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A complex phenomenon of students' entrepreneurial potential

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ABSTRACT

Objective: This study extends beyond traditional research focused on entrepreneurial aspirations or cultural factors by proposing a universally applicable model to evaluate the entrepreneurial potential of both local and international students. It also aims to identify the characteristics of students with high entrepreneurial potential. By understanding these capabilities, higher education institutions can create more targeted and effective entrepreneurial education programs.

Research Design & Methods: This study explores the entrepreneurial potential among university students. We collected the data from 1 554 students studying at the University of Information Technology and Management (UITM) in Rzeszów, Poland. The study identifies four basic dimensions of entrepreneurship (creativity, motivation, locus of control, and risk-taking). Thus, its results determine students' 'entrepreneurial potential.' We measured the reliability of the constructed dimensions by Cronbach's alpha coefficient. We implemented a confirmatory factor to confirm the factor structure and assess the model's goodness-of-fit to the data.

Findings: The study identifies statistically significant differences in entrepreneurial potential among diverse demographic groups and backgrounds. It highlights the defining characteristics of entrepreneurial students, offering a comprehensive understanding of the factors that drive student entrepreneurship.

Implications & Recommendations: The research introduces the student entrepreneurial potential scale as a globally applicable tool and thus enables universities to assess and understand the entrepreneurial potential of their student populations. This allows institutions to design customized and impactful entrepreneurial education programs.

Contribution & Value Added: The contribution to the literature is significant because of the UITM's cultural diversity (one-quarter of students are international). The study included various demographic characteristics such as age, employment status, degree level, and country of origin. The comprehensive sample allowed us to create a profile of a student with high entrepreneurial potential. Such a student is typically a 19-21-year-old, studying programming, full-time in English at the undergraduate level, originating from Kazakhstan, China, or India.

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INTRODUCTION

In recent years, the entrepreneurial potential of university students has become a focal point of interest for researchers, educators, and policymakers due to its vital role in driving economic growth, innovation, and the generation of new employment opportunities. Entrepreneurial potential refers to students' ability to identify, develop, and exploit opportunities to create value in various contexts, often with limited resources (Shane & Venkataraman, 2000). This potential is a crucial attribute for preparing future business leaders who can adapt efficiently to a rapidly changing global market environment (Bae *et al.,* 2014; Nabi *et al.,* 2018). While lots of research has focused on the influence of cultural factors or the aspirations of student entrepreneurs, we sought to fill a critical gap by introducing a novel, universally applicable

model for assessing entrepreneurial potential. By developing the student entrepreneurial potential scale, this study provides a new tool that higher education institutions can employ to evaluate and understand entrepreneurial tendencies among their diverse student populations. The dual objective of this research is not only to propose this innovative assessment tool but also to analyze the findings derived from a large, representative sample of university students.

We conducted the research at the University of Information Technology and Management (UITM) in, Poland, using data from 1 554 students, representing 30% of the university's population. The sample was robust and covered a wide range of demographics and academic disciplines to ensure representativeness. The study delved into four core dimensions of entrepreneurial potential: creativity, motivation, locus of control, and risk-taking (Schmitt-Rodermund, 2004). We carefully chose these dimensions to provide a comprehensive understanding of the attributes that drive entrepreneurial behaviour among students. Furthermore, the analysis emphasizes the impact of transformative life experiences – such as moving to a different country or continent for education – on enhancing entrepreneurial potential. This finding adds a unique cultural and experiential perspective to the existing body of knowledge.

The central thesis of this research highlights the complexity of entrepreneurial potential, emphasizing that it is shaped by a confluence of psychological traits, educational experiences, and socio-cultural factors. We meticulously analyzed demographic characteristics such as age, gender, employment status, field of study, mode of study, and country of origin to paint a detailed picture of students who exhibit high entrepreneurial potential. According to the study, these students are typically 19-21 years old, enrolled in full-time, English-language undergraduate programs such as programming, and often come from culturally diverse regions, notably Kazakhstan, China, or India. The results underscore the need for universities to consider both the diversity and specific entrepreneurial traits of their student body when designing education programs. This study contributes to the literature not only due to the size and diversity of the sample but also because of its comprehensive approach, which integrates internal and external factors affecting entrepreneurial potential. The research builds on existing studies by Liñán and Chen (2009), Thornton *et al.* (2011), and Hayton *et al.* (2002) but extends their findings by offering a multidimensional model that emphasizes both individual traits and broader socio-cultural influences. This holistic perspective is crucial for understanding how universities can foster entrepreneurial mindsets across a global student population.

Moreover, the insights from this research have practical implications for higher education institutions worldwide. By leveraging the student entrepreneurial potential scale, universities can identify and nurture entrepreneurial talent more effectively. Understanding students' entrepreneurial characteristics enables the development of personalized, culturally responsive education programs that support entrepreneurial growth. These programs can be tailored to address the unique needs of both local and international students, fostering a supportive environment that enhances entrepreneurial skills and attitudes. Moreover, the research sheds light on the importance of integrating cultural awareness into educational strategies, which is increasingly relevant in today's interconnected academic and professional landscapes (Pittaway & Edwards, 2012; Rideout & Gray, 2013).

The universality and interdisciplinary approach of this study provide a foundation for further research and application. By capturing the entrepreneurial potential across diverse student demographics, the findings offer a valuable resource for educators and policymakers aiming to promote entrepreneurship as a driver of economic and social progress. Thus, this research also contributes to academic literature but also provides actionable insights that can inform the development of strategic initiatives in higher education. By understanding the factors that enhance or inhibit entrepreneurial potential, universities can play a pivotal role in shaping the next generation of innovative leaders (Bae *et al.*, 2014; Shirokova *et al.,* 2016).

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Entrepreneurial potential among young people is a key concept in the entrepreneurship field (Bergmann *et al.*, 2016; Marques & Albuquerque, 2012). Its features encompass multidimensionality, which has a fundamental impact on an individual's ability to identify, pursue and use entrepreneurial oppor-

tunities (Krueger Jr. *et al.*, 2000). This topic, especially in the area of student entrepreneurship, plays a key role in driving economic growth, stimulating innovation and creating new jobs (Liñán & Fayolle, 2015). Therefore, understanding the complexity of entrepreneurial potential among young minds and its components is of fundamental importance to educators, policymakers and practitioners who strive to develop an entrepreneurial mentality and support innovation.

This multidimensionality of entrepreneurial potential highlights various perspectives and components of cultural values and norms. Entrepreneurial skills such as time management, creativity, decision-making, communication and flexibility play a key role in developing and exploiting students' entrepreneurial potential (Kuratko, 2020; Varamäki *et al.,* 2015). To gain a comprehensive understanding of the potential of entrepreneurship among young people (especially students), as well as the outcomes of entrepreneurial endeavours, it is essential to start by exploring different approaches to defining entrepreneurship. This includes examining psychological factors (which focus on internal cognitive and emotional processes), educational aspects (which consider the role of academic training and learning experiences), environmental influences (which encompass the impact of external conditions and resources), and cultural perspectives (which address how cultural norms and values shape entrepreneurial attitudes and behaviours) (Pittaway & Cope, 2007; Isenberg, 2010; Hofstede *et al.*, 2004).

The psychological approach provides a basis for understanding entrepreneurial potential by highlighting traits, cognitive processes, and motivations that shape entrepreneurial behaviour. Researchers like Baron (2006), DeNisi (2015), and Brandstätter (2011) indicate that creativity, risk-taking, and having an internal locus of control are key traits of successful entrepreneurs. These individuals are willing to take calculated risks, think creatively, and have confidence in their ability to impact outcomes. Rauch and Hulsink (2017) add that traits like openness to experience and resilience are also important, emphasizing how personality and motivation work together to influence entrepreneurial actions.

Emotional intelligence is another important factor in the psychological approach. According to Baron and Tang (2011), being able to understand and manage emotions helps people develop and sustain their entrepreneurial potential. Furthermore, passion drives people to stay committed and push through challenges. Zhao and Seibert (2006) suggest that both emotional and cognitive processes are important, as they shape how entrepreneurs think and act beyond just specific skills or interests.

Entrepreneurial intentions (*i.e.*, the plans and goals to start a business) are also crucial. These intentions can turn into real actions, known as entrepreneurial behaviour, but this process depends on confidence and support from the environment (Belchior & Lyons, 2021; Salmony & Kanbach, 2022). The Theory of Planned Behavior (TPB), as explained by Feola *et al.* (2019), shows how attitudes, norms, and perceived control influence intentions. However, as Shi *et al.* (2020) note, self-efficacy and supportive conditions are necessary for these intentions to lead to action. Lihua (2022) highlights that confidence, or self-efficacy, is key to making sure intentions turn into behaviour.

Batz Liñeiro *et al.* (2024) show that motivations, whether based on opportunities or necessity, affect how one realizes entrepreneurial potential. Opportunity-driven entrepreneurs are generally more proactive and likely to succeed.

Overall, the psychological approach to understanding entrepreneurial potential focuses on traits, emotions, and thought processes that influence how people act. It also highlights the importance of self-confidence and supportive environments in helping people turn their entrepreneurial plans into reality. This perspective shows that both personal traits and external support are key to developing entrepreneurial potential in young people.

Another approach to entrepreneurial potential is based on the educational aspect. Entrepreneurship theories in this area focus on the impact and role of learning environments, curricula, their design, and pedagogical strategies. An important element in understanding the educational approach to entrepreneurial potential is its holistic nature. This approach aims not only to provide theoretical knowledge about business or economic activity but also to enhance individuals' practical skills. When applied, these skills combine behaviours, competencies, and motivations that significantly influence the ability to start one's own business (Rasmussen & Sørheim, 2006). We may see this also in the research by Fayolle and Gailly (2008) and Pittaway and Cope (2007), who assume that

there is a relationship between well-selected and appropriately designed teaching programs and an individual's ability to undertake entrepreneurial activities.

According to Galloway *et al.* (2006), experiential learning, mentoring, interdisciplinary courses, or training are some of the best solutions for cultivating an entrepreneurial mind and entrepreneurial mentality. Research shows that this approach to learning, where the emphasis is on social networks and practice, provides young people with greater support while increasing their chances for entrepreneurial success. We may see similar results in the work of Henry *et al.* (2005), which explores whether entrepreneurship can effectively be taught by engaging students in practical business experiences. Similarly, Solomon *et al.* (2002) highlight the role of the educational environment in promoting creativity and entrepreneurship through hands-on learning opportunities such as case studies, business simulations, and apprenticeships. Bygrave and Zacharakis (2014) further advocate for integrating modern educational tools like e-learning platforms and virtual simulations to enhance the effectiveness of educational planning processes.

The above-mentioned educational methods and tools aim to develop an educational approach to the potential of entrepreneurship by encouraging students to think independently, search for solutions, think creatively and critically, and make decisions in conditions of uncertainty. This is extremely important because contemporary entrepreneurial education must also consider dynamic changes in the business environment and innovations, such as new technologies. These theories regarding adapting to changes and facing adversities are confirmed in Valencia-Arias *et al.* (2022). Their research underscores the importance of integrating training within the educational process, particularly in essential skills like problem-solving and interpersonal communication. This educational approach to entrepreneurial potential extends beyond knowledge transmission to encompass the cultivation of skills, attitudes, and motivation essential for effective navigation in contemporary business environments. It involves diverse activities aimed at fostering an entrepreneurial mindset, equipping students to tackle future challenges and seize business opportunities.

The penultimate area considered in the context of the approach to entrepreneurial potential is the environment. When describing the environmental approach to entrepreneurial potential, we must define the environment itself. It concerns more than family and education. According to Edewor *et al.* (2014), we should also consider it through structural, social, cultural, and economic factors. According to the above, the first component of the environmental approach to entrepreneurial potential is structural factors. Among them, the availability of technological infrastructure, and in more recent studies also, ecological infrastructure, as well as a network of suppliers and business factors, are important for the development of student entrepreneurship. The analysis of economic components shows primarily the importance of financial support. A very important element of the development of entrepreneurship among young people is a flexible approach to credit conditions, microfinance, support throughout the entire financing process and, above all, appropriate availability (Henry *et al.,* 2005).

Research indicates that the environment influences critical factors that shape entrepreneurial ventures (Taormina & Lao, 2007). External stimuli and resources, and therefore, favourable conditions, highly stimulate entrepreneurial behaviour, especially in terms of executive activities. Due to young age, the closest environment that shapes young people is educational environments and family. A study conducted by Carr and Sequeira (2007) shows that growing up in an entrepreneurial family significantly influences the behaviour of individuals and develops their entrepreneurial potential. This happens by generating a supportive environment. To sum up, the literature suggests that the family plays a key role in shaping students' entrepreneurial potential through role models, emotional support and cultural norms (Osorio *et al*., 2017; Farrukh *et al*., 2017).

The last element of the environment shaping entrepreneurial potentialise social factors. They play a crucial role in influencing entrepreneurial potential, especially through the support offered by social capital. It is important to recognize that conducive social environments are essential for fostering entrepreneurship among young people.

Social factors, mentioned as the final key element in the environmental approach to entrepreneurial potential, are an integral part of cultural stimuli. This is because cultural factors significantly influence entrepreneurial aspirations and behaviours (Autio *et al.*, 2001; Urbano *et al.*, 2011; Singh *et al.*,

2017). Particularly in aspects such as social support, social and cultural contexts, these elements have a crucial impact on actively undertaking entrepreneurial actions and are reflected in entrepreneurial behaviours such as risk-taking and openness to innovation (Liñán & Fayolle, 2015; Guerrero & Urbano, 2018). However, social norms and cultural values can also negatively affect the development of entrepreneurial potential among young people. They may not only promote but also inhibit entrepreneurship development by influencing the social acceptance of such activities and shaping expectations regarding success and social status (Thornton *et al.*, 2011). For instance, in regions where entrepreneurship, especially the inclination towards risk-taking and innovation, is not socially accepted or positively perceived, entrepreneurial potential, behaviours, and active efforts towards its development may be constrained (Guerrero & Urbano, 2018; Morris *et al.*, 2017; Stephan & Uhlaner, 2010).

The basic distinctions between the promotion and inhibition of entrepreneurship in relation to cultural factors are the two main patterns according to which individuals identify with the social environment: individualism and collectivism (Liñán *et al.*, 2016). In an individualistic culture, the emphasis is on the individual, his or her independence, and self-control. People in such cultures are proud of their achievements and motivated by their own interests and the pursuit of personal goals. Hofstede (1980) defines individualism as emotional independence from 'groups, organizations, or other collectivities.' In such societies, people often perceive entrepreneurship as a path to personal development and achieving financial independence (Arenius & Minniti, 2015). They may also treat it as a path to success and social prestige. Young people growing up in such an environment are much more open to choosing such a career. However, societies with collectivistic tendencies, where the value of community and cooperation are emphasized, may manifest a more conservative approach to entrepreneurship (Liñán & Fayolle, 2015). In such cultures, individuals may prefer the stability and security of employment within the company over the risks associated with running their own business. Collectivism is characterized by strong bonds in groups that protect them throughout their lives in exchange for unconditional loyalty. Such societies avoid and prefer known solutions that serve the masses. Entrepreneurship in such an environment may signal risk and uncertainty (Hofstede, 1980; Morris, 2019). Young people in such environmental conditions may be less willing to take risks related to entrepreneurial initiatives.

Consequently, the cultural approach may have a significant impact on the development of students' entrepreneurial potential. This is because one must consider all four (psychological, educational, environmental, and socio-cultural) of the aforementioned approaches, which ascertain the potential of entrepreneurship and their intertwined interplay. Moreover, scholars should consider educational migrations a phenomenon as they not only generate interpersonal or intercultural interactions but also, when viewed individually, influence new experiences and challenges (Autio *et al.*, 2013). Studying outside the home country can influence a young person's entrepreneurial potential as a result of being exposed to a new reality, a different language and culture (Lackéus, 2020). These factors determine the main approaches to entrepreneurial potential (Zvarikova & Kacerauskas, 2017; Mueller & Thomas, 2001). Thanks to the influence of these factors, and especially the ensuing environmental change, young people are exposed to cultural and economic diversity, which directly promotes the growth of competences such as creativity, adaptability, stress resistance and decision-making flexibility, as well as the ability to take risks and innovate. Here, the influence of the educational approach is also extremely important because international exchanges, participation in programs, internships and other forms of educational activities create real opportunities to acquire potential business partners who can be a key link in the use of entrepreneurial potential (Rialp *et al.*, 2005). Research has also confirmed that entrepreneurial potential can be developed through various educational and professional experiences (Shane & Venkataraman, 2000).

Therefore, we may hypothesize that the impact of psychological, environmental, social, and cultural factors on university students' entrepreneurial potential varies based on demographic and cultural contexts. Considering the above, we formulated two research hypotheses:

H1: Demographic factors influence students' entrepreneurial potential.

H2: Cultural factors influence students' entrepreneurial potential.

This study includes both local and international students who experience the same academic programs, teaching methods, and living conditions within a shared social, cultural, and economic environment. However, these influences might be less pronounced compared to the stronger effect these factors would have if the students were immersed in their home countries and native environments.

The literature recognizes entrepreneurial potential as a dynamic concept primarily shaped by external influences and specific situations (Hunter, 2013; Bruyat & Julien, 2001). To address this, the present research extends beyond traditional studies of student entrepreneurship by utilizing a comprehensive framework that assesses entrepreneurial potential through four key sub-dimensions: creativity, motivation, locus of control, and risk-taking. This innovative and expansive method significantly contributes to the field by offering a universally applicable assessment model, which universities can adopt globally. By implementing this methodology, we aimed to evaluate the extent to which the identified factors affect the entrepreneurial potential of both local and international students, as discussed in the literature review.

RESEARCH METHODOLOGY

Sample

We collected the data through an online survey administered to 1 864 students from the University of Information Technology and Management in Rzeszów, Poland. After excluding 305 questionnaires that did not meet the expected criteria or contained incomplete responses, we conducted the final analysis on 1 554 valid questionnaires. The survey utilized an original questionnaire developed by the research team in collaboration with economists, a sociologist, and a psychologist. The research encompassed 21 fields of study, both in Polish and English, including bachelor's and master's programs, as well as full-time and part-time students. We employed G-Power software, a widely used tool for determining sample size to ensure sufficient statistical power, to calculate an adequate sample size for detecting medium-sized effects across an average of five groups (Kang, 2021). Based on the G-Power results, we deemed a sample size of 305 individuals sufficient. However, to enhance the sample representativeness, we ensured that the study included at least 20% of students from each field, ultimately covering approximately 30% of the total student population at UITM. Table 1 presents the key characteristics of the research sample.

Study Design

We applied a cross-sectional online to gather insights into the perspectives of students enrolled at the University of Information Technology and Management in Rzeszów, Poland. We aimed to assess various aspects of students' entrepreneurial potential and verify their interest in starting a business (including assistance in this regard from the university) in various fields of study, including both bachelor's and master's studies, as well as full-time and part-time studies. We selected a representative sample from UITM, including students from 21 fields of study offered at the university, covering both Polish and English language programs. Furthermore, we made efforts to maintain the proportionality of students from each field, with a minimum representation of 20% per field. We used our own original survey questionnaire. The questionnaire form included demographic information and 28 five-class Likert items measuring student entrepreneurial potential, and a section with multiple-choice statements about forms of business support expected by students. We selected a large and representative sample size of 1 554 students. We completed the study without any conflicts of interest. We considered ethical principles while doing the research and writing the article.

Before the surveys, to comply with ethical guidelines and to protect participants' confidentiality and privacy, we reviewed Order No. 61/2023, issued by the Rector of the University of Information Technology and Management in Rzeszów on June 29, 2023, on changes to the regulations of the Committee for Ethics of Scientific Research. We adapted the study concept and the conduct method to the guidelines of the above Order. Based on the analysis of the cited legal act, we determined that neither the subject of the research nor the participants covered by it require additional, formal consent from the Committee to conduct it.

Table 1. Demographic characteristics of participants

Demographic Characteristics		*f*	*%*
Age	16-18	156	10.0%
	19-21	627	40.2%
	22-24	486	31.2%
	25-30	180	11.5%
	31-40	91	5.8%
	>41	19	1.2%
Employment status	Full-time employee	431	27.6%
	Part-time employee	239	15.3%
	Unemployed	450	28.9%
	Freelancer	82	5.3%
	Self-employed	86	5.5%
	Trainee/apprentice	96	6.2%
	Economically inactive	175	11.2%
Mode of study	Stationary	903	57.9%
	Non-stationary	656	42.1%
Track of study	English	252	16.2%
	Polish	1307	83.8%
Country of origin	Poland	1149	73.7%
	Ukraine	223	14.3%
	Kazakhstan	53	3.4%
	China	3	0.2%
	India	7	0.4%
	Belarus	19	1.2%
	Other[a]	105	6.7%
Level of study	Bachelor	1319	84.6%
	Master	240	15.4%

Note. [a] Kazakhstan, China, India, Belarus and Other (Spain, Türkiye, Slovenia, and African countries like Zimbabwe)
Source: own study.

Data Analysis

We analysed quantitative data collected through the survey using a variety of statistical techniques. We calculated the descriptive statistics, including measures of central tendency (*e.g.,* mean) and variability (*e.g.,* standard deviation), to summarize the basic characteristics of the research sample and key survey variables. We performed an independent sample t-test to examine differences between two groups on continuous variables, such as comparing the mean scores of full-time and part-time students on entrepreneurial potential. We utilized analysis of variance (ANOVA) to assess differences among multiple groups on continuous variables. We performed exploratory factor analysis (EFA) to explore the underlying factor structure of the survey instrument and identify latent constructs representing different dimensions of the students' perceptions. We also applied confirmatory factor analysis (CFA) to confirm the factor structure identified through EFA and evaluate the goodness-of-fit of the proposed model to the observed data. Finally, we used Cronbach's alpha coefficients to check for the reliability of the scale. We accepted the significance level as 5% (p: 0.05) during the hypothesis testing, we used IBM SPSS 28™ and Lisrel 8.5™.

Research Strategy and Scale Development Process

Because the scale used in this research is grounded in Caird's (1991) study, we deemed unnecessary a pilot study to evaluate the conceptual validity (Hair, 2009). The scale's prior validation in similar contexts provided sufficient confidence in its appropriateness for the current study. However, the reliability and validity tests used to perform the scale showed that the compatibility of the existing factor

structure with the sample was not satisfactory. To solve this problem, we adopted the strategy of conducting an exploratory method using the existing item pool. Firstly, the data underwent a cleaning process to identify missing values and outliers to ensure they met the assumptions of factor analysis. Secondly, we conducted principal component analysis-based EFA to identify factors with retention decisions based on eigenvalues, scree plot, and interpretability. We analysed factor loadings, communalities, and correlations with rotation methods and evaluated them for clearer interpretation. In the third step, we developed a hypothesized model based on EFA results and theory and tested its fit with CFA. We assessed the model fit using indices. We also made modifications based on these indices and theoretical considerations. We then reassessed reliability and validity. Table 2 presents EFA results.

Table 2. Items descriptive statistics and reliability test results of factor structure with factor loads

Variable	Mean	SD	Corrected item-total correlation	Cronbach's alpha if item was deleted	Factor loads of EFAs rotated component Matrix
Dimension I Reliability: 0.873					
a6	4.34	0.765	0.566	0.863	0.694
a7	4.09	0.864	0.501	0.868	0.676
a10	3.98	0.806	0.552	0.864	0.673
a13	4.22	0.762	0.532	0.865	0.647
a14	4.11	0.840	0.580	0.862	0.632
a18	4.15	0.818	0.642	0.858	0.628
a19	4.21	0.738	0.640	0.859	0.597
a20	4.17	0.859	0.618	0.859	0.555
a21	3.79	0.908	0.481	0.869	0.542
a22	4.37	0.769	0.639	0.858	0.513
a25	3.85	0.943	0.622	0.859	0.512
Dimension II Reliability: 0.807					
a1	3.55	1.046	0.631	0.757	0.788
a2	3.50	1.012	0.566	0.785	0.781
a16	3.45	1.323	0.666	0.739	0.711
a17	3.26	1.250	0.651	0.744	0.670
Dimension III Reliability: 0.744					
a3	3.89	1.014	0.528	0.691	0.703
a4	3.80	0.996	0.531	0.689	0.652
a11	3.70	0.914	0.561	0.674	0.609
a12	3.92	0.946	0.533	0.688	0.605
Dimension IV Reliability: 0.559					
a8	2.40	1.237	0.297	0.578	0.671
a15	3.10	1.058	0.423	0.511	0.626
a23	3.70	1.146	0.294	0.577	0.612
a26	3.13	1.222	0.380	0.531	0.580
a28	2.96	1.040	0.397	0.525	0.572
Total reliability (Cronbach's alpha) = 0.824					
Excluded items = a5, a9, a24, a27					
Rotation method = Varimax with Kaiser Normalization.					
Extraction method = Principal Component Analysis. **Kaiser-Meyer-Olkin measure of sampling adequacy =** 0.918 **Approximately Chi-square ($\chi_{(276)}^2$)of Bartlett's test of sphericity =** 12.640.67 (p<.001). **Total variance explained of 4 factors =** 50.39%					

Source: own study.

The results indicate that there was a 4-dimension factor structure that can explain our scale. According to Table 2, the variance explanation ratio for the four factors was 50.15%. Moreover, the Kaiser-Meyer-Olkin measure of sampling adequacy points that our sample size was sufficient, and

Bartlett test of sphericity indicated that the observed correlations were significantly different (χ^2 = 12.640, df = 67, p < 0.05).

According to the results, we can claim that the 1st, 2nd, and 3rd dimensions had high reliability, and the 4th dimension had sufficient reliability. The factor loadings, all but 2 factor loadings (a8: 0.297 and a23: 0.294) were above 0.3. As these two items were very close to 0.3 and their removal from the scale had a limited effect on the reliability of the 4th dimension, we decided to keep them in the scale, considering Hair's suggestions (Hair, 2009) and remove a5, a9, a24, a27 items as they did not provide sufficient factor loadings from the scale.

As a result of the reliability and exploratory analyses, we decided that the four-factor structure was appropriate for our scale. Thus, we applied a CFA to test the validity of the new scale structure. Below, we share the results (Table 3).

Table 3. CFA fit indices results

Criteria	Fit Indices	Good Values	Acceptable Values
RMSEA	0.053	0 ≤ RMSEA ≤ 0.05	0.05 ≤ RMSEA ≤ 0.08
χ2/df	2.16	0≤ χ2/sd≤2	0≤ χ2/sd≤3
SRMR	0.049	0 ≤ SRMR ≤ 0.05	0.05 ≤ SRMR ≤ 0.10
NFI	0.95	0.95 ≤ NFI ≤ 1.00	0.90 ≤ NFI ≤ 0.95
GFI	0.90	0.95 ≤ GFI ≤ 1.00	0.90 ≤ GFI ≤ 95
AGFI	0.88	0.90 ≤ AGFI ≤ 1.00	0.85 ≤ AGFI ≤ 0.90
PGFI	0.74	0.95 ≤ PGFI ≤ 1.00	0.50 ≤ PNFI ≤ 0.95
CFI	0.97	0.95 ≤ CFI ≤ 1.00	0.90 ≤ NFI ≤ 0.95
RFI	0.94	0.95 ≤ RFI ≤ 1.00	0.90 ≤ RFI ≤ 0.95
df=246, χ2 =531.76, 90 Percent Confidence Interval for RMSEA (0.047:0.059) N=1.559			

Note: **RMSE:** Root mean squared errors, **GFI:** goodness of fit index, **NFI:** Normed fit index, **CFI:** Comparative fit index, **SRMR:** Standardized root mean errors, **PCFI:** Parsimony goodness of fit index, **RFI:** Relative fit index

Source: own study.

According to Table 3, fit indices for factor structure were good and acceptable values (Schumacker & Lomax, 2004). Figure 1 presents a PATH diagram of CFA.

As illustrated in Figure 1, no factor load was less than 0.3. These findings demonstrate that the revised factor structure met the reliability and validity requirements. Creativity is necessary for entrepreneurs because entrepreneurship requires innovation. Creativity is considered one dimension of an 'enterprising mindset' that includes improving creativity, innovativeness, ability to see and determine opportunities, and putting ideas into practice. When an entrepreneur enters a market, they use creativity to create an image for the business, create a customer portfolio, manage resources effectively, produce innovative goods and/or services or innovatively produce them, and earn a sufficient market share (Holienka *et al.*, 2015). Creative people are typically 'imaginative, innovative, curious, and versatile' (Caird, 1991). In today's competitive business world, these qualities are deemed necessary to start a business since every entrepreneur is flexible and innovative in thinking while generating many good quality ideas.

Locus of control is another dimension of entrepreneurial potential. Locus of control is a tool for understanding human behaviour. Galvin *et al.* (2018) describe the locus of control as 'the degree to which individuals perceive they control events and outcomes in their lives and how those beliefs shape affect, cognition, and behaviour' (Galvin *et al.*, 2018). When individuals feel that they make things happen, their behaviours and traits affect results then they have an internal locus of control, whereas when they attribute events to external factors, they have an external locus of control (Galvin *et al.*, 2018). Individuals with an internal locus of control are believed to have more entrepreneurial characteristics such as 'insight, initiative, achievement, assertion, independence, effectiveness, sociability or intellectual efficiency' (Caird, 1990).

Risk-taking is an important feature of entrepreneurs. In most cases, no gain or less gain than expected may be made without taking any risks. However, this behaviour can depend on a particular situation that is possibly rewarding (Holienka *et al.*, 2015). Risk-taking is 'the ability to deal with incomplete information and act on a risky option that requires skill to analyse challenging but realistic goals'

(Caird, 1991). Risk-taking, also expressed as the propensity to take risks, is a characteristic that requires control and calculation. Too much risk can be harmful to individuals' lives and careers. On the other hand, starting a business involves a certain degree of risk.

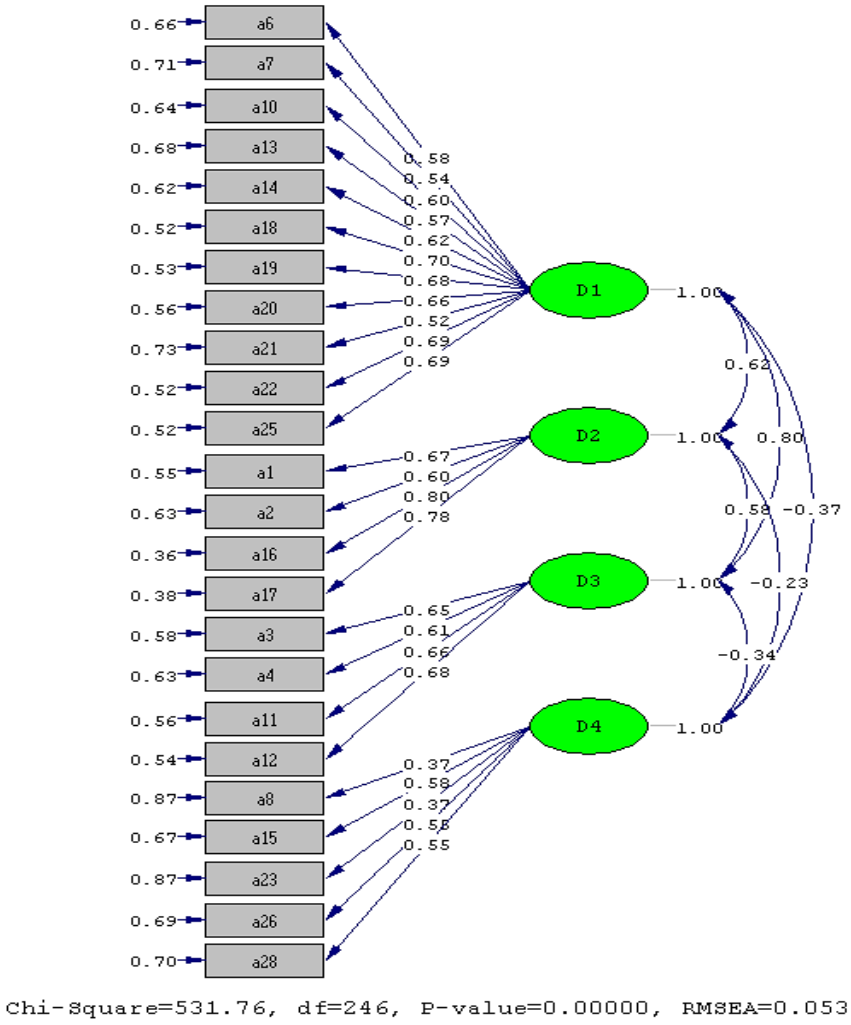

Figure 1. PATH diagram of CFA
Source: own elaboration.

We built these four dimensions of student entrepreneurship on different groups of questions. We developed them from the questions' averages. On top of these four dimensions, we derived from data a fifth-dimensional entrepreneurial potential (also the scale name), which is the 'upper dimension.' We developed this scale from the mean of all the questions of the survey. It includes all four dimensions. We assumed that the students with high entrepreneurial potential displayed creativity, motivation, locus of control, and risk-taking.

RESULTS AND DISCUSSION

Table 4 presents the descriptive statistics, including the mean and standard deviation, for the factors obtained in the previous section. Moreover, it includes the skewness and kurtosis values for convergence to a normal distribution.

According to the descriptive statistics table, the skewness and kurtosis values of the dimensions were in the ±1 range. In this case, it was appropriate to perform parametric tests under the assumption that the data converge to normal distribution. Noteworthy, we excluded the fifth survey from the analysis due to the presence of outliers, resulting in a new sample size of 1554.

Table 4. Descriptive Statistics

Dimensions	Minimum	Maximum	Mean	Std. D.	Kurtosis	Skewness
Creativity	20.00	55.00	45.398	5.730	-0.594	0.502
Motivation	4.00	20.00	13.796	3.678	-0.319	-0.522
Locus of control	4.00	20.00	15.338	2.854	-0.718	0.660
Risk-taking	19.00	35.00	27.207	2.935	0.008	-0.072
Entrepreneurial potential	**52.00**	**120.00**	**89.842**	**9.931**	**-0.183**	**0.452**

Note: N:1554 (5 surveys was excluded after outlier analysis).
Source: own study.

Table 5. Experiences of participants related to business activity

Characteristics		n	%
Do you run a business, or are you a shareholder in a company?	Yes	195	12.5%
	No	1364	87.5%
Do you plan to start a business while studying at UITM?	Definitely disagree	287	21.0%
	Rather disagree	400	29.3%
	Neither agree or disagree	428	31.4%
	Rather agree	178	13.0%
	Definitely agree	71	5.2%
Have you ever used UITMs support in setting up and running a business?	Yes	53	3.4%
	No	1506	96.6%

Source: own study.

Table 5 provides data on respondents' business-related activities and intentions. Regarding current business involvement, 12.5% of respondents indicated they either ran a business or held shares in a company, while the majority (87.5%) did not. When asked about plans to start a business while studying at UITM, responses varied 21.0% definitely disagreed, 29.3% rather disagreed, 31.4% neither agreed nor disagreed, 13.0% rather agreed, and 5.2% definitely agreed. In terms of utilizing UITM's support for business setup and operation, only a small fraction (3.4%) of respondents reported having used UITM's support, while the majority (96.6%) had not.

In the literature on entrepreneurial potential, there is a widely accepted assumption that both personality (including psychological) and environmental factors affect entrepreneurial potential (Galloway & Kelly, 2009). Cultural factors play a key role here. The results of the study indicate that a small portion of respondents participated in entrepreneurial activities and intended to start a business during their university education. Table 14 (See in the Appendix) provides insights into respondents' utilization and perception of support offered by UITM for setting up businesses by students. According to Table 14, only a small percentage of respondents utilized UITM's support services, with most indicating they did not use the support offered by the university. Respondents most commonly utilized 'support in preparing a business plan' (1.2%). A similarly low percentage of respondents (between 2.1% and 3.1%) utilized other services, such as financial and accounting support, legal support, participation in thematic training courses for entrepreneurs, support in obtaining external funding, and support in developing product and marketing strategies. On the other hand, the primary reason for not using UITM's support was a lack of awareness about the availability of such support (60.8%). The survey results showed that an important portion (60.8%) of the respondents had no awareness of the support for setting up a business offered by the university. This fact partially shows that we did not use the right channels to reach students. Despite not utilizing UITM's support previously, a significant portion of respondents expressed interest in taking advantage of start-up and business assistance offered by UITM again (40.9%). Respondents expressed varying expectations from UITM's support services, including assistance in preparing business plans, financial and accounting advice, legal advice, direct financial support, participation in thematic training courses, support in business model development,

assistance in choosing organizational and legal forms of business activity, assistance in business registration procedures, assistance in obtaining funds, and the opportunity to consult business ideas with practitioners. Reasons for not planning to use UITM's support services included not finding the university's support offer attractive (13.0%), needing financial support not available from the university (9.9%), preferring to keep business ideas confidential (9.2%), reluctance to have obligations toward the university (20.4%), having more confidence in external experts (4.5%), having had negative experiences with university support applications (1.9%), dissatisfaction with the university's support meeting expectations (0.6%), and finding better-suited services from other market players (4.1%). According to Galloway and Kelly (2009), before giving entrepreneurial support to students and, therefore, revealing and developing their entrepreneurial potential, it is necessary to understand the reasons for their participation in entrepreneurship education. Then, it will be possible to increase students' entrepreneurial potential and support them as an institution. While defining a structure of entrepreneurial potential, Galloway and Kelly (2009) mentioned that the 'most entrepreneurial' end of the spectrum contains practical interest, then goes with interest as a potential, broad interest in enterprise and associated skills, and no choice. The spectrum ends with the 'least entrepreneurial.' Entrepreneurship support aims to take the students who are not in the most entrepreneurial end to the most entrepreneurial end. Lu *et al.* (2021) also found that students are reluctant to receive entrepreneurship support from their universities. The authors suggest that this reluctance is due to additional entrepreneurial support, lack of student control over the content of the support, the university considering students as a homogeneous group in terms of entrepreneurship, and very high expectations of students regarding entrepreneurship support. In his cross-country comparative analysis, Trivedi (2016) found that the willingness of students to receive entrepreneurship support at universities is not directly related to individualism-collectivism cultural aspects. Thus, mostly individual and institutional factors affect students' willingness to receive support from their universities. From the institution's perspective, the institution should offer personalized entrepreneurship support, not considering every student the same, *i.e.*, developing a personalized approach and students' feedback should constitute part of the consideration. By doing the right things, universities can raise students' entrepreneurship motivation and develop and reveal their entrepreneurial potential. Individually, students' interest and entrepreneurial potential, namely creativity, locus of control, motivation, and risk-taking play role significant role in shaping their intention to receive entrepreneurship support.

Table 6 shows the results of an independent t-test examining the impact of changing cultural factors on business motivation based on gender.

Table 6. Group statistics and t-test results for gender

Dimension	Gender	N	Mean	Std. Deviation	Test stat.	Sig.
Creativity	Female	766	45.219	5.635	-1.210	0.226
	Male	788	45.571	5.820		
Motivation	Female	766	13.910	3.485	1.206	0.228
	Male	788	13.685	3.855		
Locus of control	Female	766	15.087	2.858	-3.430	0.001*
	Male	788	15.582	2.831		
Risk-taking	Female	766	27.218	2.850	0.152	0.880
	Male	788	27.195	3.017		
Entrepreneurial potential	Female	766	89.510	9.668	-1.297	0.195
	Male	788	90.164	10.176		

Source: own study.

Based on the significance values in Table 6, it appears that there is no statistically significant difference between the entrepreneurial potential levels of men and women, with a 95% confidence level ($t_{(1552)}$:-1.297; $p>0.05$). The results of the test in terms of sub-dimensions prove that only the locus of control sub-dimension shows a statistically significant difference between men and women ($t_{(1552)}$:-3.430; $p<0.05$). The findings confirm the results of some other researchers. According to

Veličković *et al.* (2022), there is no statistically significant difference between female and male students who want to start a business. However, women generally want to wait for a longer time to start their business and realize their aspirations. Galloway *et al.* (2006) also indicate that female business owners have perception bias such that they are less likely to consider themselves entrepreneurs than male business owners. A higher locus of control may explain differences between students (women and men) planning to start a business. To make it clear, we may observe the locus of control difference between genders in the waiting behaviour of women to start a business and their perception bias. Similarly to this study's findings, Franco *et al.* (2010) and Ward *et al.* (2019) also found no difference between genders in terms of entrepreneurial potential.

ANOVA is a statistical method used to analyse the differences among group means in a sample. It is particularly useful when comparing the means of three or more groups to determine if there are statistically significant differences between them (Hair, 2009). This method enabled testing whether there was a statistically significant difference in the entrepreneurship potentials of students across different age groups who participated in the survey. Table 7 shows the results of ANOVA according to age.

Table 7. Group statistics and ANOVA results for age

Variables / Age		N	Mean	Std. D	F Stat.	Sig
Creativity	16-18	156	45.256	5.626	1.785	0.129
	19-21	625	45.163	5.732		
	22-24	484	45.281	5.681		
	25-30	179	46.000	5.988		
	31-40	110	46.464	5.571		
	Total	1554	45.398	5.730		
Motivation	16-18	156	13.936	3.555	0.755	0.554
	19-21	625	13.686	3.675		
	22-24	484	13.738	3.586		
	25-30	179	14.196	3.909		
	31-40	110	13.827	3.883		
	Total	1554	13.796	3.678		
Locus of control	16-18	156	15.679	2.635	7.303	0.000*
	19-21	625	15.158	2.861		
	22-24	484	15.031	2.866		
	25-30	179	16.056	2.818		
	31-40	110	16.064	2.797		
	Total	1554	15.338	2.854		
Risk-taking	16-18	156	27.615	3.173	4.688	0.001*
	19-21	625	27.342	2.915		
	22-24	484	27.283	2.863		
	25-30	179	26.542	2.817		
	31-40	110	26.600	2.999		
	Total	1554	27.207	2.935		
Entrepreneurial Potential	16-18	156	90.840	9.741	1.275	0.278
	19-21	625	89.477	9.897		
	22-24	484	89.490	9.774		
	25-30	179	90.698	10.389		
	31-40	110	90.655	10.264		
	Total	1554	89.842	9.931		

Note: Age group 41+ has been merged with 31-40 due to fewer than 30 members.
Source: own study.

The ANOVA results indicated that there was no statistically significant difference in the motivation level of age groups with a 95% confidence level ($F_{(4;1549)}$:1.275; p>0.05). No difference among the age groups regarding entrepreneurial potential implies that individuals can become entrepreneurs at every age. Franco *et al.* (2010) also found that there is no statistically significant difference between age

groups and entrepreneurial potential. According to Bolton and Thompson (2004), 'While entrepreneurship is possible at any age, the true entrepreneur is likely to do it sooner rather than later.' A young person in their 20s can attempt to start a business, but the first attempt or a few attempts may fail. That also can be a factor in raising the average age of entrepreneurs. However, this process is valuable as it increases the chances of the person becoming an entrepreneur (Timmons & Spinelli, 2007). According to sub-dimensions locus of control ($F_{(4;1549)}$:7.303; $p<0.05$) and risk-taking ($F_{(4;1549)}$:4.688; $p<0.05$) have shown significant differences through age groups. Llewellyn (2003) found that a high locus of control is a common personality trait of entrepreneurs. Rauch and Frese (2007) also indicated that high locus of control and risk propensity are the personality traits that an entrepreneur is likely to have. The findings of this study reveal that age groups 25-30 and 31-40 had the highest

Table 8. Group statistics and ANOVA results for employment status

Variables / Employment status		N	Mean	Std. D	F Stat.	Sig
Creativity	Full-time employee	429	45.427	5.793	10.380	<.001
	Part-time employee	238	46.008	5.977		
	Unemployed	449	45.434	5.509		
	Freelancer	82	44.988	6.133		
	Self-employed	86	48.907	4.253		
	Trainee/apprentice	95	44.526	5.323		
	Economically inactive	175	43.343	5.543		
	Total	1554	45.398	5.730		
Motivation	Full-time employee	429	13.650	3.487	29.374	<.001
	Part-time employee	238	14.118	3.700		
	Unemployed	449	13.724	3.476		
	Freelancer	82	14.390	3.562		
	Self-employed	86	17.884	2.177		
	Trainee/apprentice	95	13.232	3.263		
	Economically inactive	175	11.920	3.839		
	Total	1554	13.796	3.678		
Locus of control	Full-time employee	429	15.506	2.818	9.392	<.001
	Part-time employee	238	15.529	2.868		
	Unemployed	449	15.292	2.650		
	Freelancer	82	15.317	2.918		
	Self-employed	86	16.814	2.369		
	Trainee/apprentice	95	15.126	2.643		
	Economically inactive	175	14.189	3.293		
	Total	1554	15.338	2.854		
Risk-taking	Full-time employee	429	27.054	2.919	3.639	0.001*
	Part-time employee	238	27.555	2.881		
	Unemployed	449	27.359	2.943		
	Freelancer	82	26.537	3.206		
	Self-employed	86	26.267	3.647		
	Trainee/apprentice	95	27.074	2.687		
	Economically inactive	175	27.566	2.460		
	Total	1554	27.207	2.935		
Entrepreneurial Potential	Full-time employee	429	89.699	10.047	17.557	<0.001
	Part-time employee	238	91.387	10.285		
	Unemployed	449	89.893	9.399		
	Freelancer	82	89.268	9.749		
	Self-employed	86	97.709	7.305		
	Trainee/apprentice	95	88.000	8.906		
	Economically inactive	175	85.360	9.548		
	Total	1554	89.842	9.931		

Source: own study.

locus of control. However, the two groups had low scores in risk-taking, but the 16-18 group had the highest score. In terms of average entrepreneur age, the results confirmed that people become entrepreneurs in their mid-30s. In terms of entrepreneurial potential, it is possible to indicate that personality traits are more effective in determining it than age groups.

Table 8 presents ANOVA results regarding employment status. Through this analysis, it is possible to assess whether there was a statistically significant difference in the entrepreneurial potentials among students with varying employment statuses.

Table 8 indicates a statistically significant difference in entrepreneurial potential based on employment status ($F_{(6;1547)}$:17.557; $p<0.05$) according to the sub-dimensions. We made the distinction among categories of employment status following Labour Force Survey Statistics Poland. Within that distinction, full-time employees work for 40 hours a week, part-time employees work 20 hours a week, unemployed people are registered at the district labour office and are looking for a job, and economically inactive people do not work or do not look for a job (stat.gov.pl). In addition to these categories, the Careers Service of UITM indicated the need to extend the metrics to include freelancers who work without a full-time job, perform tasks on commission, are self-employed and run their businesses, and trainees/apprentices who are a student doing a paid/unpaid internship or work placement. The findings regarding employment status reveal no surprising picture of the high average entrepreneurial potential score of self-employed people. We observe that self-employed people possess more features of creativity, motivation, and locus of control. However, in risk-taking, self-employed people show no outstanding value. This shows that self-employed people are creative, motivated, and have an internal locus of control that makes them proactive, but when it comes to risks, they take calculated risks and protect themselves from high risks. In their study, Bayraktaroglu and Kutanis (2015) found that the 'propensity to take risk' scores of entrepreneurs are 10% higher than the scores of non-entrepreneurs among MBA students. This finding shows that a big gap may not exist between entrepreneurs and non-entrepreneurs in terms of risk. Koh (1996) indicates that the characteristics that differentiate the entrepreneur from the non-entrepreneur are their entrepreneurial values, attitudes, and needs. However, some research emphasized the need to achieve goals as a feature of an entrepreneur. According to McClelland (1961), this 'achievement motivation' is an entrepreneurial characteristic supported by the findings of this study. Accordingly, the 'motivation' score of self-employed people is the highest among those of all the employment statuses.

Since all the sub-dimensions exhibit statistically significant differences, it is possible to conclude that members of all the groups can have different levels of these four sub-dimensions. This result implies that all employment statuses require separate analyses to elaborate on their true entrepreneurial sets of characteristics.

Table 9 presents the results of the independent sample t-test comparing the entrepreneurial potential of the participants according to the study mode.

Table 9. Group statistics and t-test results for study mode

Dimension	Study Mode	N	Mean	Std. Deviation	Test stat.	Sig.
Creativity	Stationary	901	45.552	5.751	1.244	0.214
	Non-stationary	653	45.185	5.700		
Motivation	Stationary	901	13.848	3.782	0.654	0.513
	Non-stationary	653	13.724	3.530		
Locus of control	Stationary	901	15.471	2.821	2.146	0.032*
	Non-stationary	653	15.156	2.891		
Risk-taking	Stationary	901	27.269	2.929	0.979	0.328
	Non-stationary	653	27.121	2.943		
Entrepreneurial Potential	Stationary	901	90.285	10.052	2.070	0.039*
	Non-stationary	653	89.230	9.738		

Source: own study.

Based on the significance values presented in Table 9, we observed a statistically significant difference between the entrepreneurial potential levels of different study modes, with a 95% confidence

level ($t_{(1552)}$:2.070; p<0.05). The test results indicated that only the locus of control sub-dimension exhibited a statistically significant difference among study modes ($t_{(1552)}$:2.146; p<0.05). These findings revealed that the entrepreneurial potential of students with a stationary study mode was higher than the ones with a non-stationary mode. Furthermore, their locus of control was higher. Staniewski and Szopinski (2015) found that the interest of part-time university students in starting their own business is higher than that of full-time university students. However, they state that the relationships were weak due to the low T-Chuprow coefficient. It is a dependency coefficient used to measure the strength of the relationship between two nominal variables with values in the range [0.1]. The closer the value of the t coefficient is to 1, the stronger the relationship between the examined features. In their study, Safiullin and Akhmetshin (2019) examined entrepreneurial skills development through distance learning. They found that 72% of entrepreneurs were full-time graduates, and 28% were extramural graduates. Moreover, 48% of distance learning students did not feel ready to start a business. All these findings imply that students with stationary mode generally have more entrepreneurial potential, although some students with non-stationary mode may also have it.

Table 10. Group statistics and t-test results for track of study

Dimension	Track of Study	N	Mean	Std. Deviation	Test stat.	Sig.
Creativity	English	252	47.786	5.809	7.350	<0.001
	Polish	1302	44.935	5.601		
Motivation	English	252	15.032	3.993	5.458	<0.001
	Polish	1302	13.557	3.566		
Locus of control	English	252	16.440	2.647	6.793	<0.001
	Polish	1302	15.125	2.844		
Risk-taking	English	252	27.266	3.339	0.315	0.753
	Polish	1302	27.195	2.851		
Entrepreneurial Potential	English	252	94.567	11.122	8.437	<0.001
	Polish	1302	88.927	9.418		

Source: own study.

According to the test results presented in Table 10, there was a statistically significant difference between the entrepreneurial potential levels among different study tracks, with a 95% confidence level ($t_{(1552)}$:8.437; p<0.05). Creativity, motivation, and locus of control sub-dimensions showed statistically significant differences between tracks of study level ($t_{(1552)}$:2.146; p<0.05). Noteworthy, the overwhelming majority of students studying in English were international students, and the overwhelming majority of students studying in Polish were Polish and Ukrainian students. From a cultural point of view, the results of the study regarding the nationalities of the respondents had research implications. According to Hofstede *et al.* (2004), economic factors alone cannot fully explain the tendency towards entrepreneurship. That's why cultural factors require examination. Hofstede (1980) defined the concepts of individualism and collectivism to categorize general cultural tendencies. Societies dominated by individualism often view entrepreneurship as a path to personal development and achieving financial independence (Arenius & Minniti, 2015). Therefore, the citizens of these countries are expected to reveal more entrepreneurship potential. Meanwhile, in societies dominated by collectivism, entrepreneurship is commonly associated with risk and uncertainty (Hofstede, 1980; Morris, 2019). Thus, the citizens of these countries are expected to be distant and hesitant towards entrepreneurship. The study results reveal that students receiving education in English have more entrepreneurial potential than students receiving education in Polish. Students studying in English mostly come from Kazakhstan, China, India, and Belarus. These countries are dominated by collectivism. Among those countries, the individualism score of only Belarus is as high as Poland and Ukraine, while that of other countries is typically collectivist (www.theculturefactor.com). These results imply that individualism level is not a determinant of entrepreneurial potential in this study. Thus, other factors have been influential. Apart from the entrepreneurial potential dimensions, the desire for new experiences and challenges, a new country, a new reality, different environments, and cultural and economic diversity can directly

promote the growth of competencies such as creativity, adaptability, stress resistance, and decision-making flexibility, as well as the ability to take risks and innovate (Guerrero & Urbano, 2018). These factors explain the difference between the entrepreneurial potential of the two groups of students coming from individualist countries and collectivist countries. Students receiving education in English have more entrepreneurial potential due to these factors but not individualism-collectivism cultural factors. Dimensions of entrepreneurial potential also reveal the same result that students receiving education in English have more entrepreneurial potential. The risk-taking dimension alone does not show any statistically significant differences. Just like students receiving education in English, Polish and Ukrainian students also have the risk-taking ability and motivation to start a business. We used ANOVA to test whether there was a statistically significant difference in the entrepreneurial potential of students with differing countries of origin. Table 11 shows ANOVA results according to country of origin.

Table 11. Group statistics and ANOVA results for country of origin

Variables / Countries		N	Mean	Std. D	F Stat.	Sig
Creativity	Poland	1145	44.832	5.648	43.488	<0.001
	Ukraine	222	45.333	5.358		
	Other[a]	187	48.936	5.414		
	Total	1554	45.398	5.730		
Motivation	Poland	1145	13.442	3.567	31.616	<0.001
	Ukraine	222	14.032	3.556		
	Other	187	15.684	3.902		
	Total	1554	13.796	3.678		
Locus of control	Poland	1145	14.994	2.912	38.899	<0.001
	Ukraine	222	15.878	2.397		
	Other	187	16.807	2.406		
	Total	1554	15.338	2.854		
Risk-taking	Poland	1145	27.234	2.854	0.601	0.549
	Ukraine	222	27.009	2.747		
	Other	187	27.273	3.578		
	Total	1554	27.207	2.935		
Entrepreneurial Potential	Poland	1145	88.609	9.618	57.878	<0.001
	Ukraine	222	90.414	8.516		
	Other	187	96.711	10.544		
	Total	1554	89.842	9.931		

[a]Kazakhstan, China, India, Belarus, and others(Spain, Türkiye, Slovenia, and African countries like Zimbabwe)
Source: own study.

According to Table 11, there was a statistically significant difference in entrepreneurial potential across different countries of origin ($F_{(6, 1551)} = 57.878$, $p < 0.05$). Moreover, sub-dimensions creativity, motivation, and locus of control also exhibited statistically significant differences by country of origin ($p < 0.05$). In Table 15, the countries are divided into three categories, namely Poland, Ukraine, and others. This categorization explains the fact that countries belonging to the third group (*i.e.,* Kazakhstan, China, India, Belarus, and others) create a separate category of countries, considered through the prism of business motivation. As stated above, international students are also expected to have more entrepreneurial potential than Polish and Ukrainian students as they leave their comfort zones. We may interpret the results in this category also as the effect of the study category. We may explain it by the desire for new experiences and challenges, a new country, a new reality, different environments, and cultural and economic diversity that can directly promote the growth of competencies such as creativity, adaptability, stress resistance, and decision-making flexibility, as well as the ability to take risks and innovate (Guerrero & Urbano, 2018). The sub-dimension risk-taking again does not reveal any statistically significant difference, and this state confirms the results exhibited in Table 12 regarding the study track. Risk-taking is more of a personality trait, and any student may have it. In this part of the study, we used an independent

sample t-test to investigate the differences in students' entrepreneurship potentials according to their education level. Below, we present the results according to the level of study (Table 12).

Table 12. Group statistics and t-test results for the level of study

Dimension	Level of Study	N	Mean	Std. Deviation	Test stat.	Sig.
Creativity	Bachelor	1316	45.424	5.693	0.426	0.670
	Master	238	45.252	5.942		
Motivation	Bachelor	1316	13.842	3.677	1.158	0.247
	Master	238	13.542	3.677		
Locus of control	Bachelor	1316	15.337	2.853	-0.060	0.952
	Master	238	15.349	2.867		
Risk-taking	Bachelor	1316	27.201	2.910	-0.164	0.870
	Master	238	27.235	3.074		
Entrepreneurial Potential	Bachelor	1316	89.895	9.905	0.499	0.618
	Master	238	89.546	10.091		

Source: own study.

The test results indicated that there was no statistically significant difference between the entrepreneurial potential and sub-dimensions according to the level of study. Findings by Popescu *et al.* (2016) support this finding. They also found that there is no statistically significant difference between the entrepreneurial potential of bachelor's and master's students. They just found that bachelor's students are more inclined to take risks regarding entrepreneurial activities. The researchers mentioned that as students get older and become master's students, their risk propensity falls (Popescu *et al.*, 2016). The finding of no differences between levels of study is consistent with the finding of 'no differences' between age groups. This study reveals that as people mature, their entrepreneurial potential does not increase or decrease. Some students may be very active in their bachelor's education in researching entrepreneurship opportunities due to the excitement brought by their young age. However, as they mature and start their master's program, they continue to do so as they are more aware of entrepreneurship's importance. This relates to the education they have received.

Below, we present ANOVA results comparing the entrepreneurial potentials of the students participating in the survey according to the field of study (Table 13).

Table 13 presents the mean and standard deviation for entrepreneurial potential according to students' field of study. The F-statistic indicates a statistically significant difference in creativity scores among the field of study ($F_{(15.1532)} = 7.247$, $p< 0.05$). On the other hand, the F-statistic shows a statistically significant difference in motivation scores ($F_{(15.1532)} = 10.229$, $p < 0.05$), locus of control ($F_{(15.1532)} = 7.221$, $p < 0.05$), risk-taking ($F_{(15.1532)} = 3.506$, $p < 0.05$), and entrepreneurial potential scores ($F_{(15.1532)} = 9.882$, $p < 0.05$). The highest entrepreneurial potential scores were those for programming, sustainability, and the environment, biomedicine, graphic design, and management students. This finding is consistent with that of Galloway and Kelly (2009). They found that business and science (including IT) students have high entrepreneurial potential. The results of this study exhibit that programming students have the highest motivation and locus of control scores, Holienka *et al.* (2015) support with their findings that applied informatics students have the tendency to invent innovative solutions. On the other hand, biomedicine students' high entrepreneurial potential requires support from serious entrepreneurship education because in the biotechnology industry, a high level of entrepreneurial effort is needed since product approval is scientifically complex, takes a very long time (typically 10 to 15 years), and requires very big budgets (Gunn, 2016). Holienka *et al.* (2015) found that business administration students have the highest entrepreneurship tendency, and psychology, applied informatics, and pedagogy students follow them. Regarding business administration and programming-informatics, the findings of Holienka *et al.* (2015) and those of this study are parallel to each other. Apart from designing a general entrepreneurship education, universities should also determine the fields of study that do not support entrepreneurship and give support to the students of these departments. In that case, department-specific entrepreneurship education will facilitate students' revealing their entrepreneurial potential.

Table 13. Group statistics and ANOVA results for the field of study

Variables / Study fields		N	Mean	Std. D.	F stat	Sig.
Creativity	Biomedicine	64	49.188	4.676	7.247	<0.001
	Computer game design	46	46.000	4.794		
	Computer graphics and multimedia production	61	45.066	5.677		
	Cybersecurity	35	44.029	6.618		
	Digital Marketing	52	46.288	5.214		
	English Philology with Chinese	114	43.447	5.932		
	Graphic design	148	46.324	5.716		
	Logistics	125	44.992	5.063		
	Management	141	45.312	4.914		
	Nursing	248	44.488	5.860		
	Other	61	43.984	7.184		
	Physiotherapy	40	45.600	5.453		
	Programming	57	49.614	4.898		
	Psychology in management	169	44.663	5.469		
	Sustainability and the environment	55	47.745	5.605		
	Sustainable development in the economy	117	45.034	5.770		
	Total	1533	45.397	5.748		
Motivation	Biomedicine	64	14.859	3.919	10.229	<0.001
	Computer game design	46	14.304	3.418		
	Computer graphics and multimedia production	61	13.344	3.405		
	Cybersecurity	35	12.886	3.787		
	Digital Marketing	52	13.615	3.922		
	English Philology with Chinese	114	12.588	3.579		
	Graphic design	148	14.297	3.585		
	Logistics	125	13.048	3.353		
	Management	141	14.475	2.973		
	Nursing	248	12.851	3.737		
	Other	61	13.410	3.422		
	Physiotherapy	40	14.525	3.523		
	Programming	57	16.982	2.918		
	Psychology in management	169	14.740	2.997		
	Sustainability and the environment	55	15.782	4.175		
	Sustainable development in the economy	117	12.385	3.899		
	Total	1533	13.808	3.672		
Locus of con-trol	Biomedicine	64	16.813	2.122	7.221	<0.001
	Computer game design	46	15.261	2.245		
	Computer graphics and multimedia production	61	14.557	2.896		
	Cybersecurity	35	14.571	3.567		
	Digital Marketing	52	16.000	2.842		
	English Philology with Chinese	114	14.439	3.275		
	Graphic design	148	15.919	2.594		
	Logistics	125	14.944	3.033		
	Management	141	15.801	2.343		
	Nursing	248	15.008	3.002		
	Other	61	15.262	2.798		
	Physiotherapy	40	15.075	2.712		
	Programming	57	17.105	2.257		
	Psychology in management	169	14.580	2.878		
	Sustainability and the environment	55	16.800	2.824		
	Sustainable development in the economy	117	15.359	2.332		
	Total	1533	15.344	2.859		

Variables / Study fields		N	Mean	Std. D.	F stat	Sig.
Risk-taking	Biomedicine	64	26.641	3.234	3.506	<0.001
	Computer game design	46	27.130	2.933		
	Computer graphics and multimedia production	61	27.361	2.858		
	Cybersecurity	35	26.514	3.364		
	Digital Marketing	52	25.365	3.260		
	English Philology with Chinese	114	27.658	2.862		
	Graphic design	148	26.595	2.740		
	Logistics	125	27.176	2.600		
	Management	141	27.652	2.691		
	Nursing	248	27.665	3.093		
	Other	61	26.902	2.725		
	Physiotherapy	40	27.350	2.607		
	Programming	57	27.509	3.581		
	Psychology in management	169	27.012	2.502		
	Sustainability and the environment	55	28.109	3.218		
	Sustainable development in the economy	117	27.034	2.874		
	Total	1533	27.196	2.929		
Entrepre-neurial potential	Biomedicine	64	95.516	9.825	9.882	<0.001
	Computer game design	46	90.522	7.577		
	Computer graphics and multimedia production	61	88.656	10.524		
	Cybersecurity	35	86.114	10.981		
	Digital Marketing	52	89.077	9.318		
	English Philology with Chinese	114	86.386	10.342		
	Graphic design	148	91.027	8.785		
	Logistics	125	88.200	9.255		
	Management	141	91.241	8.335		
	Nursing	248	88.310	10.146		
	Other	61	87.787	10.490		
	Physiotherapy	40	90.550	8.884		
	Programming	57	99.070	10.149		
	Psychology in management	169	89.089	8.753		
	Sustainability and the environment	55	96.509	11.860		
	Sustainable development in the economy	117	88.034	8.921		
	Total	1533	89.843	9.951		

Source: own study.

CONCLUSIONS

This study provided an in-depth evaluation of the entrepreneurial potential among students at the University of Information Technology and Management in Rzeszów, Poland, using unique survey tools developed by the Department of Entrepreneurship. The research utilized a comprehensive and culturally diverse sample, encompassing over 30% of the university's students, with representation across all fields of study.

This robust approach ensured that the findings were reflective of the entire student population at UITM. The study's significant contribution lies in the large, diverse sample of 1 554 students and the cultural diversity of UITM, where around one-quarter of the students are international. By incorporating various demographic characteristics such as age, employment status, mode of study, degree level, and country of origin, this research developed a detailed profile of a student with high entrepreneurial potential. Results indicate that this typical student is between 19 and 21 years old, studies programming full-time in English at the undergraduate level, and hails from regions like Kazakhstan, China, or India.

As revealed in this study, psychological, environmental, educational, social, and cultural factors influence entrepreneurship potential. The research model employed four key dimensions, *i.e.,* creativity, motivation, locus of control, and risk-taking, which provided a comprehensive view of entrepre-

neurial potential. The findings suggest that students from outside Poland, particularly those studying in English-language programs, exhibit higher entrepreneurial potential. The experience of relocating to a different country and integrating into a new social and educational environment fosters traits such as creativity, motivation, risk-taking, and an appropriate locus of control, which are crucial for entrepreneurship.

The study also highlighted that entrepreneurial potential varies significantly based on cultural distance. For instance, students from countries geographically and culturally distant from Poland, such as Kazakhstan, China, and India, display higher entrepreneurial potential compared to those from Ukraine, where cultural and situational differences are less pronounced. These findings underline the need for universities to recognize and leverage these variations to cultivate entrepreneurial talent effectively.

From an educational standpoint, understanding the entrepreneurial potential of students is vital for designing impactful curricula and support systems. Higher education institutions (HEIs) can use the developed tool to tailor their entrepreneurial education programs, fostering skills and attitudes that align with their students' entrepreneurial profiles. Despite being limited to one university in Poland, this research lays the groundwork for broader international studies that could involve larger, more geographically dispersed samples and a greater diversity of influencing factors. Future research should aim to extend this analysis to other academic institutions and explore additional demographic variables to further enhance our understanding of student entrepreneurship.

The practical implications of this study are substantial. Higher education institutions can implement routine and voluntary surveys to measure the entrepreneurial potential of students, even beyond the university level to high school and secondary education, thereby designing relevant educational strategies. The study suggests that universities could adopt research-oriented, consulting, or practice-based models of entrepreneurial education tailored to their students' needs (Varblane *et al.,* 2008). Furthermore, HEIs could create comprehensive support systems to measure and nurture entrepreneurial skills, including scholarship programs that incentivize entrepreneurial initiatives.

On the policy front, this research provides valuable insights for educational authorities. Governments and educational institutions could promote entrepreneurship education, ensuring it becomes a standard component across universities. Policymakers might also consider developing training programs tailored to graduates' intended industries, equipping them with the entrepreneurial skills necessary for professional success.

From a managerial perspective, the findings offer opportunities for businesses to incorporate entrepreneurial potential assessments into their hiring practices. Companies could use modified versions of the survey tool to evaluate the entrepreneurial tendencies of prospective employees, thereby fostering a culture of 'entrepreneurship.' Furthermore, organizations could design training programs to identify and nurture entrepreneurial talent within their workforce, driving innovation and growth from within.

In conclusion, this study offers a valuable framework for understanding and measuring student entrepreneurial potential while acknowledging its limitations. Focusing on a single institution limited the generalizability of the findings. Nevertheless, the study confirmed both the first hypothesis that demographic factors influence students' entrepreneurial potential and the second hypothesis that cultural factors influence students' entrepreneurial potential, as results clearly demonstrate that demographic and cultural backgrounds play a significant role in shaping entrepreneurial potential among students. Future research should aim to replicate this study in different cultural and institutional contexts, considering additional demographic variables and employing a more balanced, international sample. Such research would further validate the tool's efficacy and broaden its applicability, contributing to the global discourse on entrepreneurship education.

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Appendix 1:

Table 14. Expectation's entrepreneurship support offered by UITM

Items		n	%
What was the support provided by UITM about? [Support in preparing a business plan]	Yes	18	1.2%
	No	35	2.2%
	NA	1506	96.6%
What was the support provided by UITM about? [Financial and accounting support]	Yes	15	1.0%
	No	38	2.4%
	NA	1506	96.6%
What was the support provided by UITM about? [Legal support]	Yes	20	1.3%
	No	33	2.1%
	NA	1506	96.6%
What was the support provided by UITM about? [Participation in thematic training courses for entrepreneurs]	Yes	15	1.0%
	No	38	2.4%
	NA	1506	96.6%
What was the support provided by UITM about? [Support in obtaining external funding for starting a business]	Yes	15	1.0%
	No	38	2.4%
	NA	1506	96.6%
What was the support provided by UITM about? [Support in developing a product strategy]	Yes	11	0.7%
	No	42	2.7%
	NA	1506	96.6%
What was the support provided by UITM about? [Support in developing a marketing strategy]	Yes	5	0.3%
	No	48	3.1%
	NA	1506	96.6%
If you did not use the support offered by UITM when setting up your business, what was the reason? [I was not aware that such support was available]	Yes	948	60.8%
	No	558	35.8%
	NA	53	3.4%
If you did not use the support offered by UITM when setting up your business, what was the reason? [I had no need for the support offered by the university]	Yes	599	38.4%
	No	907	58.2%
	NA	53	3.4%
If you did not use the support offered by UITM when setting up your business, what was the reason? [I think that the market offers better support than the university]	Yes	50	3.2%
	No	1456	93.4%
	NA	53	3.4%
If you did not use the support offered by UITM when setting up your business, what was the reason? [I did not know who / which units at the university to approach for support]	Yes	255	16.4%
	No	1251	80.2%
	NA	53	3.4%
If you did not use the support offered by UITM when setting up your business, what was the reason? [I did not want the support provided to create future obligations towards the university]	Yes	115	7.4%
	No	1391	89.2%
	NA	53	3.4%
If you did not use the support offered by UITM when setting up your business, what was the reason? [I needed financial support, which I could not get from the university]	Yes	54	3.5%
	No	1452	93.1%
	NA	53	3.4%
Are you interested in taking advantage of the start-up and business assistance offered by UITM again?	Yes	637	40.9%
	No	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Assistance in the preparation of a business plan]	Yes	353	22.6%
	No	284	18.2%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Financial and accounting advice]	Yes	366	23.5%
	No	271	17.4%
	NA	922	59.1%

What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Legal advice]	Yes	349	22.4%
	No	288	18.5%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Direct financial support from UITM]	Yes	217	13.9%
	No	420	26.9%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Participation in thematic training courses]	Yes	255	16.4%
	No	382	24.5%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Support in the development of a business model]	Yes	224	14.4%
	No	413	26.5%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Assistance in choosing the organisational and legal form of business activity]	Yes	204	13.1%
	No	433	27.8%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Assistance in the procedure of registering business activity]	Yes	261	16.7%
	No	376	24.1%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Assistance in obtaining funds for starting business activity]	Yes	276	17.7%
	No	361	23.2%
	NA	922	59.1%
What kind of support do you expect from UITM when setting up a business, taking into account your experience to date with support from the University? [Possibility to consult business ideas with practitioners]	Yes	260	16.7%
	No	377	24.2%
	NA	922	59.1%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [I do not think that the university has an attractive offer of support]	Yes	203	13.0%
	No	719	46.1%
	NA	637	40.9%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [I need financial support, which I will not get at university]	Yes	154	9.9%
	No	768	49.3%
	NA	637	40.9%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [I don’t want too many people to know about my business idea]	Yes	143	9.2%
	No	779	50.0%
	NA	637	40.9%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [I don’t want to have obligations towards the university]	Yes	318	20.4%
	No	604	38.7%
	NA	637	40.9%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [I have more confidence in external experts]	Yes	70	4.5%
	No	852	54.7%
	NA	637	40.9%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [I have had bad experiences with applying for university support]	Yes	30	1.9%
	No	892	57.2%
	NA	637	40.9%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [The support provided by the university has not met my expectations]	Yes	9	0.6%
	No	913	58.6%
	NA	637	40.9%
If you do not plan to use UITMs support when setting up your business, what are the reasons for this? [Services provided by other market players meet my needs better]	Yes	64	4.1%
	No	858	55.0%
	NA	637	40.9%

Note. *NA: not available.

Source: own elaboration.

Appendix 2:

Survey on Student Entrepreneurial Potential and Forms of Business Support Expected by Students

The staff of the Department of Entrepreneurship at UITM in Rzeszów, Poland, are conducting research on the potential for entrepreneurship among students and the forms of support from the University that students planning to start a business expect. Answers to the questions in the survey are anonymous. The results will be used to develop solutions aimed at effectively supporting those planning to set up a business. We hope for honest and comprehensive answers. Incomplete questionnaires will not provide full knowledge of the topic under investigation. The survey will take no longer than 10 minutes to complete.

Thank you for completing the survey.

(A) Student Entrepreneurial Potential (In each question, please only choose one response)

A1. I am an entrepreneurial person

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A2. My family and friends consider me an entrepreneurial person

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A3. I consider myself a person of strong character

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A4. In stressful situations I can concentrate and think clearly

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A5. I am a person who never gives up

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A6. The setbacks I experience provide me with lessons for the future

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A7. My life is determined by my own actions

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A8. To what extent do you agree with the statement that you are either naturally good at something or you are not; effort makes no difference

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A9. To what extent do you agree with the statement that being successful is a result of working hard and luck has nothing to do with it

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A10. In difficult and complex situations, I always find a few alternatives to solve the problem

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A11. I can find myself in any, even in the most unfavourable circumstances

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A12. I can easily adapt to new circumstances

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A13. I am able to look at a situation from different points of view

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A14. I like to find out about things, even if it means handling some problems while doing so

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A15. I prefer doing things in the usual way rather than trying out new ways

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A16. I am seriously thinking about starting a business

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A17. I am ready to do anything to become an entrepreneur

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A18. I make a determined effort to achieve the goals I set for myself

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A19. I try to cope with solving problems no matter how difficult they are

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A20. Dealing with difficult situations strengthens and develops me

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A21. I implement developed plans from start to finish

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A22. I am open to new experiences

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A23. I would not mind routine, unchallenging work if the pay was good

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A24. When I am faced with a challenge, I think more about the results of succeeding than the effects of failing

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A25. I like to take on challenges that allow me to prove myself in new situations

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A26. I tend to be pessimistic and overly cautious in difficult situations

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A27. Before making an important decision, I prefer to weigh up the pros and cons fairly quickly rather than spending a long time thinking about it

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

A28. If there is a chance of failure, I would rather not do it

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

(B) Expectations entrepreneurship support offered by UITM (For each question, choose only one response)

B1. Do you run a business, or are you a shareholder in a company? (If 'No,' go to question B2; if 'Yes,' go to question B3)

a) Yes
b) No

B2. Do you plan to start a business while studying at UITP?

a) Definitely agree
b) Rather agree
c) Neither agree or disagree
d) Rather disagree
e) Definitely disagree

B3. Have you ever used UITMs' support in setting up and running a business? (If 'Yes' go to question B4 and then B6, if 'No' go to question B5)

a) Yes
b) No

B4. What was the support provided by UITM about?

a) support in preparing a business plan
b) financial and accounting support
c) legal support
d) participation in thematic training courses for entrepreneurs
e) support in obtaining external funding for starting a business
f) support in developing a product strategy
g) support in developing a marketing strategy
h) Other, which

B5. If you did not use the support offered by UITM when setting up your business, what was the reason?

a) I was not aware that such support was available
b) I had no need for the support offered by the university
c) I think that the market offers better support than the university
d) I did not know who / which units at the university to approach for support
e) I did not want the support provided to create future obligations towards the university
f) I needed financial support, which I could not get from the university
g) Other, which

B6. Are you interested in taking advantage of the start-up and business assistance offered by UITM again? (If 'Yes,' go to question B7. If 'No,' go to question B8).

a) Yes
b) No

B7. What kind of support do you expect from UITM when setting up your business, taking into account your previous experience with support from the University?

a) assistance in the preparation of a business plan
b) financial and accounting advice
c) legal advice
d) direct financial support from UITM
e) participation in thematic training courses
f) support in the development of a business model
g) assistance in choosing the organizational and legal form of business activity
h) assistance in the procedure of registering business activity
i) assistance in obtaining funds for starting a business activity
j) possibility to consult business ideas with practitioners
k) Other, which

B8. If you do not plan to use UITMs support when setting up your business, what are the reasons for this?

a) I do not think that the university has an attractive offer of support
b) I need financial support, which I will not get at university
c) I don't want too many people to know about my business idea
d) I don't want to have obligations towards the university
e) I have more confidence in external experts
f) I have had bad experiences with applying for university support
g) The support provided by the university has not met my expectations
h) Services provided by other market players meet my needs better
i) Other, which

(C) METRICS

C1. Gender:

a) Female
b) Male

C2. Age:

a) from 16 to 18
b) from 19 to 21
c) from 22 to 24
d) from 25 to 30
e) from 31 to 40
f) from 41 and above

C3. Employment status:

a) full-time employee
b) part-time employee
c) unemployed
d) freelancer
e) self-employed
f) trainee/apprentice
g) economically inactive

C4. Mode of study:

a) Offline
b) Online

C5. Track of study:

a) Polish-Language
b) English-Language

C6. Country of Origin:

a) Poland,
b) Ukraine,
c) Kazakhstan,
d) China,
e) India,
f) Belarus,
g) Other, which

C7. Level of study:

a) Bachelor
b) Master
c) Postgraduate

C8. Field of Study:

a) Aviation Management
b) Computer science
c) Social Work
d) Game Design and Development
e) International Business Management
f) Nursing
g) Programming
h) Global Aviation Management
i) Cybersecurity
j) Data Science

Thank you for filling in the questionnaire

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Use of Artificial Intelligence

The authors confirm that the text of the manuscript was prepared entirely without the use of any AI/GAI tools.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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