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# CREATIVITY OF STUDENTS IN FAVOUR OF THEIR ENTREPRENEURIAL INTENTIONS: EMPIRICAL EVIDENCE FROM POLAND

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**Abstract.** The article aims to empirically verify the impact of creativity on students' entrepreneurial intentions using a theoretical framework of the enhanced theory of planned behaviour of Icek Ajzen. The primary research tool was a survey conducted among students (n = 719) of several universities in Kraków, Poland. Statistical calculations of multiple regression positively verified the hypothesis that students' creativity strengthens their entrepreneurial intentions to start their own business. The model has a strong predictive power ($R^2$ = 65.3%). University teaching should be focused more on unleashing students' creativity to boost entrepreneurial intentions of students, then to transpose into startups, and then eventually to support the competitiveness of the economy. This article's novel contribution is to confirm that social norms in Poland do not play an essential role in stimulating entrepreneurial intentions despite numerous affirmations to this factor in other countries.

**Keywords:** creativity, entrepreneurship, entrepreneurship education, entrepreneurship intentions, theory of planned behaviour.

## Introduction

According to Schumpeter's (2017) thesis on creative destruction, capitalism could not exist without the constant birth of new firms created on the ruins of those that have collapsed, and this creative destruction is the foundation of entrepreneurship. Benny Gilad postulates that creativity and entrepreneurial behaviour are inseparable and both psychologists and economists should pay more attention to this interrelation, as "economic behaviour deserves at least some attention from researchers in the field of creativity" (1984, p. 151). Since that time, many researchers have attempted it, but not in all corners of the globe. Recently, Shane and Nicolaou (2015) confirmed that people with creative personalities are more likely to

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identify market opportunities and start their businesses. Terán-Yépez and Guerrero-Mora (2020) based on their literature review conclude that entrepreneurial creativity has a positive impact on identifying opportunities in the domestic market and in the cross-country entrepreneurship, which is their postulate for further empirical research.

The novelty of this article lies in four issues. Firstly, there are some empirical proofs in various countries (*e.g.* the United Kingdom (UK), Germany, the Czech Republic (CR), Indonesia). However, this problem is still unexplored in Poland, and according to our best knowledge, Polish entrepreneurship researchers have not undertaken it so far. The replication of research in management, economics or business studies, particularly in entrepreneurship, is advised and encouraged by many editors from reputable journals (Eden, 2002). Regardless of this common knowledge, various scholars have various attitudes towards this issue. Still, because the context of empirical research is different, the research replication should be paid more attention. Secondly, this study tries to develop the well-known and widely used Ajzen's theory of planned behaviour (TPB) by adding creativity as the independent variable to his model. Thirdly, the present-day generation differs from previous generations, and currently, the attitude towards an entrepreneurial career is perceived differently by millennials (Basuki et al., 2021), thus it seems to be reasonable to re-examine the entrepreneurial intentions of the academic youth, in particular in the context of creativity. Fourthly, it seems that in Poland the variable "social norms" plays an entirely different role than in other countries, so this study will have a unique insight into this issue and will try to identify the opposite or neutral impact than the one assumed in the original TPB.

The aim of the article is to empirically verify the impact of creativity on students' entrepreneurial intentions using a theoretical framework of the enhanced TPB of Ajzen (1991). Therefore, this article will try to answer the following research questions:

**RQ1:** What is the role of social norms towards entrepreneurial activities in Poland in stimulating entrepreneurial intentions of students and their willingness to start own businesses?;

**RQ2:** How does creativity impact the entrepreneurial intentions in the situational context in Poland?

## 1. Literature review

### 1.1. Entrepreneurial intentions and prior studies

Entrepreneurial intentions are well-established in the theory of entrepreneurship, and the three main theoretical concepts dominate the literature (Rai et al., 2017; Wach & Głodowska, 2021), namely Shapero's (1975) entrepreneurial event (EE), Ajzen's (1991) TPB, and Bird's (1988) theory of entrepreneurial idea. Thompson (2009) defines entrepreneurial intentions as a self-perceived conviction about the intention to create an economic enterprise and consciously planning to create this process in the future. Schlaegel and Koenig (2014) emphasise that TPB and EE are the two most competitive theories against each other, commonly tested empirically to explain entrepreneurial intentions.

Shapero (1975) laid the foundations for the equally often quoted conceptualisation of entrepreneurial intentions in his EE model, very often referred to as Shapero's EE. The model

was developed by Shapero and Sokol (1982), and then Krueger (1993) by including external variables into this model. This is why this model is sometimes referred to as the Shapero's–Krueger's model (Krueger et al., 2000). The Shapero's model assumes that human action is driven by inertia until there is some disruptive action, most often negative (*e.g.* job loss). Apart from the willingness to act, such elements as the credibility of behaviour understood dichotomously as its desirability and the probability of its occurrence (feasibility) are also important. These factors shape entrepreneurial intentions. What is more, in this model entrepreneurial intentions are shaped in a broader context, as both several personalities and behavioural factors (Hu et al., 2019; Reissová et al., 2020). Other researchers include more behavioural variables, such as entrepreneurial motivation (Ward et al., 2019) or emotional competencies (Bigos & Michalik, 2020). Demographic, behaviour or psychological traits impact not only entrepreneurial intentions but are also very important for entrepreneurs (Wach & Głodowska, 2021).

Another, one of the most popular, theoretical framework and often used in the empirical investigation, was proposed by Ajzen (1991) in his TPB. Behavioural intentions depend on three antecedents (Figure 1), namely (i) our attitude towards that behaviour – in the case of entrepreneurial intentions it will be the attitude towards entrepreneurship, (ii) perceived control of the behaviour, also identified as feasibility – entrepreneurial self-efficacy, and (iii) the social norms that shape the perception of that behaviour – which is the ethos of entrepreneurship in a particular society. The first two factors, *i.e.* the attitude towards a given behaviour, or rather the results related to this behaviour, and the perception of social norms concerning this behaviour, reflect the purposefulness and desire for such behaviour to occur. However, the third factor reflects the personal perception of the ability to control a given behaviour and is synonymous with a sense of self-efficacy or feasibility (Udayanan, 2019).

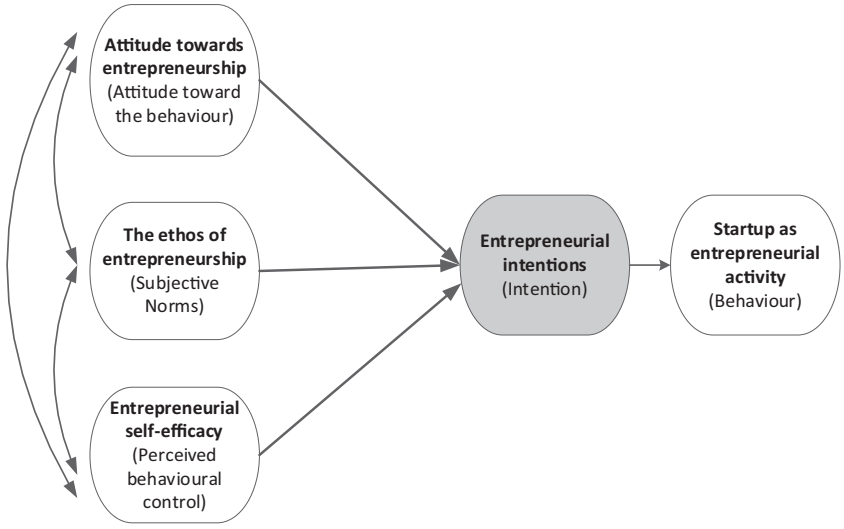


Figure 1. Adapted theory of the planned behaviour of Icek Ajzen (source: extended from Ajzen (1991, p. 182) and adapted by authors to the entrepreneurship theory

Thuy Nguyen (2020) observed that entrepreneurial behavioural control is a mediator through which environmental factors, especially financial issues, influence entrepreneurial intention of Vietnamese students. Majority of the empirical studies proved that family business and the experience of family entrepreneurship has a positive impact on stimulating entrepreneurial intentions of the youth, however, there are also empirical investigations with contrary results (Moussa & Kerkeni, 2021). We pay more attention to the TPB, as we will apply its foundations in our empirical study as well.

So far, empirical research on entrepreneurial intentions has been supplemented with many factors (as the extension of original Ajzen's theory) that were to explain the behaviour of people, especially the young generation, and were also conducted both in a given country (Udayanan, 2019) – rooted in domestic entrepreneurship context and cross-country comparisons (Ward et al., 2019; Nowiński et al., 2020; Reissová et al., 2020) – rooted in international entrepreneurship domain, in particular international comparatistics or comparative international entrepreneurship (Głodowska, 2019).

Bigos and Michalik (2020) found a statistically significant correlation between self-motivation as well as self-awareness and the entrepreneurial intentions of students. Bae et al. (2014) emphasise the special role of situational factors (such as employability or the ability to sacrifice and commit own business). The extant literature on entrepreneurial intentions has examined the relationship between human entrepreneurial activity and entrepreneurship policy, especially in the institutional context (Autio & Fu, 2015). Nowiński et al. (2020) observed that these intentions are shaped by the broadly understood institutional environment – perceived public support for entrepreneurship. Similarly, Wach and Bilan (2021) proved the negative impact of perceived administration barriers and the positive impact of perceived public support on entrepreneurial intentions of students. Wannamakok et al. (2020) observed the very interesting dimensional impact of institutional environment on entrepreneurial intentions – regulative, normative and cognitive environment, rooted in cultural issues. Similarly, Doanh (2021) observed different influences of different environment dimensions, especially the vital role of social capital.

Donaldson (2021) postulates that culture as a part of the entrepreneurial ecosystem plays an essential role in entrepreneurship, and future research should be focused on the entrepreneurial culture in a given country. Poland is considered a country with low social capital and where the ethos of entrepreneurship is low and does not have a stimulating role as it was originally invented in Ajzen's theory, thus just in the opposition to the mainstream of entrepreneurial intentions it is worth putting forward a completely new hypothesis, claiming that:

**H1:** Social norms on the ethos of entrepreneurship in Poland do not impact the youth's entrepreneurial intentions.

Kurczewska et al. (2020) observed that graduates' entrepreneurial success is influenced not only by academic knowledge itself but also by practical skills acquired through cooperation between universities and employers and entrepreneurs. Lavelle (2021) and Karyaningsih et al. (2020) empirically proved that entrepreneurship education impacts entrepreneurial mindsets and entrepreneurial intentions, and especially the empowering students has a positive impact on their entrepreneurial intentions (Hassan et al., 2021).

### 1.2. Creativity and entrepreneurial intentions in prior studies

Prabhu et al. (2008) underscore that creativity is a topic of ever-increasing interest, given its importance and applicability to literally every field. Creativity is crucial for the economy and its competitiveness. Still, most importantly, it is essential for the firm's development and competitiveness (Gong et al., 2009) and generally for entrepreneurship. In this context, Fillis and Rentschler (2010) emphasise that creativity enables entrepreneurs to take advantage of opportunities by sustaining competitive advantages for their firms. According to Kirzner (1999), this ability to identify valuable opportunities under conditions of uncertainty and implement them as innovations in the marketplace, in hindsight, generate entrepreneurial profits. Recognising a brand new innovation opportunity to which competitors react late leads to competitive advantage, and the Schumpeterian concept of creative destruction is evident here. Entrepreneurs, according to Schumpeter (2017), are the driving force behind economic development. Entrepreneurs are endowed with the spirit of creative destruction, *i.e.* they demolish what is inefficient and activate what is creative and new. Creative destruction means that the introduction of innovations causes changes not only in the enterprise but also in the economy as a whole, which contribute to economic growth (Kačerauskas, 2018). New entrants and other exogenous shocks are agents of change for creativity and innovation activity. Woodman et al. (1993) link creativity to innovativeness in that an individual's more remarkable ability to generate new and useful ideas is more likely to create their own innovations. This is basically in line with the so-called innovation triad developed by Schumpeter (2017): invention – innovation – imitation.

Zimmerer et al. (2008) define creativity as the ability to develop ideas and find new ways to solve problems and face opportunities. Similarly, Amabile (1988) and Dampérat et al. (2016) consider creativity as the generation of new ideas and useful work procedures. On the other hand, from a managerial point of view, creativity is defined as the ability to produce a new product, an appropriate product of high quality (Sternberg et al., 2002). Similarly, Phan et al. (2010) view creativity as a cognitive process involving the discovery of new patterns or combinations from general ideas, procedures and mental models is therefore a driver of entrepreneurial discovery. Hence, Rakib et al. (2020) observed that entrepreneurial creativity can be measured from the very concept of creativity, which is about creating, modifying something, and combining something new. In the most general terms, Dayan et al. (2013) interpret the creativity as an entrepreneur's ability to create something new that is relatively different from the existing one, based on originality of thinking and ability to elaborate. In a very similar way, della Corte and del Gaudio (2017) conceive entrepreneurial creativity as the ability to create and exploit opportunities and to create, recombine and/or exploit the firm's resources in new and different ways. The product of this creativity is not necessarily something entirely new but may be a combination of data or elements that previously existed to create something different. The characteristics of creativity are flexibility, strong curiosity, positive attitude, strong motivation, determination, and courage (Prabhu et al., 2008). Craft (1996) adds that the main characteristics of creativity are originality, versatility and divergence. Sułkowski and Patora-Wysocka (2020) underline that the creative processes in higher education institutions are of entrepreneurial and social nature.

Palos-Sanchez et al. (2020) found an improvement in intellectual and attitudinal skills to identify business opportunities a preliminary step to taking creative business decisions based among Spanish students having their startups. Socio-cultural environment plays a crucial role in shaping the entrepreneurial spirit in a society (Wach, 2015). Wardana et al. (2021) and Eyel et al. (2020) underscore that entrepreneurial culture successfully affects students' intention to be entrepreneurs. One of the challenges of contemporary higher education, apart from the well-described awakening of entrepreneurial intentions among the youth (Lavelle, 2021), is also inspiring students to think creatively. Recently, Zamrudi and Yulianti (2020) believe that it is essential to improve student creativity to develop entrepreneurial spirit among the students from Indonesia and they found a moderate correlation between creativity and entrepreneurial intentions. Alice Reissová et al. (2020) found that creativity influences significantly the decision to run a business. There are few or none of empirical studies linking the creativity with intentions to the best of my knowledge, so research replication is highly desirable. Therefore, the overviewed literature inspired us to test the following research hypothesis:

**H2:** As the main factor, the creativity of students strengthens their entrepreneurial intentions to start their own business;

**H3:** As an additional factor to the TPB, the creativity of students, strengthens their entrepreneurial intentions to start their own business.

## 2. Research methodology

The empirical research phase attempted to implement Ajzen's TPB among students in Polish realities. A quantitative approach was used for the empirical study. The primary research tool was a survey among students. The survey questionnaire was divided into six parts, the first five of which concerned the TPB – dependent variable (entrepreneurial intentions) and independent variables (entrepreneurial attitude, risk attitude, subjective norms, perceived behaviour control), next parts of the questionnaire included new independent variables as the extension of Ajzen's TPB, while the last part contained the basic characteristics of the respondent that served as control variables. The first six parts contained 4 to 7 questions rated on a 7-point Likert scale, which were then standardised and made into quasi-continuous variables by constructing aggregate indexes. For three variables, we used an original measurement scale from the literature. Similarly, the Creativity Index (CI) was composited based on 20 various questions on individual invention and students' creativeness. Individual parts of the questionnaire were distinguished in accordance with the developed research model (Figure 2) based on the TPB by Ajzen (2011), expanding it with all control variables and one explanatory variable.

According to the concept of Ajzen (1991), entrepreneurial intentions depend on these three independent variables, which are the entrepreneurial attitude, subjective norms, and the perceived control of behaviour. Since the intention literature postulates that other issues, especially personality and cognitive traits, determine entrepreneurial intentions (Hu et al., 2019), we decided to add another variable to the model – creativity of students.

Before modelling the regression estimations between the dependent variable and independent variables, the reliability measures (Zumbo et al., 2007) were checked (Cronbach's

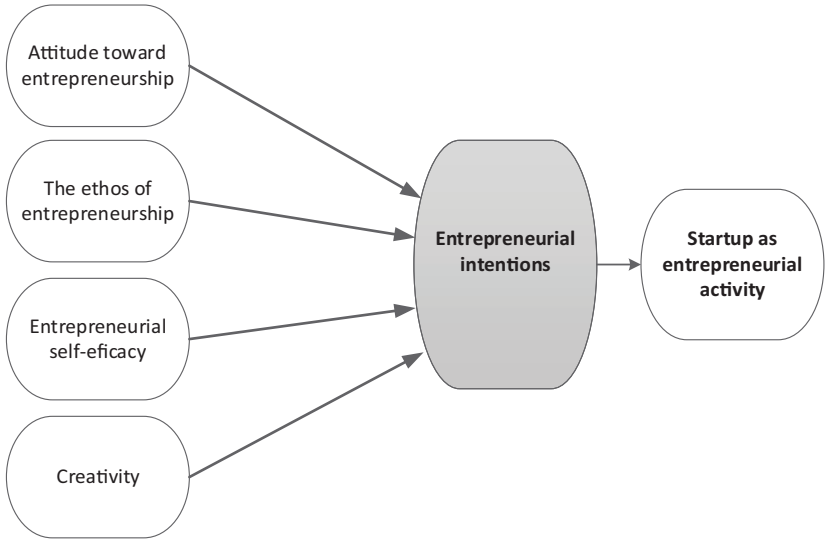


Figure 2. Conceptual model for hypotheses testing (source: created by authors)

alpha > 0.8; for ordinal Liker scale also Armor's theta > 0.9). The calculations confirmed the reliability and allowed to use of regression modelling.

The survey was conducted in seven different universities in Kraków, including: (ii) Jagiellonian University, (iv) Akademia Górniczo-Hutnicza University of Science and Technology, (i) Kraków University of Economics, (v) Kraków University of Technology, (iii) Pedagogical University of Cracow, (vi) University of Agriculture in Kraków, (vii) Jesuit University of Philosophy and Education Ignatianum.

Women constituted 66.8%, and men only 33.2% of the research sample. In terms of age, the research sample was dominated by students aged 20–21 (43.6%) and 22–23 (58.9%), only 9.7% of students were younger than 20 years, and 8% were over 25 years old. Most of the students came from larger cities (37.2%), and 26.1% were from smaller towns, while 36.1% came from the villages. The investigated students studied mainly at the bachelor level (67%), but also at the master level (25.9%), while doctoral students accounted to only 7.1% of the respondents. The investigated students represented the following fields of studies: (i) economics, finance and business: 50.6%, (ii) humanities and social sciences: 16.9%, (iii) science, technology and engineering: 16.7%, (iv) life, agricultural and natural sciences: 12.6%, (v) others, two different fields, or undefined: 3.2%.

The survey results were statistically processed using *Statistica* computer software. In order to verify the assumed hypothesis, the multiple regression was used, which allows visualising the relationships between several explanatory variables and one explained variable (entrepreneurial intentions), and more precisely, the impact of selected factors on the explained variable. Because the ordinal variables are impropriate for multiple regression, that is why we used a quasi-continuous indexed (Allison, 1999).

## 3. Empirical findings and discussion

One dependent variable (Entrepreneurial Intentions Index) and four explanatory variables (attitude toward Entrepreneurship Index, Social Norms Index, Entrepreneurial Self-Efficacy Index and CI) were selected for the calculations and estimations. We built two models for these variables (Table 1), whereas Model 1 included the variables from Ajzen's theory and additionally the CI, while Model 2 included only the CI variable (in this case a simple regression as applied).

Table 1. Results of multiple regression for the dependent variable of "entrepreneurial intentions" among investigated students (source: created by authors)

| **Model 1** | R = 0.808 R^2 = 0.653 adjusted R2 = 0.650<br>F (4.713) = 335.26 p <000000 Standard error of estimation: 0.853 | | | | | |
|---|---|---|---|---|---|---|
| n = 719 | **b*** | **Standard error b*** | **b** | **Standard error b** | **t(716)** | ***p*-value** |
| Constant | | | –0.870 | 0.211 | –4.120 | **0.000** |
| Attitude toward entrepreneurship | 0.731 | 0.025 | 0.822 | 0.028 | 28.617 | **0.000** |
| Social norms | 0.015 | 0.024 | 0.019 | 0.030 | 0.625 | 0.532 |
| Entrepreneurial self-efficacy | 0.098 | 0.026 | 0.127 | 0.033 | 3.767 | **0.000** |
| Creativity | 0.063 | 0.024 | 0.109 | 0.042 | 2.604 | **0.009** |
| **Model 2** | R = 0.329 R^2 = 0.108 adjusted R2 = 0.107<br>F (1.717) = 87.009 p < 0.0000 Standard error of estimation: 1.364 | | | | | |
| n = 719 | **b*** | **Standard error b*** | **b** | **Standard error b** | **t(717)** | ***p*-value** |
| Constant | | | 1.427 | 0.293 | 4.866 | **0.000** |
| Creativity | 0.328 | 0.035 | 0.566 | 0.060 | 9.327 | **0.000** |

*Note**: authors' calculations based on a survey (n = 719).

At the required level of significance, we find that selected determinants together significantly impact the entrepreneurial intentions of the investigated (Model 1) and the creativity have a significant impact on the entrepreneurial intentions (Model 2). The b parameter assessment with the four independent variables means that the positively declared this features (attitude, self-efficacy and creativity) favoured students' entrepreneurial intentions. The *p*-value determined for the student's *t*-test statistic indicates that these variables have a statistically significant impact on the chances of entrepreneurial intentions, which means that the hypotheses H3 was confirmed.

The estimated Model 1 allows us to explain as much as 65.3% of the entrepreneurial intentions' variability as an original dependent variable, and Model 2 only in 10.8%. In other words, this mean that creativity itself has an impact on intentions but at low estimations. Creativity with two selected determinants (attitude and self-efficacy) has a significant impact at relatively high estimations. Nonetheless, H2 hypothesis was confirmed by both models. The model has a strong predictive power ($R^2$ = 65.3%) to analyse the set of four factors together.

There is no statistical significance for the variable "social norms" because the ethos of entrepreneurship (social norms that shape the perception of that behaviour) in Poland among the society is not high, and sometimes even very harmful. The calculations prove that social norms do not play an essential role in Poland, and the hypothesis H1 can be accepted. Due to the socialistic propaganda in the years 1945–1989 the image of entrepreneurship, especially the entrepreneur's ethos in media and society, is still very poor. The natural entrepreneurial initiatives and the entrepreneurial spirit seem to be flourishing in Poland, despite the social norms. Doanh Duong (2021) received similar findings as for social norms in Vietnam.

The statistical calculations from Poland confirm the positive impact of students' creativity on their entrepreneurial intentions. This is line with most of the previous empirical studies (*e.g.* Canada, the UK, Germany, Italy, the CR, Indonesia).

Tantawy et al. (2021) empirically supported the role of creativity as an antecedent to entrepreneurship among Canadian students. Zamrudi and Yulianti (2020) found a moderate correlation between students' creativity and entrepreneurial intentions from Indonesia. Reissová et al. (2020) confirmed that creativity influences significantly the decision to run a business on s sample of students from three countries (the CR, Germany and the UK). Shane and Nicolaou (2015) confirmed that the creative personality impacts intentions to start business in the UK. Bellò et al. (2018) proved empirically the relations between creativity and entrepreneurial intentions, and what is more the entrepreneurial self-efficacy mediates the relationship between creativity and entrepreneurial intentions (based on a sample of 507 students from Italy). Similarily, Smith et al. (2016) empirically confirmed that creativity has a direct and positive effect on entrepreneurial intentions, and additionally creativity had a stronger relationship with intentions among women as female entrepreneurship is still an unexplored research domain (Gawel & Głodowska, 2021). Wang et al. (2022) supported also the other side relation that entrepreneurial education enhances individual creativity of students as well as creativity in university.

Contrary, Zampetakis et al. (2011) empirically observed on a sample of 180 undergraduate students from England, UK that the support for creativity in the academia and university teaching has no effect on their creativity or on their entrepreneurial intention. This means that the prior empirical results are non-conclusive and still need to be empirically tested, especially in the new cultural context. Bartha et al. (2019) underscore that there are considerable country-related differences in factors shaping entrepreneurial intentions of students, even in the same region with common historical background and similar values, as they used their general liner modelling based on a sample of 19 338 students coming from eight selected Central and Eastern European countries from the Global University Entrepreneurial Spirit Students' Survey. It means further research is needed.

## Conclusions

Creativity, despite unequivocal empirical findings, plays a crucial role in stimulating entrepreneurship and entrepreneurial intentions. Entrepreneurship education at different levels should include among other the individual entrepreneurship skills, that is education

for entrepreneurial dynamism, which promotes entrepreneurial attitudes such as creativity, innovation, inventiveness, own initiative, communicativeness, intrapersonal entrepreneurship, and which draws on broad behavioural sciences and is related to entrepreneurial intentions. Entrepreneurship teaching aims to promote creativity, innovation and self-employment and includes, among other things: on the one hand, the development of personal traits and skills which form the basis of the entrepreneurial spirit and entrepreneurial behaviour (creativity, sense of initiative, risk-taking, independence, self-confidence, leadership, team spirit) and, on the other hand, raising pupils' and/or students' awareness of self-employment and entrepreneurship as well as career opportunities (Al Issa, 2021).

We verified the hypotheses positively that students' creativity strengthens their entrepreneurial intentions to start their own business and that social norms in Polish society do not influence a decision to start own businesses. As all empirical studies, this article also has its research limitations. First, the research sample was relatively large, although it only included students from the second-largest city in Poland – Kraków. It is worth conducting such a survey in the entire population of students in a given country. Secondly, the number of questions in the survey questionnaire was limited, but it is worth expanding it with new research dimensions in the future. Thirdly, although perception is fully acceptable by psychologists and management researchers (Bailey et al., 2000), particularly in entrepreneurship research, it still does not allow to draw absolute conclusions even in entrepreneurship research. Fourth, the survey was conducted before the coronavirus pandemic, while the spreading COVID-19 in Europe throughout 2020 and now in 2021 has changed the situation diametrically (Loan et al., 2021). Entrepreneurial activities and their own business are certainly less popular. Therefore, researching entrepreneurial intentions would certainly obtain lower values in the survey.

The obtained empirical research results indicate the possibility of extending future research with new research areas, such as proactivity of students or their invention. It is also worth conducting a comparative study of students from different countries, as the issues related to creativity are also rooted in the national culture.

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