marozau [2023]. This resulted in a final sample of 4,056 observations. Our research is based on the self-reporting of respondents from the student population who fully completed the survey. Each country selected from the database was coded with a specific identification number. The selection criteria were based on the participation of the countries in the survey. Of the 28 EU member countries, only 22 were actively involved in the survey. The final sample was 4,056 students after excluding observations with missing values for the dependent and independent variables for quantitative data analysis. Austria (n = 101), Belgium (n = 68), Bulgaria (n = 48), Croatia (n = 30), Czech Republic (n = 74), Estonia (n = 29), Finland (n = 60), France (n = 15), Germany (n = 272), Greece (n = 59), Hungary (n = 387), Ireland (n = 6), Italy (n = 165), Latvia (n = 6), Lithuania (n = 95), the Netherlands (n = 32), Poland (n = 182), Portugal (n = 70), Romania (n = 4), Slovakia (n = 204), Spain (n = 2304), and Sweden (n = 8). It should be noted that countries with less than 10 samples were merely imputed for computational purposes. In addition, statistical information on economic indices (GDP per capita and unemployment rates) for the year 2021 was sourced from Eurostat for the participating countries. Entrepreneurial intention was measured using a six-item scale adapted from Linan and Chen [2009]. A seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used. This scale is widely accepted and adopted in

the GUESSS project. The Short Dark Triad developed by Jonason and Webster [2010] was employed, and the scale employs 12 items. To measure age, the respondents were asked to indicate the year they were born. Gender was measured by asking the respondents to fill in their gender as 'male' or 'female'. The GDP per capita and unemployment rate of the 22 EU countries were obtained from Eurostat for the year 2021. Table 1 shows the description of the represented countries.

Table 1 provides demographic and economic indicators for the 22 European countries. The computed mean age and standard deviation (STD) of the respondents in each country, unemployment rate (%), and GDP per capita (current USD) of 2021 of the respective countries.

RESULTS

To analyze the results of this study, multivariable regression analysis was applied to test the hypotheses earlier postulated at the onset of the study. The results of the tests are reported as follows:

H_1: In countries with a higher GDP per capita, students present statistically significant higher entrepreneurial intentions – rejected.

H_2: In countries with a high unemployment rate, students present statistically significant higher entrepreneurial intentions – accepted.

Table 1. Pull and Push Factors

Country	Age [Mean]	Age [STD]	Unemployment rate [%]	GDP per capita [Current USD]
Austria	31.98	10.02	4.8	48,586.80
Belgium	22.85	2.61	5.7	45,159.30
Bulgaria	27.81	8.35	4.8	10,079.20
Croatia	31.43	9.10	7.0	14,134.20
Czech Republic	24.88	5.79	2.1	22,931.30
Estonia	33.76	10.20	5.2	23,027.00
Finland	34.07	9.58	7.1	48,745.00
France	30.73	9.71	7.4	39,030.40
Germany	28.20	7.24	3.2	46,208.40
Greece	32.73	11.35	12.7	17,622.50
Hungary	30.91	9.15	3.7	15,980.70
Ireland	23.17	4.75	5.1	85,267.80
Italy	27.33	7.30	9.0	31,714.20
Latvia	32.00	0.00	7.5	17,726.30
Lithuania	27.69	8.39	5.6	20,233.60
Netherlands	25.03	7.48	3.8	52,397.10
Poland	25.18	5.79	2.9	15,721.00
Portugal	31.19	10.42	5.9	22,176.30
Romania	26.00	5.60	5.4	12,896.10
Slovakia	25.54	6.27	6.4	19,266.50
Spain	28.70	9.80	13	27,063.20
Sweden	24.88	2.59	8.2	52,274.40

Source: own elaboration.

Table 2. Impact of GDP, Unemployment rate on entrepreneurial intention levels

Model variables	B	s.e	T	LCI1	UCI1	P	β	LCI2	UCI2
Constant	0.00	0.02	0.00	–0.03	0.03	>0.05	0.00	–0.03	0.03
GDP	–0.11	0.02	–7.25	–0.14	–0.08	<0.001	–0.11	–0.14	–0.08
Unemployment rate	0.18	0.02	11.65	0.15	0.21	<0.001	0.18	0.15	0.21

Note: *B* = non-standardized coefficient of regression; *s.e.* = standard error for B; *t* = Student's t statistic; *LCI* = lower confidence interval; *UCI* = upper confidence interval; *LCI1*/*UCI1* = 95% confidence intervals for *B*; *p* = statistical significance; β = standardized coefficient of regression; *LCI2*/*UCI2* = 95% confidence intervals for β.

Source: authors' calculation.

A linear regression analysis was carried out to verify the hypotheses stated above. The relationships examined by the study were verified based on a multivariable linear regression analysis covering a total of $N = 4056$ observations. As shown by the regression analysis, there is a significant prediction with $F(2, 4053) = 93.59$; $p < 0.001$. The analysis of the R^2 coefficient demonstrated that the regression model for the independent variables considered (GDP, Unemployment rate) explained approximately 4% (4% after adjustment) of the variation in entrepreneurial intention. The non-adjusted and adjusted coefficients of variance explained were $R^2 = 0.04$ and adj.$R^2 = 0.04$, respectively. There were two significant predictors in the model. As shown by the analysis, the mean level of entrepreneurial intention was $M = 0.00$. In turn, the analysis of statistics for each predictor in the model resulted in the following findings:

An increase in GDP entailed a decrease in entrepreneurial intention, and the relationship was statistically significant, $B = –0.11$; $t = –7.25$; $p < 0.001$; $\beta = –0.11$, 95%CI = [–0.14 – –0.08]. In view of the above, H_1 needs to be rejected. An increase in the unemployment rate entailed a rise in entrepreneurial intention, and the relationship was statistically significant, $B = 0.18$; $t = 11.65$; $p < 0.001$; ß = 0.18, 95%CI = [0.15 – – 0.21]. In view of the above, H_2 is accepted.

The estimation results for the model tested are presented in Table 2.

H_3: Younger students statistically significant higher entrepreneurial intentions – accepted (Austria) and rejected (Lithuania), as shown in Table 3. The analysis of the regression model for Austria indicates that an increase in age entailed an increase in entrepreneurial intention, and the relationship was statistically significant, $B = 0.02$; t = 2.10; $p < 0.05$; $\beta = 0.24$, 95%*CI* = [0.22 – 0.26]. However, the analysis carried out for Lithuania demonstrated that an increase in age entailed a decrease in entrepreneurial intention, and the relationship was statistically significant, $B = –0.05$; $t = –3.20$; $p < 0.01$; ß = –0.36, 95%*CI* = [–0.39 – –0.33].

H_4: Males more often display higher entrepreneurial intentions – rejected.

H_5: There is no statistically positive significant relationship between narcissism and entrepreneurial intention – rejected.

H_6: There is no statistically positive significant relationship between psychopathy and entrepreneurial intention – accepted.

H_7: There is no statistically positive significant relationship between Machiavellianism and entrepreneurial intention – accepted, we found a negative relation.

The series of linear regression analyses for data collected in each country demonstrated the non-significance of particular regression models regarding the impact of variables such as age, gender, narcissism, psychopathy and Machiavellianism on entrepreneurial intention. Hence, H3, H4, H5, H6, and H7 need to be rejected. Nevertheless, the detailed analysis of coefficients of regression estimates for H7 in Slovakia demonstrated that an increase in Machiavellianism

Table 3. Influence of age on entrepreneurial intention

Country	Variables in the Model	*B*	*s.e*	*T*	*DPU1*	*GPU1*	*P*	β	*DPU2*	*GPU2*	Model Relevance
Lithuania	constant	1.62	0.72	2.26	0.19	3.05	<0.05	0	–1.43	1.43	$F(9, 85) = 1.52$; $p > 0.05$
	age	–0.05	0.01	–3.2	–0.08	–0.02	<0.01	–0.36	–0.39	–0.33	
	gender-male	0.03	0.25	0.13	–0.46	0.52	>0.05	0.01	–0.48	0.51	
	machiavellianism	0	0.03	–0.15	–0.05	0.05	>0.05	–0.02	–0.07	0.03	
	psychopathy	0	0.02	0.07	–0.05	0.05	>0.05	0.01	–0.04	0.06	
	narcissism	0	0.02	–0.17	–0.05	0.04	>0.05	–0.02	–0.07	0.02	
Austria	constant	–1	0.46	–2.18	–1.91	–0.09	<0.05	0	–0.91	0.91	$F(9, 90) = 1.37$; $p > 0.05$
	age	**0.02**	**0.01**	**2.1**	**0**	**0.04**	**<0.05**	**0.24**	**0.22**	**0.26**	
	gender-male	–0.13	0.2	–0.67	–0.53	0.26	>0.05	–0.07	–0.47	0.33	
	machiavellianism	0.03	0.02	1.9	0	0.07	<0.10	0.23	0.19	0.26	
	psychopathy	–0.03	0.02	–1.34	–0.07	0.01	>0.05	–0.16	–0.2	–0.12	
	narcissism	0	0.02	–0.3	–0.04	0.03	>0.05	–0.04	–0.07	0	

Note: *B* = Non-standardized regression coefficient*; s.e.* = standard error for *B*; *t* = Student's t statistic; *DPU* = Lower confidence interval; *GPU* = Upper confidence interval; *DPU1* / *GPU1* = 95% confidence intervals for *B*; p = Statistical significance; β = Standardized regression coefficient; *DPU2* / *GPU2* = 95% confidence intervals for β.

Source: authors' calculation.

entailed a decrease in entrepreneurial intention, and the relationship was statistically significant, $B = –0.03$; $t = –2.37$; $p < 0.05$; $\beta = –0.21$, 95%*CI* = [–0.24 – –0.18]. Thus, the conclusion that there is no statistically positive significant relationship between Machiavellianism and entrepreneurial intention is not the only finding from this paper. Slovakia's example demonstrated an opposite, statistically significant relationship between Machiavellianism and entrepreneurial intention (Table 4).

A similar result was observed in the Czech Republic: an increase in Machiavellianism entailed a decrease in entrepreneurial intention, but the relationship

Table 4. Machiavellianism and entrepreneurial intention

Country	Variables in the model	*B*	*s.e*	*T*	*DPU1*	*GPU1*	*P*	β	*DPU2*	*GPU2*	Model relevance
Slovakia	Constant	–0.71	0.4	–1.77	–1.49	0.08	<0.10	0	–0.78	0.78	$F(9, 194) = 1.56$; $p > 0.05$
	Age	0.02	0.01	1.92	0	0.04	<0.10	0.14	0.11	0.16	
	Gender-Male	–0.1	0.14	–0.72	–0.38	0.18	>0.05	–0.05	–0.33	0.23	
	Machiavellianism	**–0.03**	**0.01**	**–2.37**	**–0.06**	**–0.01**	**<0.05**	**–0.21**	**–0.24**	**–0.18**	
	Psychopathy	0.03	0.01	1.89	0	0.06	<0.10	0.16	0.13	0.19	
	Narcissism	0.02	0.01	1.94	0	0.04	<0.10	0.14	0.12	0.17	

Table 4. Machiavellianism and entrepreneurial intention (cont.)

Country	Variables in the model	*B*	*s.e*	*T*	*DPU1*	*GPU1*	*P*	β	*DPU2*	*GPU2*	Model relevance
Czech Republic	Constant	–0.22	0.67	–0.33	–1.56	1.11	>0.05	0	–1.34	1.34	$F(9, 64) = 0.87$; $p > 0.05$
	Age	0.01	0.02	0.7	–0.02	0.05	>0.05	0.09	0.05	0.13	
	Gender-Male	–0.02	0.24	–0.08	–0.49	0.45	>0.05	–0.01	–0.48	0.46	
	Machiavellianism	–0.04	0.02	–1.61	–0.09	0.01	>0.05	–0.26	–0.31	–0.21	
	Psychopathy	0	0.03	–0.07	–0.05	0.05	>0.05	–0.01	–0.06	0.04	
	Narcissism	0.01	0.02	0.34	–0.04	0.06	>0.05	0.05	0	0.1	

Note: *B* = Non-standardized regression coefficient*; s.e.* = standard error for *B*; *t* = Student's t statistic; *DPU* = Lower confidence interval; *GPU* = Upper confidence interval; *DPU1* / *GPU1* = 95% confidence intervals for *B*; p = Statistical significance; β = Standardized regression coefficient; *DPU2* / *GPU2* = 95% confidence intervals for β.

Source: authors' calculation.

was not statistically significant, $B = –0.04$; $t = –1.61$; $p < 0.05$; ß = –0.26, 95%*CI* = [–0.31; –0.21]. In other countries, that predictor was found not to be significant in the analyses of regression estimates.

DISCUSSION

The study aimed to examine students' entrepreneurial intentions in the context of dark triad traits mirroring the 'push and pull' approach. Seven hypotheses were tested to understand the relationship between these variables. There was no sufficient statistical evidence to accept the first hypothesis as results indicated that countries with higher GDP per capita create a decrease in entrepreneurial intention. This corroborates with the findings of Sansone et al. [2020]. From the push and pull perspective, there is an overlap of necessity and opportunity entrepreneurship, indicating that entrepreneurial intention is a dynamic continuum. The second hypothesis tested revealed a statistically significant relationship between the unemployment rate and entrepreneurial intention. This implies that an increase in the unemployment rate will cause a subsequent increase in entrepreneurial intention. Unemployment is generally seen as unfavorable in the job market, which tends to encourage necessity entrepreneurship. Within the EU, statistics show varying levels of unemployment, which suggests cyclical movements [Eurostat 2022]. Our findings imply that an increasing unemployment rate is a push factor that makes students tilt towards self-reliance, creating positive entrepreneurial intentions to start a venture. The COVID-19 pandemic increased the level of unemployment across countries, with most people losing their jobs. Within this context, entrepreneurship could be perceived as an option to escape the adverse labor market conditions posed by the economic turmoil.

Results from the third hypothesis suggest that H3 should be rejected for all countries. We conducted further analyses for each country's student group and found interesting cases for Austria and Lithuania. To reiterate, similar to the rejection of H3, we believe that entrepreneurship is not limited by age, and that the psychological makeup of individuals serves as the primary indicator for all age groups. In Austria, our results indicate that younger students indeed exhibit a higher level of entrepreneurial intention. This finding supports the work of Schwarz et al. [2009], which suggests that younger students in Austria tend to have high levels of ambition and risk-taking tendencies that could lead to entrepreneurial ventures. The study also indicates that at age 35, students become more risk-averse and conservative when it comes to engaging in undertakings associated with high levels of uncertainty and risk. In contrast, in the case of Lithuania, we made a rather interesting discovery that differs significantly from the findings in Austria. Our results suggest that entrepreneurial intention decreases with increasing age. While our previous result for

Austria and our current finding are complementary in the sense that entrepreneurial intention increases with age, this is true for Austria but not for Lithuania. We argue that the findings of Schwarz et al. [2009] may also apply to Lithuania.

Moreover, contrary to the widely-reported findings that males exhibit higher entrepreneurial intention than females, our study produced a different result. The assertion does not hold true in our study, leading to the rejection of the null hypothesis. Although existing discussions on the masculinity and femininity debate have emphasized that a high level of masculinity facilitates higher levels of entrepreneurial intention, which in turn leads to entrepreneurial behavior [Newbery et al. 2018], we found a different outcome. From a national standpoint, while culture plays an important role in nurturing entrepreneurial identity and explaining national differences in entrepreneurial intention levels, only a small portion of students' entrepreneurial intentions can be explained by these situational factors. Our results suggest that females find entrepreneurial ventures to be financially rewarding and appealing, and as a result, this orientation leads to an increase in entrepreneurial intention, particularly during the COVID-19 pandemic. To further elaborate on our findings, we observed that, based on our sample, the debate on masculinity and femininity appears to be more prevalent in feminine societies (Netherlands, Lithuania, Latvia, Sweden, Spain, Romania, Portugal, Bulgaria, Belgium, Croatia, Estonia, Finland, and France) compared to masculine societies (Austria, the Czech Republic, Germany, Greece, Hungary, Ireland, Slovakia, Italy, and Poland), according to Hofstede's national culture [Hofstede Insights, 2022].In addition, results from hypothesis five indicate that students showing a higher level of narcissistic tendencies reported a higher level of entrepreneurial intention. This suggests that the dark triad component (narcissism) predicts entrepreneurial intention. Our results are quite different from those of prior works that reported a negative relationship between narcissism and entrepreneurial intention [Al-Ghazali and Afsa 2021]. Even though individuals with narcissistic tendencies have been widely acclaimed as highly manipulative and deceptive, the life history theory suggests that those with a high level of the dark triad traits tend to be more disposed to a fast-life approach and taking risks [Wu et al. 2019]. Moreover, students with such traits tend to be more risk-seeking and thrive very well in their endeavors, especially in highly volatile environments [Jonason and Webster 2010, Wu et al. 2019]. The choice of entrepreneurship becomes more appealing for such individuals [Jonason et al. 2010]. Our findings corroborate the findings of Hmieleski and Lerner [2016], indicating that a higher level of narcissism increases the level of entrepreneurial intention. This could inform the impetus as to why such individuals tend to take more risks during the COVID-19 pandemic.

Moving on, our results revealed no statistically significant relationship between psychopathy and entrepreneurial intention. This finding contrasts with previous studies' results [Wu et al. 2019, Cai et al. 2021], which found a significant relationship between the variables. Within the context of these studies, our study revealed that manipulative psychopathic students are less likely to pursue an entrepreneurial venture for which they have a great passion, especially in the unprecedented circumstances of the COVID-19 pandemic. As such, psychopathy, which was reported to be an essential trigger for advancing an entrepreneurial plan, did not predict entrepreneurial intention in our sample.

Finally, based on the results of H_7, our study found a negative relationship between Machiavellianism and entrepreneurial intention. This implies that students with a high level of Machiavellianism tend to have low entrepreneurial intentions, especially in our sample in Slovakia and the Czech Republic. Other countries, however, showed no statistical significance in the association of these variables. On one hand, in the case of Slovakia, we allude to the cultural and ethical transformation in the country during the transition from a totalitarian to a democratic regime as an explanation for the higher level of Machiavellian traits [Bogdanovi et al. 2018]. On the other hand, in the case of the Czech Republic, our findings suggest that an increase in Machiavellianism led to a decrease in entrepreneurial intention. This result is not far-fetched from that of Slovakia. From a historical perspective, the Czech Republic and Slovakia shared similar cultural traits and ideologies as

part of their once independent country, Czechoslovakia, which became necessary with the collapse of the Habsburg monarchy at the end of World War I [Whitefield and Evans 1999, Mysíková et al. 2019].

IMPLICATIONS FOR THEORY AND PRACTICE

The primary aim of this study was to investigate students' entrepreneurial intentions in the context of dark triad traits using push-pull orientation. This study presents relevant insights and practical implications for theory and practice. Theoretically, it suggests that the dark triad traits may influence students' entrepreneurial intentions. By clarifying the relationship between negative personality traits and students' entrepreneurial intentions, this study presents evidence of personality differences in entrepreneurship – especially in unprecedented situations like the COVID-19 pandemic, where individuals are expected to dig deeper into their reserves of resilience, adaptability, and self-motivation. Recognizing the influence of dark triad traits in entrepreneurship underscores the importance of understanding the multi-faceted nature of entrepreneurial decision-making. This implies that in times of crisis, individuals' personalities provide valuable insights into how they may respond to uncertainties in the entrepreneurial environment.

The empirical results of the study highlight significant implications for practice in two key areas. First, it allows the identification of at-risk groups among students who exhibit high dark triad trait scores, making them potentially more susceptible to negative entrepreneurial outcomes [Hanson et al. 2023]. Our findings suggest that an increase in Machiavellianism resulted in a decrease in entrepreneurial intention. This finding has significant implications for promoting entrepreneurial venturing among students with high Machiavellian tendencies, especially during an economic recession that could result from lockdown during the COVID-19 pandemic. Students in this category may require support and guidance to improve their ethical decision-making and interpersonal skills to reduce potential negative consequences in their entrepreneurial pursuits. Finally, in the second area, the study highlights the need for psychological screening for entrepreneurial programs or making investments in start-ups. This goes beyond traditional curricula and emphasizes the development of support structures, including ethical mentoring, to enhance entrepreneurial personality traits, instill ethical values, and equip students with the necessary skills and mindset to succeed in an ever-evolving business landscape.

CONCLUSIONS

Our study delves into a pressing concern of our times: the impact of negative personality traits on students' entrepreneurial intentions in the face of global crises like the COVID-19 pandemic. The research highlights the relevance of psychological factors in entrepreneurial decision-making and suggests that certain dark triad traits can play a pivotal role in shaping students' entrepreneurial drive. The study identified an overlap between necessity- and opportunity-driven entrepreneurial activities, providing strong evidence that a high GDP per capita does not reduce students' entrepreneurial intentions. As societies grapple with economic uncertainty and job market fluctuations, understanding how these traits – as well as contextual factors – influence entrepreneurship is crucial. This insight paves the way for a more holistic approach to entrepreneurial decision-making and support, ensuring students can harness their unique characteristics to succeed in the entrepreneurial realm, even amidst adversity. The study also carries a broader implication for entrepreneurship by highlighting that beyond skill sets, market knowledge, and resources, understanding the role of personality traits in students' entrepreneurial intentions is crucial for our sample.

The major limitation of the study is the non-representativeness of the sample, which limits the generalization of the study to any country (not just Romania, Latvia, and Sweden). As such, the results apply only to the respondents (the study group). Although we found a general trend in the surveyed group of respondents, which shows that the dark triad trait components serve as a valuable predictor of entrepreneurial intention (especially when considering the push-pull orientation in times of crisis), this should not be interpreted as a generalization to any country.

Future research should examine the dark triad's impact on the transition from intention to entrepreneurial action, particularly during challenging economic situations. Researchers should also explore how cognitive biases interact with negative personality traits and influence entrepreneurial outcomes in guiding tailored interventions.

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INTENCJE PRZEDSIĘBIORCZE STUDENTÓW W CZASIE PANDEMII COVID-19 W KONTEKŚCIE CECH CIEMNEJ TRIADY

STRESZCZENIE

Cel: W pracy przeanalizowano związek cech ciemnej triady i intencji przedsiębiorczych wśród studentów w kontekście wystąpienia pandemii COVID-19 w wybranych krajach w Europie. **Metody:** W pracy wykorzystano dane empiryczne zebrane w ramach projektu GUESSS 2021 oraz dane wtórne charakteryzujące bezrobocie i PKB per capita dla 22 krajów europejskich. Do analizy danych wykorzystano wielowymiarową

analizę regresji. **Wyniki:** Otrzymane wyniki pozwoliły ustalić, że badani studenci z krajów o wyższym PKB per capita wykazywali niższy poziom intencji przedsiębiorczych. Ponadto ustalono statystycznie istotne zależności także dla wskaźnika bezrobocia i narcyzmu w kontekście intencji przedsiębiorczych badanych studentów. **Wnioski:** Trudne sytuacje, takie jak pandemia COVID-19, mogą wywoływać manifestację cech ciemnej triady, które w większym stopniu wpływają na intencje przedsiębiorcze wśród studentów.

Słowa kluczowe: cechy ciemnej triady, PKB per capita, wskaźnik bezrobocia, intencje przedsiębiorcze studentów