

Review

Entrepreneurial Intention of University Students under the Perspective of the Theory of Planned Behaviour: Integrative Literature Review

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Abstract: (1) Background: In a competitive and globalised world, retaining immigrants in entrepreneurial universities is an underutilised asset, one that allows economic development to be better enabled. Thus, studying the entrepreneurial intention (EI) of students enables the development of practices and public policies. (2) Purpose: Although the Theory of Planned Behaviour (TPB) is not a recent approach, its theoretical framework was considered consistent to understand the entrepreneurial intention (EI) of university students, considering the geographic region of origin. (3) Methods: This article is an integrative literature review. The database consulted was the Web of Science. Works available in full until 2022 that addressed at least two TPB antecedents were included. Works that were not articles that included university students were excluded. (4) Results: The articles analysed confirm the predictive power of the theory. However, more standardised studies need to address the role of variables. The African results showed a greater entrepreneurial attitude; Americans and Asians perceived greater behavioural control; and the subjective norm was stronger among Africans. (5) Originality: This work contributes to fomenting attention to this field, providing the development of theories, and suggesting avenues for future research. The authors did not find a literature review on the subject.



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Keywords: entrepreneurial intention; entrepreneurial university; students; TPB; literature review

1. Introduction

Knowledge management emerged as a central factor in discussions regarding competitive capacity at the macro- (countries) and micro- (companies) levels. In this context, universities are fundamental elements of the innovation system (Hassan 2020), as they have added responsibility for social and economic development to their missions—entrepreneurial university (Etzkowitz 2003). Thus, it is up to the university to act actively in society, establishing relationships with industry and the State (Etzkowitz and Leydesdorff 2000), in addition to collaborating with the public and the natural environment, such as the concept of the Quintuple Helix (Carayannis and Campbell 2010). University students stand out among the protagonists of this dynamic and innovative scenario, whose entrepreneurial intention plays a crucial role in promoting entrepreneurial activity.

As a precursor variable of entrepreneurial behaviour, entrepreneurial intention has been the subject of extensive research, with the Theory of Planned Behaviour (TCP) being a theoretical framework widely used in exploring and understanding this phenomenon. This theory suggests that intention is influenced by three main factors: attitude towards the behaviour, subjective norms, and perception of behavioural control.

Considering that entrepreneurial intention is not a uniform phenomenon but varies significantly between different groups and in different sociocultural contexts, Liñán and Chen (2009) observed the need to analyse entrepreneurial intentions in the light of different

values and cultures, reinforcing the importance of studying entrepreneurial intention in a multicultural scenario, thus considering the geographic region of origin of the student.

Therefore, we sought to gather information with the purpose of answering the following research problem: how does the Theory of Planned Behaviour explain the entrepreneurial intention of university students considering their geographic region of origin?

Intention is the starting point for entrepreneurial behaviour; thus, it gives light to the understanding of how an enterprise goes from idea to practice (Al Mamun et al. 2016). Therefore, the objective of this work is to understand the entrepreneurial intention of students, considering the geographic region and the Theory of Planned Behaviour, through a literature review.

This work contributes in two ways: First, it promotes attention to this field and provides the development of theories about the entrepreneurial intentions of university students through conceptual research (Meredith 1993). Second, it suggests avenues for future research to add scientific and social contributions to the formulation of entrepreneurial policies and practices.

For the development of this work, an integrative literature review was carried out in the database of the main collection of the Web of Science. The authors did not find a literature review on the subject. This bibliographical research was based on scientific publications on the entrepreneurial intention of university students based on Ajzen's Theory of Planned Behaviour (TPB) (Ajzen 1991).

In addition to the TPB, several models have gained prominence when trying to predict entrepreneurial intention, such as the Model of Implementing Entrepreneurial Ideas (Bird 1988), the Theory of Social Learning (Bandura 1977), and Shapero and Sokol's Entrepreneurial Event Model (SEE) (Shapero and Sokol 1982). However, the literature demonstrates that TPB is widely used (Morris et al. 2012) and applicable to the analysis of entrepreneurial intention (Kolvereid and Isaksen 2006). Furthermore, the literature review carried out by Guzmán-Alfonso and Guzmán-Cuevas (2012) analysed the TPB, the SEE, and the Model of Entrepreneurial Potential (MEP) by Krueger and Brazeal (1994); the latter sought to integrate the first two models. As a result, the authors concluded the presence of antecedents of TPB motivation in the studied models. Thus, TPB manages to explain entrepreneurial intention through the antecedents present in the three important theories.

The present work is organised as follows: (1) An introduction is made to situate the theme; then, (2) the work methodology is explained, followed by (3) a bibliometric analysis that seeks to understand the publications per year and identify the most relevant sources, documents, countries, and keywords. A scientific mapping is also carried out to determine the co-occurrence network and the thematic map of the studied collection. Complementing the analysis of results, a systematic analysis was concerned with understanding how the literature understands the relationship between the antecedents (entrepreneurial attitude (ATE), Perceived Behavioural Control (PBC) or self-efficacy (SE), and subjective norms (SNs)) of entrepreneurial intention by geographic region. We later report which situational and contextual predictors were included in the theory in order to increase its predictive power. This review ends with final considerations and suggests (4) paths for future research.

2. Presentation and Analysis of Results

The collection consists of 48 papers from 38 sources written from 2012 to 2022 by 149 authors.

2.1. Bibliometric Analysis

2.1.1. Publications by Year

Although the year of publication of the first document was 2012, the first four years had an average of one publication per year, and only in 2016 was there a gradual increase in publications, with a peak in 2020 with twelve publications.

The averages of the total citations for the year 2012 are above the others (24.0). However, the total number of citations refers to only one publication: Moriano et al. (2012). The

document is the oldest in this analysis and addresses the applicability of TPB in different cultures. These two factors, time of publication and theme, contribute to the justification of the number of citations.

2.1.2. Relevance of Sources, Documents, Country, and Keywords

Bradford's law (Bradford 1934) demonstrates the number of journals devoted to a given subject (Figure 1). In our case, there are three zones, with the first area in Graph 1 comprising seven journals that published 17 papers. The sources that published the most are *Cogent Business and Management*, *Frontiers in Psychology*, and the *Journal of Small Business and Enterprise Development*. Among these, the *Journal of Small Business and Enterprise Development* is the journal with the greatest impact, as indicated by its H-index and a productivity index of 3.

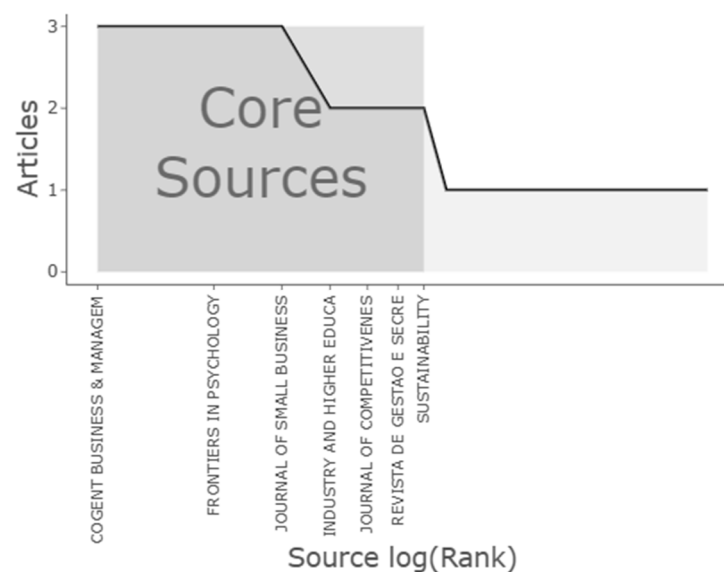
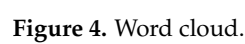
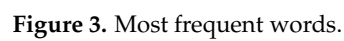
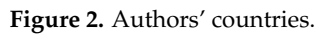


Figure 1. Analysis of journals by Bradford's Law.

As only six authors published two documents and the others only one, it would not make any difference to analyse the relevance of the authors, so we chose to focus on the data from the documents. The article by Moriano et al. (2012) has the highest number of citations, a total of 264, followed by Küttim et al. (2014) with 88 citations, Zhang et al. (2015) with 61 citations, and Karimi et al. (2017) with 60 citations. Moriano et al. (2012) was also the most cited document within the collection of selected documents (14 citations), followed by Zhang et al. (2015) with 4 citations and Trivedi (2016) with 3 citations.

The authors of our collection of articles come from 27 countries (Figure 2). Spain was the country with the highest number of publications (seven documents), followed by Vietnam (five documents).

Figure 3 shows the 50 most frequent author keywords, in which the words *entrepreneurial intention*, *theory of planned behaviour*, *entrepreneurship*, *entrepreneurship education*, *self-efficacy*, and *students* are the six most frequent. The term *developing country* appears as the ninth most frequent word and thus demonstrates both the development of the research field and the entrepreneurial interest of students in developing countries, given the multicultural nature of our study. These words reflect the purpose of our study. The word cloud is presented in Figure 4.



2.2. Scientific Mapping—Conceptual Structure

To analyse the conceptual structure, we used the authors' keywords and the Walktrap clustering algorithm with a network of 50 nodes.

2.2.1. Co-Occurrence Network

In this analysis, we used normalisation by association. It is possible to perceive the high intermediation that some words have in the analysis network (Figure 5), highlighting the cluster formed by the themes entrepreneurial intention, theory of planned behaviour, entrepreneurship education, developing country, students, and structural equation modelling, among others. In addition to the terms associated with the keywords, the theme of structural equation modelling emerges. Although it draws attention, it is not surprising. Structural equation modelling is the technique most commonly used for data analysis by the composite articles in our collection. This technique seeks to explain how multiple variables are related (Hair et al. 2009, p. 543).

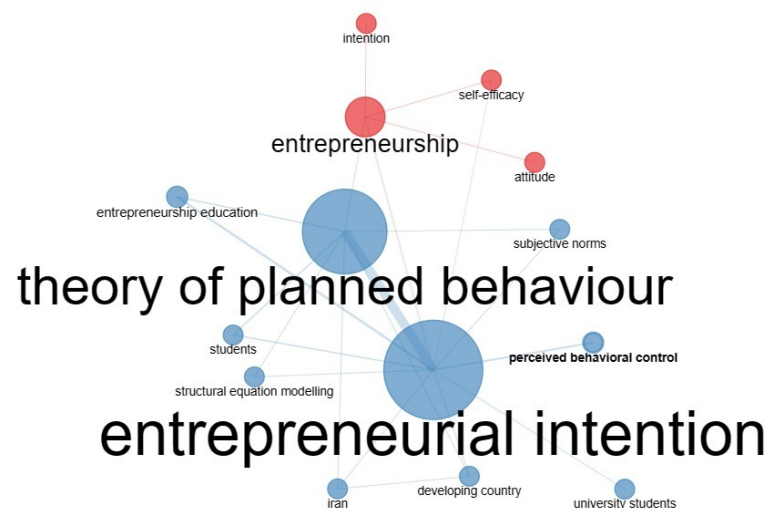


Figure 5. Co-occurrence network.

2.2.2. Thematic Map

Figure 6 presents a two-dimensional matrix (density and centrality of themes). In this step, the minimum frequency of three groups and three terms was used.

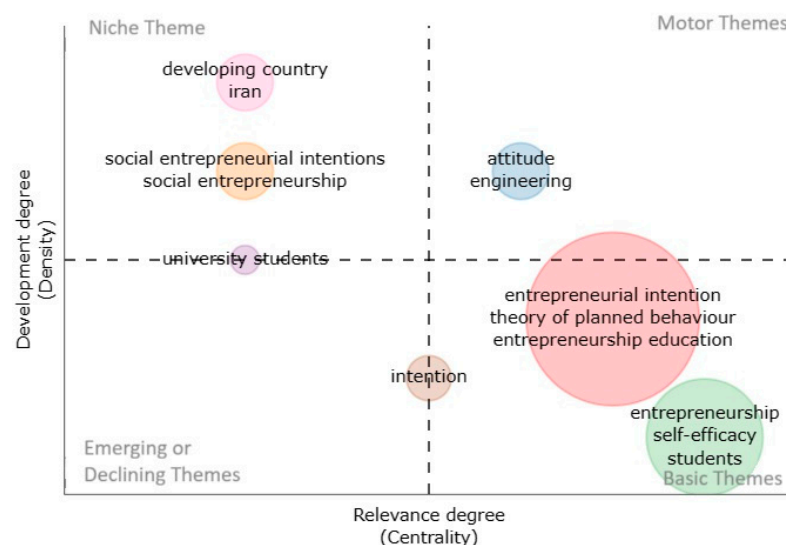


Figure 6. Thematic map.

Clusters with low centrality and greater proximity are composed of the radicals *social entrepreneurial intentions* and *social entrepreneurship*, demonstrating the interconnection of these terms with each other. The *developing country and Iran* cluster has a high degree of density due to the theme being well developed and having low centrality. The themes of *entrepreneurial intention*, *theory of planned behaviour* and *entrepreneurship education* are well developed and play a relevant role in the research field.

2.3. Scientific Mapping—Intellectual Structure

Co-Citation Network—Papers

Figure 7 shows the co-citation network of the 50 most cited works. In this image, it is possible to highlight the red cluster, and in it, there are two relevant works. The first is the article by Ajzen (1991), which introduces the Theory of Planned Behaviour widely applied to predict entrepreneurial intention and was chosen as the object of study in our research. The second is the work by Liñán and Chen (2009), which introduces the Entrepreneurial Intentions Questionnaire, an instrument recurrently used to collect research data.

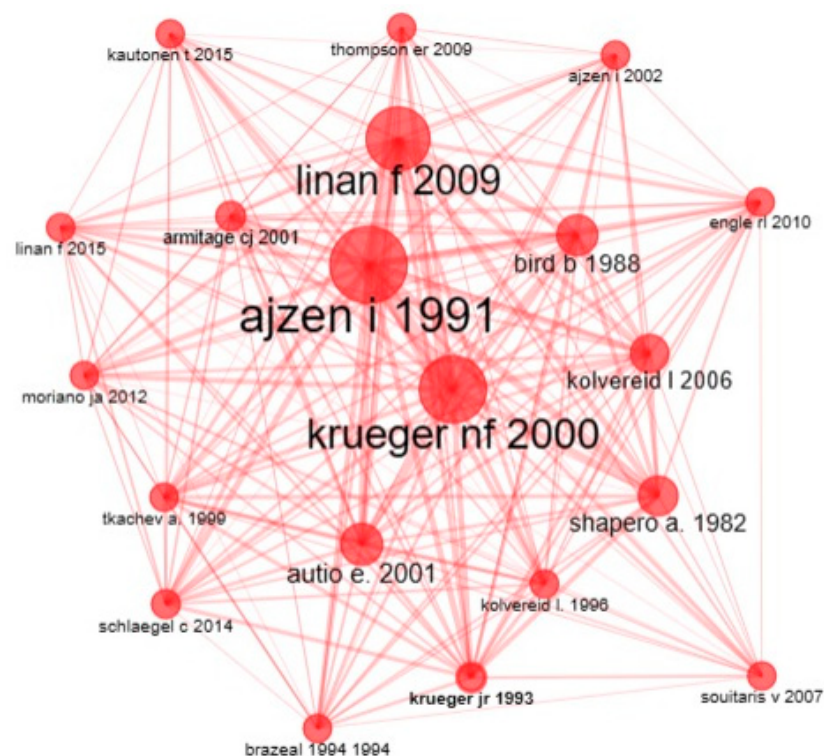


Figure 7. Co-citation network—papers.

2.4. Systematic Analysis

The first stage of this analysis aims to understand how the literature understands the relationship between antecedents (ATE, PBC or SE, and NS) and entrepreneurial intention according to Ajzen's TPB (Ajzen 1991) by geographic region and subsequently reports which situational and contextual predictors were included in the theory seeking to increase its predictive power. It is worth mentioning that the statistical division of geographic regions followed the *Standard Country or Area Codes for Statistical Use*, UN standard M49, published online on the UN's website.

2.4.1. Africa

The results for Africa show that all studies found a significant relationship between ATE and EI (Table 1). As for the PBC variable, it is important to note that the study by Chukwuma-Nwuba (2018) excluded PBC from the analysis, and Amofah et al. (2020)

replaced PBC with SE. However, there is a positive relationship between PBC and IE, although the study that analysed SE showed a non-significant relationship between SE and IE. Finally, only [Agolla et al. \(2019\)](#) were unable to find a significant relationship between SN and IE. However, their work concluded that NS has a significant relationship with PBC and a non-significant relationship with ATE, unlike Chukwuma-Nwuba's work ([Chukwuma-Nwuba 2018](#)), in which a significant relationship between NS and ATE was found.

Table 1. Studies analysed in Africa.

Year	Authors	Article Title	Country(ies)	Sample (Students)	Analysis Technique
2018	Chukwuma-Nwuba, EO	The influence of culture on entrepreneurial intentions: A Nigerian university graduates' perspective	Nigeria	409	SEM
2019	Agolla, JE; Monametsi, GL; Phera, P	Antecedents of entrepreneurial intentions amongst business students in a tertiary institution	Botswana	245	SEM
2020	Amofah, K; Saladrighes, R; Akwaa-Sekyi, EK	Entrepreneurial intentions among MBA students	Ghana	159	SEM
2022	Idris, MO; Adeboye, BS; Adeyemi, OA; Abanikannda, MO; Lawal, NA; Lawal, MO	Assessment of Engineering Entrepreneurial Intentions Among Engineering Students of Osun State University, Nigeria	Nigeria	170	Multiple regression

2.4.2. Americas

Of the eight studies analysed in America, seven concluded that there was a significant relationship between ATE and IE, the exception being the study by [Velástegui and Chacón \(2021\)](#) (Table 2). Furthermore, all studies found a positive relationship between PBC and EI, including [Laguía et al. \(2017\)](#) and [Velástegui and Chacón \(2021\)](#), who replaced PBC with SE, and [Zhang et al. \(2015\)](#), who replaced the variable with Controlled Behaviour. It is observed that [Arango-Botero et al. \(2020\)](#) chose to exclude PBC from the study. The NS analysis, on the other hand, was not as balanced; [Arango-Botero et al. \(2020\)](#); [Rodriguez-Gutierrez et al. \(2020\)](#); [Marcon et al. \(2021\)](#); and [do Nascimento Silva et al. \(2022\)](#) did not find a significant relationship between SN and EI.

Table 2. Studies analysed in the Americas.

Year	Authors	Article Title	Country(ies)	Sample (Students)	Analysis Technique
2015	Zhang, PY; Wang, DYD; Owen, CL	A Study of Entrepreneurial Intention of University Students	USA	275	SEM
2017	Laguia, A; Moriano, JA; Molero, F; Gamez, JA	Validation of the Entrepreneurial Intention Questionnaire in a Sample of University Students from Colombia	Colombia	316	SEM
2018	Tarapuez, E; Guzman, B; Parra, R	Determinants of entrepreneurial intention in Latin America	Latin America	2.120	Multiple correspondence analysis and logistic regression
2020	Arango-Botero, D; Arias, MLB; Montoya, MH; Valencia-Arias, A	Determinants of Entrepreneurial Intention among Engineering Students Based on Structural Equation Modeling	Colombia	636	SEM
2020	Rodriguez-Gutierrez, P; Cabeza-Ramirez, LJ; Munoz-Fernandez, GA	University Students' Behaviour towards Entrepreneurial Intention in Ecuador: Testing for the Influence of Gender	Ecuador	740	SEM
2021	Marcon, DL; Silveira, A; Frizon, JA	Entrepreneurial intention and the influence of planned behavior and human values theories	Brazil	371	Multiple linear regression

Table 2. Cont.

Year	Authors	Article Title	Country(ies)	Sample (Students)	Analysis Technique
2021	Velastegui, OV; Chacón, SC	Emotional competencies and entrepreneurial intention: An extension of the theory of planned behavior case of Ecuador	Ecuador	693	SEM
2022	Silva, LD; Barroso, EDS; Teixeira, LIL; de Oliveira, MAC	To undertake or not? That is the question! Analysis of the entrepreneurial intention of university students from a federal teaching institution	Brazil	209	SEM

2.4.3. Asia

In the analysis of Asia (Table 3), it is important to highlight that the studies by [Moriano et al. \(2012\)](#) and [Duong et al. \(2021\)](#) analysed students from both Asian and European countries; therefore, our analysis separated the samples by Asian and European countries and included the results according to the analysed region. In this region, only the study by [Saleem et al. \(2018\)](#) did not find a significant relationship between ATE and IE. Again, the analysis of the PBC variable was not standardised. In Asia, the studies by [Saleem et al. \(2018\)](#) and [Moriano et al. \(2012\)](#) chose to replace PBC with SE, while [Anjum et al. \(2018\)](#), [Doanh and Bernat \(2019\)](#), [Wu et al. \(2020\)](#), and [Doanh \(2021\)](#) analysed both PBC and SE in their studies. All studies demonstrated a significant relationship between PBC and EI, including those that replaced this variable with SE. The four studies that jointly analysed PBC and SE also found a significant relationship between SE and IE. Of the nineteen studies analysed here, six did not find a significant relationship between NS and EI, of which four observed a positive relationship between NS and ATE and three between NS and PBC.

Table 3. Studies analysed in Asia.

Year	Authors	Article Title	Country(ies)	Sample (Students)	Analysis Technique
2016	Trivedi, R	Does university play significant role in shaping entrepreneurial intention? A cross-country comparative analysis	India, Malaysia, and Singapore	1097	SEM
2017	Karimi, S; Biemans, HJA; Mahdei, KN; Lans, T; Chizari, M; Mulder, M	Testing the relationship between personality characteristics, contextual factors and entrepreneurial intentions in a developing country	Iran	331	SEM
2017	Trivedi, RH	Entrepreneurial-intention constraint model: A comparative analysis among post-graduate management students in India, Singapore and Malaysia	India, Singapore, and Malaysia	1.097	SEM
2018	Anjum, T; Sharifi, S; Nazar, N; Farrukh, M	Determinants of entrepreneurial intention in perspective of Theory of Planned Behaviour	Pakistan	251	SEM
2018	Luc, PT	The Relationship between Perceived Access to Finance and Social Entrepreneurship Intentions among University Students in Vietnam	Vietnam	193	SEM
2018	Saleem, F; Adeel, A; Ali, R; Hyder, S	Intentions to adopt ecopreneurship: Moderating role of collectivism and altruism	Pakistan	292	Multiple linear regression
2019	Doanh, DC; Bernat, T	Factors Related to the Intention of Starting a Business: A Study Among Students in Vietnam	Vietnam	663	SEM
2019	Usman, B; Yennita	Understanding the entrepreneurial intention among international students in Turkey	Turkey	122	SEM
2020	Karimi, S; Makreet, AS	The Role of Personal Values in Forming Students' Entrepreneurial Intentions in Developing Countries	Iran and Afghanistan	452	SEM

Table 3. Cont.

Year	Authors	Article Title	Country(ies)	Sample (Students)	Analysis Technique
2020	Lingappa, AK; Shah, A; Mathew, AO	Academic, Family, and Peer Influence on Entrepreneurial Intention of Engineering Students	India	210	SEM
2020	Ma, L; Lan, ZZ; Tan, R	Influencing Factors of Innovation and Entrepreneurship Education Based on the Theory of Planned Behavior	China	469	
2019	Nasar, A; Kamarudin, S; Rizal, AM; Ngoc, VTB; Shoaib, SM	Short-Term and Long-Term Entrepreneurial Intention Comparison between Pakistan and Vietnam	Pakistan and Vietnam	447	SEM
2020	Nguyen, PM; Dinh, VT; Luu, TMN; Choo, Y	Sociological and theory of planned behaviour approach to understanding entrepreneurship: Comparison of Vietnam and South Korea	Vietnam and South Korea	1150	SEM
2020	Wu, WH; Wei, CW; Yu, MC; Kao, HY	Exploring Factors Surrounding Students' Entrepreneurial Intentions in Medical Informatics: The Theory of Planning Behavior Perspective	Taiwan	120	SEM
2021	Doanh, DC	The moderating role of self-efficacy on the cognitive process of entrepreneurship: An empirical study in Vietnam	Vietnam	2.218	SEM
2021	Hoda, N; Ahmad, N; Gupta, SL; Alam, MM; Ahmad, I	Application of Entrepreneurial Intention Model in Comparative International Entrepreneurship Research: A Cross-Cultural Study of India and Saudi Arabia	India and Saudi Arabia	535	SEM
2021	Nguyen, TT; Phan, HTT; Pham, VT	Impact of creativity on student entrepreneurial intention	Vietnam	703	SEM
2022	Rijati, N; Purwitasar, D; Sumpeno, S; Purnomo, MH	A Rule-Generation Model for Class Imbalances to Detect Student Entrepreneurship Based on the Theory of Planned Behavior	Indonesia	336	Decision tree
2012	Moriano, JA; Gorgievski, M; Laguna, M; Stephan, U; Zarafshani, K	A Cross-Cultural Approach to Understanding Entrepreneurial Intention	Germany, India, Iran, Poland, Spain, and The Netherlands	200	SEM
2021	Duong, CD; Le, TL; Ha, NT	The Role of Trait Competitiveness and Entrepreneurial Alertness in the Cognitive Process of Entrepreneurship Among Students: A Cross-Cultural Comparative Study Between Vietnam and Poland	Vietnam and Poland	803	SEM

2.4.4. Europe

In the analyses of Europe (Table 4), it is important to highlight that the studies by [Moriano et al. \(2012\)](#) and [Duong et al. \(2021\)](#) analysed students from both Asian and European countries; therefore, our analysis separated the samples by Asian and European countries and included the results according to the analysed region. Of the nineteen studies analysed in Europe, only [El Bouk et al. \(2022\)](#) did not find a significant relationship between ATE and EI. As for the analysis of the PBC variable, the studies by [Wach and Wojciechowski \(2016\)](#) replaced the variable with Entrepreneurial capacity, while [Širola \(2020\)](#) replaced PBC with Entrepreneurial ability. Furthermore, [Zovko et al. \(2020\)](#); [El Bouk et al. \(2022\)](#); and [Moriano et al. \(2012\)](#) replaced PBC with SE. Seventeen of the nineteen studies analysed found a significant relationship between PBC/SE and EI, with the exception of [Jovanov Apasieva et al. \(2021\)](#) and [Zovko et al. \(2020\)](#), who analysed SE. The study by [Arranz et al. \(2017\)](#) excluded the NS variable from the analysis, while [El Bouk et al. \(2022\)](#) replaced NS with Perceived Family Support. Ten studies out of the eighteen that tested the relationship between SL and EI did not find a significant relationship between these variables.

Table 4. Studies analysed in Europe.

Year	Authors	Article Title	Country(ies)	Sample (Students)	Analysis Technique
2014	Kuttim, M; Kallaste, M; Venesaar, U; Kiis, A	Entrepreneurship education at university level and students' entrepreneurial intentions	Europe	55,781	Binary logistic regression
2015	Varamaki, E; Joensuu, S; Tornikoski, E; Viljamaa, A	The development of entrepreneurial potential among higher education students	Finland	197	SEM
2016	Politis, K; Ketikidis, P; Diamantidis, AD; Lazuras, L	An investigation of social entrepreneurial intentions formation among South-East European postgraduate students	Greece	111	Multiple linear regression and factor analysis
2020	Thelken, HN; de Jong, G	The impact of values and future orientation on intention formation within sustainable entrepreneurship	The Netherlands and Germany	407	SEM
2022	Lopes, JM; Laurett, R; Ferreira, JJ; Silveira, P; Oliveira, J; Farinha, L	Modeling the predictors of students' entrepreneurial intentions: The case of a peripheral European region	Portugal	594	SEM
2016	Misoska, AT; Dimitrova, M; Mrsik, J	Drivers of entrepreneurial intentions among business students in Macedonia	Macedonia	213	SEM
2016	Varamaki, E; Joensuu, S; Viljamaa, A	Starting up a firm or not: Differences in the antecedents of entrepreneurial intentions	Finland	3754	Linear regression
2016	Wach, K; Wojciechowski, L	Entrepreneurial Intentions of Students in Poland in the View of Ajzen's Theory of Planned Behaviour	Poland	719	Correlation and multivariate analysis
2017	Arranz, N; Ubierna, F; Arroyabe, MF; Perez, C; de Arroyabe, JCF	The effect of curricular and extracurricular activities on university students' entrepreneurial intention and competences	Spain	1475	T-test and ANOVA
2020	Hueso, JA; Jaen, I; Linan, F; Basuki, W	The influence of collectivistic personal values on the formation of entrepreneurial intentions	United Kingdom and Spain	413	SEM
2020	Širola, D	Determinants of entrepreneurial intentions: Empirical evidence from Croatian perspective	Croatia	194	ANOVA
2020	Zovko, L; Dulcic, Z; Bilic, I	Determinants of students' entrepreneurial intention: An empirical research	Croatia	160	SEM
2021	Draksler, TZ; Sirec, K	The Study of Entrepreneurial Intentions and Entrepreneurial Competencies of Business vs. Non-Business Students	Slovenia	837	Correlation and regression analysis
2021	Jovanov Apasieva, T; Rajh, E; Budak, J; Davcev, L	Entrepreneurial intentions of students at private universities in transition economies	North Macedonia and Croatia	400	Multiple regression analysis
2021	Margaca, C; Hernandez-Sanchez, BR; Cardella, GM; Sanchez-Garcia, JC	Impact of the Optimistic Perspective on the Intention to Create Social Enterprises: A Comparative Study Between Portugal and Spain	Spain and Portugal	1476	SEM
2022	Barba-Sanchez, V; Mitre-Aranda, M; del Brio-Gonzalez, J	The entrepreneurial intention of university students: An environmental perspective	Spain	1337	SEM
2022	El Bouk, F; Van Geel, M; Vedder, P	Entrepreneurship: An attractive career path for immigrant vocational students in the Netherlands? The role of negative and positive stimulating factors	The Netherlands	260	Hierarchical multiple regression
2022	Nitu-Antonie, RD; Feder, ES; Stamenovic, K; Brudan, A	A Moderated Serial-Parallel Mediation Model of Sustainable Entrepreneurial Intention of Youth with Higher Education Studies in Romania	Romania	211	SEM
2012	Moriano, JA; Gorgievski, M; Laguna, M; Stephan, U; Zarafshani, K	A Cross-Cultural Approach to Understanding Entrepreneurial Intention	Germany, India, Iran, Poland, Spain, and The Netherlands	874	SEM
2021	Duong, CD; Le, TL; Ha, NT	The Role of Trait Competitiveness and Entrepreneurial Alertness in the Cognitive Process of Entrepreneurship Among Students: A Cross-Cultural Comparative Study Between Vietnam and Poland	Vietnam and Poland	698	SEM

Combining the results of the research carried out, it was possible to obtain an overview of entrepreneurial intention by geographic region. All the studies analysed in Africa showed a relationship between ATE and EI; the same result could be identified in the relationship of PBC/SE with EI in the regions of America and Asia; finally, Africa had the best relationship

between NS and EI. Below, we present a graph analysing the results of the studies in our collection (Figure 8).

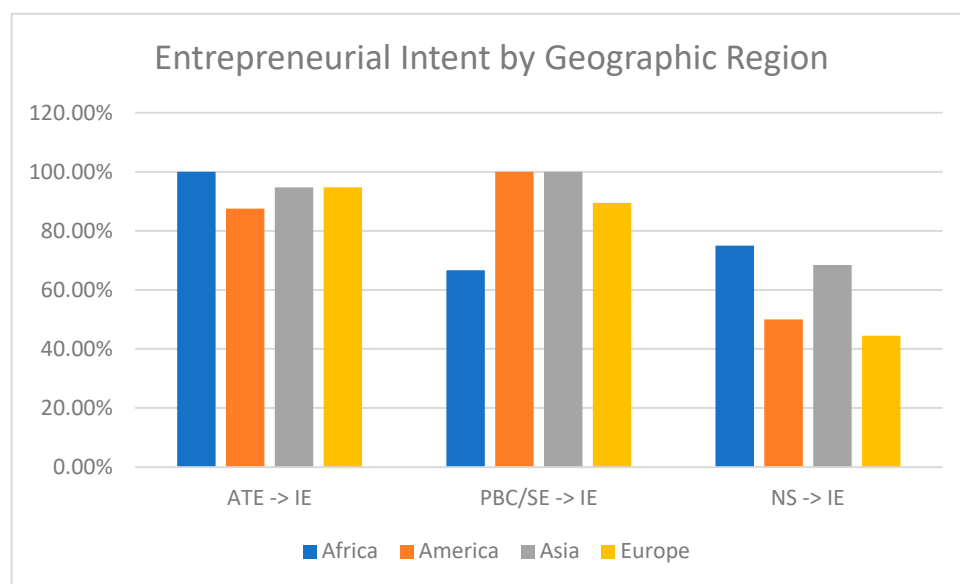


Figure 8. Entrepreneurial intention by geographic region: study results.

2.4.5. Added Variables

TPB is widely applied in studies to understand intention (Krueger et al. 2000), with its power to explain the variance of entrepreneurial intention between 20 and 65% (Laguía et al. 2017). However, to increase the predictability and generalisation of the theory, it is necessary to understand the factors not covered by it, so situational and contextual factors must be studied. We will thus explain the variables most often included in the TPB according to our collection of selected articles.

Locus of Control appears in four studies: two from Europe, one from Asia, and one from Africa. The study by Jovanov Apasieva et al. (2021), conducted in North Macedonia and Croatia using multiple regression analysis, concluded that Locus of Control was not significantly related to EI. Wach and Wojciechowski (2016), who developed their research in Poland using the Correlation Analysis and Multivariate Analysis methods, concluded that students who think or plan to become entrepreneurs in the future are characterised by lower Locus of Control variables. Karimi et al. (2017) developed research in Iran using SEM and found that Locus of Control is significantly related to ATE and PBC. Amofah et al. (2020) showed that Locus of Control has a significant but negative relationship with EI. It is worth noting that Amofah et al. (2020) conducted the research in Ghana and also used SEM.

Another variable worth mentioning is Perceived Barriers. Wach and Wojciechowski (2016) observed that students inclined to become entrepreneurs have the lowest levels in the Perceived Barriers variable. Karimi et al. (2017) also studied this variable and concluded that Perceived Contextual Barriers were not only indirectly (by relating them to PBC) but also directly and negatively linked to EI. Trivedi (2017) found a significant relationship between Endogenous Barriers and both PBC and ATE in the three countries where he developed his research—India, Singapore, and Malaysia—with analyses by means of SEM. Contrary to this finding, Jovanov Apasieva et al. (2021) concluded that EI was significantly and positively affected by Perceived Barriers. Rodríguez-Gutiérrez et al. (2020) studied Institutional Barriers in a sample from Ecuador using SEM, and the results did not indicate that Institutional Barriers influence the antecedents of EI.

The Propensity to Take Risks is also highlighted by its appearance in six studies. Karimi et al. (2017) found that Risk is only significantly related to PBC and marginally to ATE. Anjum et al. (2018) developed their research in Asia—in Pakistan—with SEM, and

their results are consistent with this idea. The authors found that Perceived Risk negatively affects ATE and PBC and concluded that self-efficacy negatively affects Perceived Risks. For Zovko et al. (2020), the Propensity to Risk is positively related to the EI of Croatian students, according to their research analysed with SEM. A similar result was found by Zhang et al. (2015), who found in a survey carried out in the US with SEM that Short-Term Risk Preference is also positively associated with EI. Wach and Wojciechowski (2016) noticed that students who have EI have a greater Propensity to Risk. Contrary to these results, Jovanov Apasieva et al. (2021), using multiple regression analysis, concluded that Propensity to Take Risks was not significantly related to EI.

Finally, Support was studied in several ways. Amofah et al. (2020) concluded that Environmental Support has a significant relationship with EI, as did Misoska et al. (2016), who showed a direct link between Knowledge of Support Systems and EI. Rodriguez-Gutierrez et al. (2020) found that Organisational Support has a positive effect on ATE and PBC. Karimi et al. (2017) found that Perceived Support directly relates only to PBC, as did Trivedi (2016), who concluded that University Environment and Support have a statistically significant relationship only with PBC. Unlike in the latter study, Trivedi (2017) found a relationship between the University Environment and Support and ATE; however, the same was not significant with PBC. Lingappa et al. (2020) found that Institutional Support showed a positive effect on ATE and had no significant impact on PBC or SN. Finally, Jovanov Apasieva et al. (2021) concluded that Perceived Supporting Factors were not significantly related to EI.

3. Methodology

This literature review seeks to recognise the existing interpretative unity and diversity, expand and branch out the interpretative analysis, and abstract and synthesise the research (Echer 2001).

This article works with an integrative literature review, aiming to contribute to the enrichment of knowledge regarding the explored theme through the gathering and synthesis of research results on a theme or question in a systematic, orderly, and comprehensive way (Ercole et al. 2014). Due to the didactic purposes of the development of this literature review, basic research was used as its nature.

Through a literature review, one can obtain relevant information and data to understand and describe a process in more detail. Exploratory research is a type of research whose objective is to explore a theme or problem in depth (dos Santos 2016, p. 183). Thus, it was observed that this research is classified as exploratory research. That is, this study was developed in such a way that it was possible to achieve the established objective. For better exploration, therefore, it was observed that this research is classified as exploratory due to the use of bibliographic sources to survey the research field established for study in this literature review.

As mentioned above, a literature review will be developed based on scientific articles; a qualitative approach will be used for data processing due to the interpretation that will be made about the bibliographic sources explored; and a quantitative approach will be used for bibliometric analysis and scientific mapping. Therefore, the approach used is mixed.

To carry out our review, steps were followed based on Whitemore's (Whitemore 2005) integrative review methodology. The stages of this review included (i) identification of a gap in the literature, (ii) database search, (iii) quality assessment (inclusion and exclusion criteria), (iv) data analysis (bibliometrics, scientific mapping, and systemic analysis), and (v) presentation of results. To search for articles, the Web of Science (WoS) database was used on 29 December 2022 and 24 January 2023 (Figure 9).

It should be noted that it is up to the entrepreneurial university to expand ideas for practical application, leverage knowledge, establish new entities, and manage risks (Amaral and Magalhães 2002). Thus, the first keyword of this work is *entrepreneurial university*. Seeking to understand the role of the country within our research, the second group of words comprises *country* OR *nationality* OR *ethnicity* OR *multicultural*. As for the

entrepreneurial intention, we opted for a cognitive approach and works that used TPB by Ajzen (1991). Thus, this group of words includes *Theory of Planned Behaviour Model* and *Ajzen*. To cover works focused on entrepreneurial intentions, the chosen population was students, as this group is likely to become involved in entrepreneurial activities in the future (Zovko et al. 2020). Therefore, the last group was composed of the word *student*.

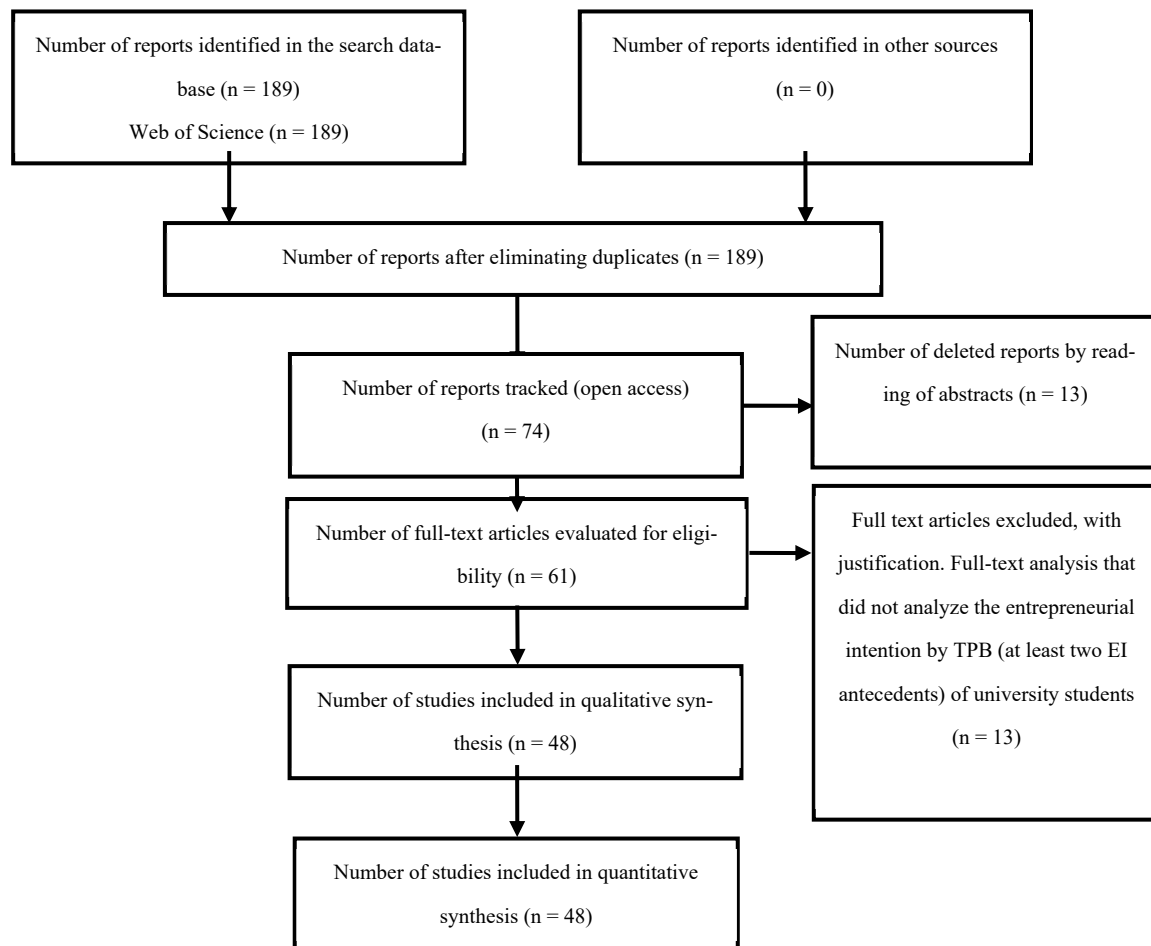


Figure 9. Literature review flow.

The search for articles respected the following inclusion parameters: published works fully available in the chosen database; works published until the year 2022 that already have approval by the scientific community; and works that address at least two TPB antecedents. For the exclusion criteria, the following parameters were observed: works that do not use the TPB or feature non-university students as sample subjects will be excluded, as will published works other than articles.

The study collection consisted of all the literature related to the study topic indexed in the Web of Science. The selection was carried out based on careful consideration of the articles found in the database, selecting only the literature that met the inclusion and exclusion criteria defined in this study. Only publications that answered our study question and were published until 2022 were included. The search resulted in 74 articles. After selecting the documents based on reading the abstracts and, later, the complete article, the final collection was reached. The articles were selected based on the variables of interest, ending with 48 articles.

This research has a degree of reliability based on the authority and relevance of the chosen documents, since the presentation of the results is based on articles in the literature

inserted in a solid database. It is noteworthy that for more than 40 years, WoS was the largest producer of bibliographic databases (Archambault et al. 2009).

In general, the objective was to understand the entrepreneurial intention of the students, considering the geographic region in light of the Theory of Planned Behaviour. For this, the documents related to the theme were explored through an integrative literature review.

Content Analysis

Document analysis was performed with the help of the R-Bibliometrix package in three steps: bibliometric analysis, network analysis, and systematic analysis of the 48 articles.

4. Conclusions

The objective of this work was to understand the entrepreneurial intentions of students, considering the geographic region and a literature review. The main conclusions are below. Studies on these topics began timidly in 2012, but only in the last seven years have they gained preeminent concern. The literature on the themes comes from authors and articles from developed countries in Europe; it is mainly produced by and for economically established countries. Thus, it is necessary to develop the themes and carry out collaborations, expanding them to other circumstances/countries yet un(der)-studied.

This analysis also presents a review of the results of several studies on entrepreneurial intention in different regions of the world. In general, the analysed studies found a significant relationship between entrepreneurial attitude (ATE) and entrepreneurial intention (IE). Furthermore, most of the analysed studies also found a significant relationship between Perceived Behavioural Control (PBC) and EI. The relationship between subjective norms (SNs) and EI was not as balanced. The analysis also revealed some differences between the studies regarding the standardisation of the investigated variables. For example, in some studies, the Perceived Behavioural Control variable was replaced by self-efficacy or other variables. Other studies excluded or did not find a significant relationship between subjective norms and entrepreneurial intention. It is important to note that these exceptions must be analysed carefully, as they may influence EI differently, indicating both cultural differences, methodological differences, or differences in other variables that affect this relationship. As the lack of standardisation in the analyses of studies involving TPB, which consequently should cover the three antecedents of EI, makes it difficult for studies to have a holistic view on the subject, new studies including comprehensive regions should strive for uniformity in the applied methodology.

However, it was visible in the analysis of our collection of studies that Africans have a greater entrepreneurial attitude, while Americans display a lower one. It was also possible to observe that Americans and Asians have a better perception of their abilities to carry out entrepreneurial behaviour, unlike Africans, who have a low perception and control of entrepreneurial behaviour. Finally, Africans showed a better perception of social pressures to get involved in entrepreneurial activities, unlike Europeans, who showed less normative belief and motivation to conform to social pressures. Additional studies should try to understand what makes a region have a stronger motivational background and what practices/policies should be implemented or encouraged to foster the motivational background and thus encourage entrepreneurial behaviour through entrepreneurial intention. In this sense, future research should go deeper into the influence of social, cultural, and economic factors, such as government policies, level of economic development, access to financial resources, and local business cultures, among others.

On the other hand, situational factors should also be analysed along with motivational factors. Thus, regarding the variables added to the TPB, the presented analysis discusses different studies that investigated the relationship between variables such as Locus of Control, Perceived Barriers, Propensity to Take Risks, and Support with entrepreneurial intention (EI) in different countries. The results of these studies vary. For example, Locus of Control was significantly related to EI in some studies but not in others. The same happened with the other variables. The analysis highlights that Support appeared in different ways in the

studies, showing that different types of support (environmental, organisational, university) can have different effects on EI. Most of the studies used structural equation modelling in their analyses; however, the analyses were carried out with different combinations of variables added. Thus, in the joint analysis, the influence of a variable present in one study and absent in another can influence EI differently. Consequently, we noticed a lack of analyses that illustrate the complexity of factors that influence EI and the importance of considering cultural and contextual differences in research on this topic. Thus, these variables point more to suggestions for future research than to consolidated results in the literature.

In general, this review provides a broad and comparative view of the results of different studies regarding the relationship between key variables of entrepreneurship and suggests that entrepreneurial attitude, Perceived Behavioural Control, and subjective norms are important factors in promoting entrepreneurial intention in different geographic regions. However, it is important to note that the methodology of the studies included in our analysis may vary and that the conclusion of which important variables were not included in the theory is not yet consolidated.

Avenues for Future Research

There are geographic gaps in the object of study since most studies are concentrated in Europe and Asia. Furthermore, the comparison of nationalities or the study of single nationalities, rather than a study with differences in nationalities in each work, led to frustration on the issue. Thus, this work opens the way for future research that expands the geographic framework for all paths and passages to an ethnographic field with the character of prolonged study in the entrepreneurial university and in the surrounding environment, encompassing native and immigrant university students. For that, it is necessary to establish cooperation, develop themes for different countries and broad contexts, and explore all the propellers of an entrepreneurial university. Another point to be considered was the lack of standardisation in the studies carried out. The studies were based on the TPB, with a significant number of articles using measure scales from the works of Liñán and Chen; additionally, most of the studies used the Structural Equation Methodology. We encourage further studies to continue applying this methodology.

Finally, the authors highlight that the development of the present study allowed an analysis of how the antecedents of the entrepreneurial intention of university students behave by geographic region and allowed us to understand which variables were included to optimise the Theory of Planned Behaviour. This work provided bibliometric analysis, scientific mapping, and systematic analysis. However, it is advisable to further develop the topic for a more focused field study.

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