

Shaping Entrepreneurial Intentions: The Moderating Role Of Entrepreneurship Education

Panagiota I. Xanthopoulou¹

Alexandros G. Sahinidis²

¹ University of West Attica, School of Administrative, Economics and Social Sciences, Department of Business Administration, Athens-Greece, pxanthopoulou@uniwa.gr, ORCID: <https://orcid.org/0000-0003-2503-3901>

² University of West Attica, School of Administrative, Economics and Social Sciences, Department of Business Administration, Athens-Greece, asachinidis@uniwa.gr, ORCID: <https://orcid.org/0000-0001-7564-5813>

Abstract: Since entrepreneurship is commonly considered as a solution to the unemployment problem, higher education in general and entrepreneurship education in particular encourage entrepreneurial activity among students and generate more graduates who are the future entrepreneurs. The present study aims to investigate the effect of entrepreneurship education programs on students' intentions to launch a new venture after completing their studies. An ex ante/ex post study with 145 first-year students was conducted in a four-year public university. The association between entrepreneurial intention and its antecedents was examined using regression analysis, and the effectiveness of the intervention was evaluated using a Paired Samples test. The intervention had no discernible effects, but the only meaningful relationship found was that with Personal Attraction. In general, the research findings suggests that entrepreneurship education programs develop the students' intention to be self-employed. Practically, the present research provides useful information and insights for those who create, execute and evaluate educational programs to increase students' entrepreneurial intention. Our results clearly imply that the involvement in entrepreneurship education can significantly affect students' subjective norms and PBC, supporting the idea that universities can promote entrepreneurial abilities and subjective norms through entrepreneurship education programs.

Key Words: Entrepreneurship Education Programs, Personal Attraction, Perceived Behavioral Control, Social Norms

1. INTRODUCTION

Entrepreneurship education is an important demographic factor in the literature which consists of any pedagogical or process of education and develops entrepreneurial attitudes and skills (Silangen, 2016; Sahinidis et al., 2021). Westhead and Solesvik (2016) describe Entrepreneurship Education (EE) as the main driver of entrepreneurial performance. Existed literature reveals that entrepreneurial studies through different teaching methods and courses have important impacts on student's intentions and their perceived planned behavior to become entrepreneurs. Sultan et al (2016) showed that the entrepreneurial education has a positive effect on students' entrepreneurial intentions and suggest that universities and other business schools must offer entrepreneurial education courses in order to motivate people to bring new ideas and contribute in their society. The current research aims to investigate the relationship between Entrepreneurship Education Programs (EEPs) and Entrepreneurial Intention (EI) and its antecedents using an ex ante/ex post design and a sufficient sample, in order to overcome the shortcomings of the vast majority of the existing studies. The methodology used is based on Ajzen's (1991) Theory of Planned Behavior (TPB), allowing for the analysis of the relationships between EI and Personal Attraction (PA), EI and Perceived Social Norms (SN) and Perceived Behavioral Control (PBC). The Theory of Planned Behavior, is one of the most

thoroughly tested and validated theories which and has produced generally accepted outcomes, explaining variances in EI within a range from 0.27 to 0.65 (Steinmetz, et al., 2016). Personal Attraction (PA) refers to the degree of accepting the idea to become an entrepreneur (Ozaralli et al., 2016). Social Norms (SN) refer to the extent to which the social surroundings of an individual are supportive to his/her potential entrepreneurial initiatives. There is a shared view among researchers that these norms are directly associated with entrepreneurial intention (Meek et al., 2010) as they affect the ways that people make decisions and shape their thoughts. Perceived Behavioral Control (PBC) reflects the degree to which the person perceives himself/herself as capable of carrying a task out, in this case starting his/her own business. It is closely related to the concepts of self-efficacy and internal locus of control (Armitage & Conner, 2001).

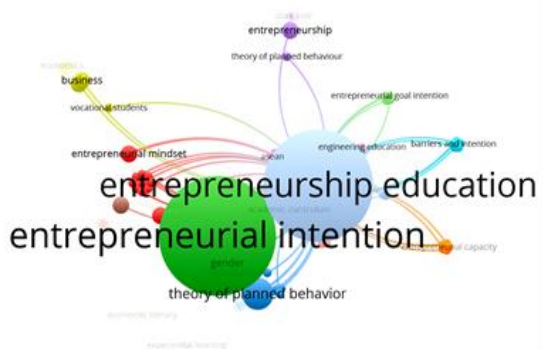
Although there are many studies concerning the relationship between entrepreneurship education and entrepreneurial intention of students, they focus on the later years of studies, closer to graduation, with only two exceptions of Nabi et al. (2018) and Majumdar and Damodharan (2013). This study adds value by examining how learning through EEPs is perceived and how it relates to the antecedents of intention. In order to evaluate these relationships, the same online questionnaire was distributed in two different times of the 3rd

semester (2nd year of studies). Additionally, the present research supports the features of the theory of planned behavior and how they relate to entrepreneurial intention when taking into account a large sample of university students. The following paragraphs include a brief literature review, the methodology used, the study results and the conclusions drawn. Furthermore, the limitations and suggestions for further research are also presented.

2. THEORETICAL DEVELOPMENT

The role of entrepreneurship in the socio-economic development of nations has long been discussed in the post-Schumpeter era (Crudu, 2019). The entrepreneurship education programs (EEPs) increase people's intention to become entrepreneurs and contribute to the success of the new venture created. Entrepreneurship education is commonly accepted as a determinant that enhances entrepreneurial activity (Bischoff et al., 2018; Xanthopoulou & Sahinidis, 2022; Sahinidis, Polychronopoulos, & Kallivokas, 2019). Literature suggests that the most suitable indicator to evaluate the results of entrepreneurship education is the rate of new business creation (Raposo & Do Paço, 2011). As Figure 1 presents, entrepreneurship is a vital determinant of students' entrepreneurial intention. Specifically, a study on 72 research papers through ScienceDirect database which have been published from 2012 until now shows that entrepreneurial intention is mainly studied in comparison with the entrepreneurship education and the theory of planned behavior. These three key-phrases were common in all 72 research items.

Figure 1: Network visualization (with the use of VOSviewer).



EEPs can create entrepreneurial mindsets and culture among students and help them to improve their career choices towards entrepreneurship (Jardim, et al., 2021). This view is commonly accepted by a large amount of studies (such as Tsaknis et al., 2022; Bae et al., 2014; Astiana, et al.,

2022; Haddoud et al., 2022; Lv et al., 2021) who found that an entrepreneurship education increases students' awareness towards entrepreneurship, allows them to further develop their entrepreneurial skills, reveals them ways to turn theory into practice, and highlights the entrepreneurial path as a career option (Silangen, 2016). Ahmed et al. (2020) referred to many experts of the field who support that business education should start as soon as possible, for two reasons: first, since it plays a crucial role in preparing young entrepreneurs and equips them with the necessary skills to manage their own firm. Secondly, in the setting of a post-industrial, globalized economy, entrepreneurship education instills business habits and job abilities that may help young, talented individuals who wish to be self-employed. Entrepreneurship education has gradually expanded in recent years (Kefis & Xanthopoulou, 2015). The European Commission in 2004 proposed that all EU Member States should include entrepreneurship education in their national curriculum and in all educational institutions. Furthermore, EEPs as a determinant of entrepreneurial intention have been studied in different countries and for different scientific fields. Specifically, EEPs can be mainly found in departments of business and economic studies, where students are taught the concept of entrepreneurship and acquire the necessary knowledge for establishing and managing an enterprise. However, there is a lack in other scientific fields and departments, where entrepreneurship is taught only within the context of optional courses (Papagiannis, 2018). Among different countries there are different pedagogical levels of entrepreneurship education, hence different outcomes from this education (Haase & Lautenschläger, 2011).

Much debate exists about whether entrepreneurship education programs can enhance the strengths, and overcome the limitations, associated with individual characteristics, such as openness to experience, and personal circumstances, such as family and social background (Liñán, 2004). At the same time, entrepreneurial beliefs, intentions and practices change throughout time (Lee & Wong, 2004). Specifically, over time, the entrepreneurs' personal experiences, including their formal educational experiences as well as the opportunities and barriers to entrepreneurship afforded by their environment, may have an impact on their decision to be self-employed. Although there is a lot of literature on EEPs, with the majority of studies concluding in the hypothesis that EEPs have a positive effect on entrepreneurial intention

(EI) and its antecedents including “Personal Attraction”, “Perceived Social Norms” and “Perceived Behavioral Control”, there are still concerns regarding the appropriateness of the methodologies used and the lack of rigor in the majority of the extant research (Fayolle & Gailly, 2015; Sahinidis, et al., 2019; Wijayati et al., 2021; ZHANG & SOROKINA, 2022). Lorz, et al. (2013) in their systematic review of 39 related studies, suggest that the majority of them indicate a positive relationship between EEPs and EI, as well as its antecedents. The same authors categorized their sample into two types: the ex post and the ex ante/ex post and recorded the sample sizes of each study. They observed that only 12 studies, or the 31% of the sample, used ex ante/ex post designs, and that half of them had sample sizes under 71. Other researchers such as Shah et al. (2020), Van Graevenitz (2010), Oosterbeek et al. (2010), Van Praag, and Ijsselstein (2010), Von Graevenitz, Harhoff, and Weber (2010) refer to an inverse relationship between EEPs and EI mainly due to the fact that individuals are becoming more conscious of their own limitations and the difficulties that come with starting a business. Earlier studies however such as Lopez et al. (2021), Hassan et al. (2020), Ndfirepi, (2020) and Wu et al. (2021) showed a significant influence of EEPs on EI and its antecedents.

The majority of the EI studies reports significant relationships between EI and its antecedents, especially in the cases of PA and PBC (Ajzen, 2005; Armitage & Conner, 2001). These theoretical and practical findings point to several relationships. First, entrepreneurship education programs provide advantages for learning, motivation, and practice. From the perspective of the TPB, it is proposed that each of the three advantages of entrepreneurship education have an impact on each of the antecedents of entrepreneurial intentions. Based on these, the researchers conclude in the following hypotheses:

H1: Entrepreneurial Intention relates positively with its antecedents.

H2: Entrepreneurship Education Programs positively affect EI and its antecedents.

3. METHODOLOGY

An ex ante/ex post study was used to evaluate the impact of an entrepreneurship course, taught by the authors at a public University of Athens. The duration of this module was 36 hours for the total semester for approximately 300 first-year students. For its successful completion, it was required by the

students to attend the class and to prepare, submit and present a coursework. The coursework was about a business plan, for the launching of a new, innovative venture, by teams of 4-5 students. The questionnaire was distributed online in two different times (October 2021 to January 2022): when starting the entrepreneurship course (T1) and shortly before its completion (T2) in order to evaluate any changes in students’ entrepreneurial intention and to measure the impact of the EEP on it. Before distributing the questionnaires, the students were informed of the study's objectives and the voluntary and private nature of the replies. Students were given the assurance that they may submit a questionnaire that was blank or incomplete without their teacher finding out who had or not taken part in the study. The sample reached the 187 students who completed the first round of the questionnaire and 145 of them completed the second one too. Therefore, the final sample is limited to 145 students, somewhat smaller than the first group of participants, however large enough to reach reliable conclusions. Table 1 below presents the demographics of the research sample. The 46,3% of the respondents consisted of females and the 53,7 of males, aged from 18-25 (94% of the participants), to 45-54 (2% of the participants). As regards family occupation background and especially father’s occupation which is considered as major determinant of students’ entrepreneurial intention (Sahinidis et al., 2019; Nowiński & Haddoud, 2019; López et al., 2016), 2% of the subjects’ fathers are unemployed, 24 percent were self-employed, 0,5 % are freelancers, 52,5% worked for private organisations, 17,3% are self-employed and 27,7% worked for public sector.

Table 1: Demographic characteristics of the participants

Gender	
Females	46,3%
Males	53,7%
Level of education	
Undergraduates	100%
Age	
18-25	94%
26-34	3%
35-44	2%
45-54	2%
Father’s Occupation	
Unemployed	2%
Freelancer	0,5%
Employee	52,5%
Self-employed	17,3
Public servants	27,7

In order to ensure the validity of the research, the online questionnaire that was constructed was based on previous studies on EI, measuring the effects of the intervention (the one semester course) on EI, PA, SN and PBC.

4. RESULTS

With the use of SPSS v.20.0 statistical tool, a paired samples T test was conducted in order to find possible differences before and after the intervention relationship. Table 2 shows that there are no significant changes found before the intervention and after that, in all, EI (24 Before and 27 After), PA (21 Before and 20 After), SN (22 Before and 25 After) and PBC (23 Before and 26 After). In order to test the predicting power of the antecedents in explaining EI, the Linear Regression procedure was used. As table 3 illustrates, only one of the antecedents, specifically the "Personal Attraction" was significantly associated with Intention.

Table2: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 VAR00021- VAR00020	-,01655	1,74555	,14496	-,30308	,26997	-,114	144	,909
Pair 2 VAR00022- VAR00025	,08506	1,82860	,15186	-,21510	,38521	,560	144	,576
Pair 3 VAR00023- VAR00026	-,10759	1,61847	,13441	-,37325	,15808	-,800	144	,425
Pair 4 VAR00024- VAR00027	,03678	2,17621	,18072	-,32043	,39400	,204	144	,839

Table 3: Relationship between EI and PA, SN and PBC

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-,656	,367		-1,787	,076
VAR00020	,959	,077	,784	12,481	,000
VAR00025	,022	,066	,021	,339	,735
VAR00026	-,002	,081	-,002	-,029	,977

5. CONCLUSIONS AND SUGGESTIONS

Although students' entrepreneurial views and intentions are positively affected by entrepreneurship education programs, limitations regarding their personal characteristics may prohibit them from acting in an entrepreneurial manner. Intentions cannot be carried out in situations that forbid action, and they won't be carried out when fear of failure is high since entrepreneurial behavior follows the formulation of intentions. Therefore, while if entrepreneurship

education programs give students ways to learn about entrepreneurship, develop their entrepreneurial skills, and expand their entrepreneurial capacities, it should not be assumed that these programs will directly change how people behave. Therefore, it should not be assumed that entrepreneurship education will instantly result in a more entrepreneurial society.

Based on the pertinent literature, the findings of this study do not support the preceding hypotheses that were mentioned above. This is related to the fact that many of the studies in the literature lack rigor, leading them to draw findings that are not adequately supported. The findings proved that among the antecedents studied, only "Personal Attraction" was significantly associated with entrepreneurial intention. A reason for the divergence of the study's results may be the fact that the students who constituted the research sample were relative "new" in the university and their still not thinking seriously about their career future. Therefore, it is possible to infer that students' exposure to entrepreneurship education programs has an impact on their psychological development. Through seeking to clarify the process by which entrepreneurship education affects entrepreneurial intention, the study adds to the body of literature. It rekindles the connection between certain antecedents and the growth of entrepreneurial traits. Second, the study adds to the body of research on entrepreneurial intention because its measures took place in two different phases of the early semesters. This has practical implications for teachers who must target their teaching methods and strategies and adjust course material to suit the students' academic needs.

There are several limitations that should be mentioned. First of all, the primary data came from a sample of students chosen from a single institution, thus the results' generalizability is compromised by their restricted spatial emphasis. Future research should include students from various universities and various scientific fields in order to evaluate the differences and yield insightful information. Future studies should also use an experimental design and more situational factors to increase the scientific rigor of their research. The same study may also be carried out by comparing differences between genders. Finally, it is suggested that more research on the effects of EEPs may be required, particularly when considering pedagogical, interventional, and methodology-related concerns.

REFERENCES

- Ahmed, T., Chandran, V. G. R., Klobas, J. E., Liñán, F., & Kokkalis, P. (2020). Entrepreneurship education programmes: How learning, inspiration and resources affect intentions for new venture creation in a developing economy. *The International Journal of Management Education*, 18(1), 100327.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior & Human Decision Processes* 50:179–211.
- Armitage, C.J. and Conner, M. (2001). Efficacy of the theory of planned behavior: A meta-analytic review. *British Journal of Social Psychology*, Vol. 40, 471–499.
- Astiana, M., Malinda, M., Nurbasari, A., & Margaretha, M. (2022). Entrepreneurship Education Increases Entrepreneurial Intention among Undergraduate Students. *European Journal of Educational Research*, 11(2), 995-1008.
- Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review. *Entrepreneurship theory and practice*, 38(2), 217-254.
- Bischoff, K., Volkmann, C. K., & Audretsch, D. B. (2018). Stakeholder collaboration in entrepreneurship education: an analysis of the entrepreneurial ecosystems of European higher educational institutions. *The Journal of Technology Transfer*, 43(1), 20-46.
- Crudu, R. (2019). The role of innovative entrepreneurship in the economic development of EU member countries. *Journal of Entrepreneurship, Management and Innovation*, 15(1), 35-60.
- Fayolle, A. and Gailly, B. (2015). The Impact of Entrepreneurship Education on Entrepreneurial Attitudes and Intention: Hysteresis and Persistence. *Journal of Small Business Management*, 53: 75–93.
- Haase, H., & Lautenschläger, A. (2011). The 'teachability dilemma' of entrepreneurship. *International entrepreneurship and management journal*, 7(2), 145-162.
- Haddoud, M. Y., Onjewu, A. K. E., Nowinski, W., & Alammari, K. (2022). Assessing the role of entrepreneurship education in regulating emotions and fostering implementation intention: evidence from Nigerian universities. *Studies in higher education*, 47(2), 450-468.
- Hassan, A., Saleem, I., Anwar, I., & Hussain, S. A. (2020). Entrepreneurial intention of Indian university students: the role of opportunity recognition and entrepreneurship education. *Education+ Training*.
- Kefis, V., & Xanthopoulou, P. (2015). Teaching entrepreneurship through E-learning: The implementation in schools of social sciences and humanities in Greece. *International Journal of Sciences*, 4(08), 17-23.
- Jardim, J., Bártolo, A., & Pinho, A. (2021). Towards a global entrepreneurial culture: A systematic review of the effectiveness of entrepreneurship education programs. *Education Sciences*, 11(8), 398.
- Lee, S. H., & Wong, P. K. (2004). An exploratory study of technopreneurial intentions: A career anchor perspective. *Journal of business venturing*, 19(1), 7-28.
- Liñán, F. (2004). Intention-based models of entrepreneurship education. *Piccola Impresa/Small Business*, 3(1), 11-35.
- Lopez, T., Alvarez, C., Martins, I., Perez, J. P., & Román-Calderón, J. P. (2021). Students' perception of learning from entrepreneurship education programs and entrepreneurial intention in Latin America. *Academia Revista Latinoamericana de Administración*, 34(3), 419-444.
- López-Fernández, M. C., Serrano-Bedia, A. M., & Pérez-Pérez, M. (2016). Entrepreneurship and family firm research: A bibliometric analysis of an emerging field. *Journal of Small Business Management*, 54(2), 622-639.
- Lorz, M., Mueller, S., & Volery, T. (2011). Entrepreneurship Education: A Meta Analysis of Impact Studies and Applied Methodologies. In *G-Forum 2011*. Bonn: Förderkreis Gründungs-Forschung E.V.
- Lv, Y., Chen, Y., Sha, Y., Wang, J., An, L., Chen, T., ... & Huang, L. (2021). How entrepreneurship education at universities influences entrepreneurial intention: mediating effect based on entrepreneurial competence. *Frontiers in Psychology*, 12, 655868.
- Majumdar, S., & Varadarajan, D. (2013). Students' attitude towards entrepreneurship: does gender matter in the UAE?. *Foresight*, 15(4), 278-293.
- Martin, B., C., J. J. McNally and M. J. Kay, 2013, Examining the formation of human capital in entrepreneurship: a meta-analysis of entrepreneurship education outcomes, *Journal of Business Venturing* 28 (2), 211-224.
- Meek, W. R., Pacheco, D. F., & York, J. G. (2010). The impact of social norms on entrepreneurial action: Evidence from the environmental entrepreneurship context. *Journal of Business Venturing*, 25(5), 493-509.
- Nabi, G., Walmsley, A., Liñán, F., Akhtar, I., & Neame, C. (2018). Does entrepreneurship education in the first year of higher education develop entrepreneurial intentions? The role of learning and inspiration. *Studies in Higher Education*, 43(3), 452-467.
- Ndofirepi, T. M. (2020). Relationship between entrepreneurship education and entrepreneurial goal intentions: psychological traits as mediators. *Journal of Innovation and Entrepreneurship*, 9(1), 1-20.
- Nowiński, W., Haddoud, M. Y., Lančarič, D., Egerová, D., & Czeplédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, 44(2), 361-379.
- Oosterbeek, H., M. Van Praag, and A. Ijsselstein, (2010). "The Impact of Entrepreneurship Education on Entrepreneurship Skills and Motivation," *European Economic Review* 54, 442–454.
- Ozaralli, N., & Rivenburgh, N. K. (2016). Entrepreneurial intention: antecedents to entrepreneurial behavior in the USA and Turkey. *Journal of Global Entrepreneurship Research*, 6(1), 1-32.
- Papagiannis, G. D. (2018). Entrepreneurship education programs: The contribution of courses, seminars and competitions to entrepreneurial activity decision and to entrepreneurial spirit and mindset of young people in Greece. *Journal of Entrepreneurship Education*, 21(1), 1-21.

- Raposo, M. L. B., & Paço, A. M. F. D. (2011). Entrepreneurship education: Relationship between education and entrepreneurial activity. *Psicothema*.
- Sahinidis, A. G., Xanthopoulou, P. I., & Tsaknis, P. A. THE IMPACT OF PERSONALITY TRAITS ON ENTREPRENEURIAL EDUCATION EFFECTIVENESS.
- Sahinidis, A. G., Polychronopoulos, G., & Kallivokas, D. (2019). Entrepreneurship education impact on entrepreneurial intention among tourism students: A longitudinal study. In *Strategic innovative marketing and tourism* (pp. 1245-1250). Springer, Cham.
- Sahinidis, A., Stavroulakis, D., Kossieri, E., & Varelas, S. (2019). Entrepreneurial intention determinants among female students. The influence of role models, parents' occupation and perceived behavioral control on forming the desire to become a business owner. In *Strategic innovative marketing and tourism* (pp. 173-178). Springer, Cham.
- Shah, I. A., Amjed, S., & Jaboob, S. (2020). The moderating role of entrepreneurship education in shaping entrepreneurial intentions. *Journal of Economic Structures*, 9(1), 1-15.
- Silangen, P. (2016). The effect of entrepreneurship education on entrepreneurial intention in Indonesia. *DeReMa (Development Research of Management): Jurnal Manajemen*, 11(1), 67-86.
- Steinmetz, H., Knapstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How effective are behavior change interventions based on the theory of planned behavior? A three-level meta-analysis. *Zeitschrift für Psychologie*, 224(3), 216.
- Sultan, M. F., Maqsood, A., & Sharif, H. M. (2016). Impact of entrepreneurial education on students entrepreneurial intentions. *KASBIT Business Journal*, 9(1), 131-153.
- Tsaknis, P. A., Sahinidis, A. G., Xanthopoulou, P. I., & Vassiliou, E. E. (2022). The impact of personality and entrepreneurship education on entrepreneurial intention. *Corporate Governance*, (1), 130-138.
- Von Graevenitz, G., Harhoff, D., & Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic behavior & organization*, 76(1), 90-112.
- Westhead, P., & Solesvik, M. Z. (2016). Entrepreneurship education and entrepreneurial intention: Do female students benefit?. *International small business journal*, 34(8), 979-1003.
- Wijayati, D. T., Fazlurrahman, H., Hadi, H. K., & Arifah, I. D. C. (2021). The effect of entrepreneurship education on entrepreneurial intention through planned behavioural control, subjective norm, and entrepreneurial attitude. *Journal of Global Entrepreneurship Research*, 1-14.
- Wu, L., Jiang, S., Wang, X., Yu, L., Wang, Y., & Pan, H. (2021). Entrepreneurship education and entrepreneurial intentions of college students: The mediating role of entrepreneurial self-efficacy and the moderating role of entrepreneurial competition experience. *Frontiers in psychology*, 12.
- Xanthopoulou, P. I., & Sahinidis, A. G. (2022). Determinants Of Entrepreneurial Intention Among University Students.
- ZHANG, L., & SOROKINA, N. (2022). A Study on Elderly Entrepreneurial Intention in the Hospitality and Tourism Industry in China. *The Journal of Asian Finance, Economics and Business*, 9(2), 335-346.