

# Individual and contextual predictors of entrepreneurial intention among undergraduates: a literature review

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## Abstract

The aim of this article was to conduct a literature review to identify in empirical studies major individual and contextual predictors of Entrepreneurial Intent (EI) among college students. The theory of planned behavior was used, taking into account research that investigates students' attitudinal disposition to develop their own business. The search was made using the keywords "entrepreneurial intention", in the main international and national journals of entrepreneurship, psychology, organization, and administration and also in the SciELO database. The review covered the period between 2004-2015, and 60 articles were analyzed. The analysis showed an increase of 41% in EI studies between 2004 and 2015 in different countries and continents, which shows the increasing interest in the subject. The main individual predictors are: personal traits, personal fulfillment motivation, positive attitude, self-efficacy, perceived control, internal locus of control, perception of barriers, and creativity. Contextual predictors are the families and networks of friends, which operate as role models and support for the development of the business. Regarding EE (entrepreneurial education), the results are inconclusive, especially taking into account the context. The article concludes with some limitations of the study and points to be included in the construction of a research agenda.

**Keywords:** Entrepreneurial Intent. Entrepreneurship. Literature review.

## *Preditores individuais e contextuais da intenção empreendedora entre universitários: revisão de literatura*

### Resumo

Esta revisão de literatura teve por objetivo identificar em estudos empíricos os principais preditores individuais e contextuais da intenção empreendedora (IE) entre estudantes universitários. Utilizou-se a teoria do comportamento planejado, levando em conta pesquisas sobre a disposição atitudinal do estudante para desenvolver o próprio negócio. A busca foi realizada mediante as palavras-chave "intenção empreendedora" e "entrepreneurial intention" nos principais periódicos internacionais e nacionais das áreas de empreendedorismo, psicologia, organizações e administração e também na base de dados Scientific Electronic Library Online (SciELO). A revisão abrangeu o período de 2004 a 2015. Foram analisados 60 artigos. Constatou-se ter havido um crescimento de 41% dos estudos sobre IE entre 2004 e 2015, em diversos países e continentes, o que revela o aumento do interesse no tema. Os principais preditores individuais são: traços pessoais, motivações de realização pessoal, atitude positiva, autoeficácia, percepção de controle, locus de controle interno, percepção de barreiras e criatividade. Os preditores contextuais são as famílias e a rede de amigos, as quais operam como modelos a ser seguidos e como suporte no desenvolvimento do negócio. Sobre a educação empreendedora (EE), os resultados são inconclusivos, especialmente levando-se em conta o contexto. Finaliza-se com algumas limitações do estudo e pontos a ser incluídos na construção de uma agenda de pesquisa.

**Palavras-chave:** Intenção empreendedora. Empreendedorismo. Revisão de literatura.

## *Predictores individuales y contextuales de la intención emprendedora entre universitarios: revisión de literatura*

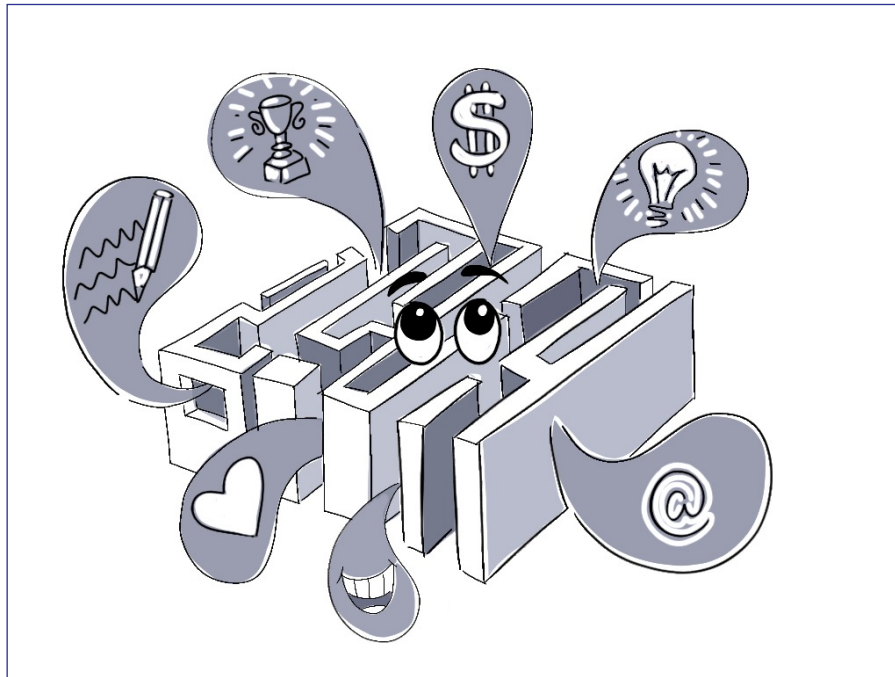
### Resumen

Esta revisión de literatura tuvo como objetivo identificar en estudios empíricos los principales predictores individuales y contextuales de la intención emprendedora (IE) entre estudiantes universitarios. Se utilizó la teoría del comportamiento planeado, teniendo en cuenta investigaciones acerca de la disposición actitudinal del estudiante para desarrollar su propio negocio. La búsqueda se realizó por medio de las palabras clave "intención emprendedora" y "entrepreneurial intention" en las principales revistas internacionales y nacionales de las áreas de espíritu empresarial, psicología, organizaciones y administración y también en la base de datos *Scientific Electronic Library Online* (SciELO). La revisión abarcó el período entre 2004 y 2015. Se analizaron 60 artículos. Se constató que hubo un aumento de 41% de los estudios acerca de IE entre 2004 y 2015, en diferentes países y continentes, lo que demuestra el creciente interés en el tema. Los principales predictores individuales son: rasgos personales, motivaciones de realización personal, actitud positiva, autoeficacia, percepción de control, *locus* de control interno, percepción de barreras y creatividad. Los predictores contextuales son las familias y la red de amigos, las cuales funcionan como modelos a seguir y como soporte para el desarrollo del negocio. Acerca de la educación emprendedora (EE), los resultados no son concluyentes, sobre todo teniendo en cuenta el contexto. Se finaliza con algunas limitaciones del estudio y puntos a incluir en la construcción de una agenda de investigación.

**Palabras-clave:** Intención emprendedora. Espíritu empresarial. Revisión de literatura.

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## INTRODUCTION

This article presents and discusses a review of empirical studies on individual predictors of entrepreneurial intent (EI) of university students. Researches on entrepreneurship are gaining relevance around the world, including Brazil. These studies are adopting different approaches from multiple disciplines. This plurality of disciplinary perspectives has contributed positively and negatively to the advancement of research. Among the group of disciplines adding very useful contributions to the field, and which is very widespread, psychology, with the EI concept, is taking center stage.

Despite the prominent place and the growth of international works, in Brazil there are empirical and theoretical gaps in the field of study about what drives people to launch a business and about the effects of entrepreneurship education (EE). Searches using the keywords “entrepreneurial intent” and “entrepreneurship education” in the Scientific Electronic Library Online (SciELO) database led to the identification of a single empirical work, by Lima, Lopes, Nassif et al. (2015), relating EE and EI.

In considering the most prominent personal and contextual variables in the research, this review of Brazilian and international empirical studies on the EI of students seeks to help reduce the national theoretical gap, redefine strategies and policies, including public ones, capable of advancing solid initiatives to encourage entrepreneurship, to support more effective educational initiatives, and to broaden the thinking on professional choices (LIÑÁN and FAYOLLE, 2015).

The review by Liñán and Fayolle (2015) organizes the EI literature into 5 groups: (i) studies that focus on crucial aspects of the EI model; (ii) studies that emphasize the individual variables that model EI; (iii) studies that interrelate EE and EI; (iv) the relationship between contextual variables and EI; and (v) relationships between EI and the entrepreneurship process.

The literature review presented here focuses specifically on the EI of students and involves only empirical work. Thus, it differs from the review by Liñán and Fayolle (2015), which encompasses EI as a whole.

\* Image source: Drawing: Hideraldo Beline; Layout: André Luna.

The article is structured as follows: first, the concept of entrepreneurial intention is delimited; then the method that produced the analyzed data is described; third, the results of the literature review are described; and finally, the discussions and conclusions highlight the main findings, suggesting new research directions and pointing out the limitations of the study.

## THEORETICAL FRAMEWORK: ENTREPRENEURIAL INTENT

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EI can be defined as a personal projection of future actions and goals to be implemented to develop one's own business (AJZEN, 1991; FINI, GRIMALDI, MARZZOCHI et al., 2009); as a conscious state of mind that precedes action and directs it toward the goal of creating a business (SHOOK, PRIEM and MCGEE, 2003); as the personal conviction of an individual who intends to open a new business (THOMPSON, 2009); and also as a state of mind in which the person's attention is directed towards the attainment of a goal (BIRD, 1988). It is assumed that EI precedes the decision to create the business, although it is recognized that the intention does not always result in the desired behavior (CARVALHO and GONZÁLEZ, 2006; DAVIDSSON, 1995).

Pioneering studies on EI date back to the late 1980s, and since then the subject has attracted interest from various scholars, including those from social psychology and cognitive psychology, aiming to understand the role of individual and contextual variables (LIÑÁN and FAYOLLE, 2015). The influence of EE on EI, in particular, has been researched more recently, and studies are also emerging that indicate differing behavioral motivations among entrepreneurs by country (BAE, QIAN, MIAO et al., 2014; PITTAWAY and COPE, 2007). In parallel with this flurry of knowledge accumulation, there is a diffusion of confusion, inaccuracies, misunderstandings, and new applications and specifications about the EI construct and its antecedents (LIÑÁN and FAYOLLE, 2015).

Brazil is an emerging country where the people, especially between 25 and 34 years of age, are engaging in opening new businesses for a host of reasons: autonomy, self-fulfillment, independence, frustration with employment, lack of attractive opportunities, social contribution towards the community in which they are included, among others. However, this engagement often occurs without reflections on the process of opening a company (GEM, 2014). For example, Couto, Mariano and Mayer (2010) showed that the entrepreneurial career is perceived as favorable, notwithstanding that 254 Brazilian students of the undergraduate program in administration at a federal university in the southern region of the country consider their knowledge limited concerning institutions and mechanisms in support of entrepreneurial practice. This perception seems to be related to the fact that the teaching of entrepreneurship, as well as other institutions supporting entrepreneurship, are still in their early stages in Brazil (FONTENELE, BRASIL and SOUSA, 2012).

Still in the Brazilian context, using a sample of 109 students from a federal education center in Bahia, Fontenele, Brasil and Sousa (2012) found that desire for independence and self-confidence were the main motivators of the entrepreneurial career. In the Americas, especially in Brazil, there is a strong EI among students; however, EE is still incipient in the academic environment, which explains the entrepreneurs' lack of knowledge about the nuances of starting a company, especially with regard to planning. In addition, students also highlight the obstacles to business creation, such as the tax burden, lack of support, as well as considering their knowledge limited about institutions and mechanisms to support entrepreneurial practice (COUTO, MARIANO and MAYER, 2010). In exploring the antecedents of EI among university students, Loiola, Gondim, Pereira et al. (2016) found evidence of the mediating role of attitude in the relations between motives of power, entrepreneurial learning, and perceived risk concerning EI.

## METHOD

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In this section the procedures adopted for the review of the empirical articles are described, including the selection of the keywords, the definition of the databases consulted, and the other treatment and data analysis procedures. Given the taxonomy defined by Liñán and Fayolle (2015), the keywords used in the database searches were in Portuguese and English language

(*intenção empreendedora* and entrepreneurial intention), and the predictive variables of EI (*educação empreendedora* and entrepreneurship education, *influência parental* and parental influence, *aspectos contextuais* and contextual aspects etc.).

A number of journals from all five continents were consulted (e.g., *Entrepreneurship: Theory and Practice*; *Journal of Applied Psychology*; *South Asian Academic Research Journals*; and *African Journal of Business & Management*).

In the case of Brazil, in addition to the SciELO database, the supplementary search strategy with the keywords “entrepreneurial intent”, “entrepreneurial career intention”, and “entrepreneurship”, in four management journals and three psychology journals, was used. Nothing was identified for the first two keywords. On entrepreneurship, the results were as follows: 38 articles in the *Revista de Administração Contemporânea* (RAC), 13 in *Organização e Sociedade* (O&S), 11 in the *Revista de Administração Pública* (RAP), 18 in the *Revista de Administração Mackenzie* (RAM), seven in the *Revista Psicologia: Organizações e Trabalho* (rPOT), zero in *Psicologia: Reflexão e Crítica*, and one in *Paidéia*. Reading the abstracts and the conclusions of these articles confirmed the existence of only one work using the EI construct, which had already been identified previously.

The database search procedures were put into practice between October 2014 and October 2015, covering the period from 2004 to 2015. More than 100 publications on EI were identified, with a focus on personal and contextual variables, mostly international and published in journals specializing in entrepreneurship and in psychology (e.g., *Entrepreneurship: Theory and Practice*, *Journal of Applied Psychology*), whose impact factors vary from 3.95 to 4.80. The Brazilian publication was found in the SciELO database, from the keyword “entrepreneurship education”. Additional search strategies were used. The references of all the empirical studies initially selected were checked to identify additional articles, and meta-analyses and systematic reviews were searched to identify other relevant studies.

Theoretical articles or those that reported research with non-student samples were excluded. Studies focusing on gender as the explanatory variable were also eliminated. Sixty (N=60) studies remained, as shown in Table 1, whose analysis covers a total sample of 88,036 individuals.

The articles were analyzed to identify methods and techniques for the treatment of data, antecedent variables, principal results, and future research agenda. We sought to follow the guidance of Torraco (2005) as well, developing an integrative review that, in addition to analyzing research methods, techniques, and results, introduces critical comments and advances in proposing new perspectives on the subject.

**Table 1**  
**Empirical studies analyzed**

Individual Level			
<b>Antecedents of entrepreneurial intent:</b> attitudes, perceived control, locus of internal control, risk propensity, personal values, self-efficacy, external and personal barriers, motivation, emotional intelligence, desirability, creativity, personal traits, conscientiousness, openness to experience, extraversion, stress tolerance.			
<b>Methods and techniques:</b> structural equations, ANOVA, regression analysis, correlations, descriptive statistics, content analysis, exploratory factor analysis, t-test, meta-analysis.			
Q	Authors	Country	Sample
1	Franke and Lüthje (2004)	Germany	107
2	Segal, Borgia and Schoenfeld (2005)	USA	114
3	Zhao, Hills and Siebert (2005)	USA	1,043
4	Fitzsimmons and Douglas (2005)	India, China, Thailand, Australia	414
5	Solesvik (2007)	Ukraine	192
6	Liñán (2008)	Spain	249
7	Liñán and Rodríguez-Cohard (2008)	Spain	354
8	Zampetakis, Kafetsios, Bouranta et al. (2009)	Greece	280

Continue

Q	Authors	Country	Sample
9	Liñán and Chen (2009)	Spain and Taiwan	519
10	Akmaliah and Hisyamuddin (2009)	Malaysia	1,357
11	Zhao, Seibert and Lumpkin (2010)	USA	15,423
12	Maalu, Nzuve and Magutu (2010)	Kenya	250
13	Olufunso (2010)	South Africa	701
14	Brandstätter (2011)	USA, Australia, China, India, Thailand etc.	5
15	Zellweger, Sieger and Halter (2011)	Austria, Belgium, Finland, Germany, New Zealand, Norway, Hungary, Switzerland	36,451
16	Zampetakis, Andriopoulos, Gotsi et al. (2011)	England	180
17	Sandhu, Fahmi and Riaz (2011)	Malaysia	267
18	Thrikawala (2011)	Sri Lanka	350
19	Moriano, Gorgievski, Laguna et al. (2012)	Germany, India, Iran, Poland, Spain, and the Netherlands	1,074
20	Achchuthan and Nimalathasan (2012)	Sri Lanka	6
21	Saeed, Nayyab, Rashied et al. (2013)	Pakistan	100
22	Lin, Carsrud, Jagoda et al. (2013)	Sri Lanka	353
23	Nabi and Liñán (2013)	Spain and Great Britain	619
24	Watchravesringkan, Hodges, Yurchisin et al. (2013)	USA	345
25	Sesen (2013)	Turkey	356
26	Dinis, Paço, Rodrigues et al. (2013)	Portugal	74
27	Moralista and Delariarte (2014)	Philippines	100
28	Mortan, Ripoll, Carvalho et al. (2014)	Spain and Portugal	394
29	Kebaili, Al-Subyae, Al-Qahtani et al. (2015)	Qatar	18
<b>Contextual level</b>			
<b>Antecedents of entrepreneurial intent:</b> entrepreneurship education, entrepreneurial competence, family, network of friends.			
<b>Methods and techniques:</b> structural equations, ANOVA, regression analysis, correlations, descriptive statistics, content analysis, exploratory factor analysis, t-test, focus group, data-based theory, meta-analysis, multivariate analysis, Mann-Whitney test.			
30	Kristiansen and Indarti (2004)	Indonesia and Norway	251
31	Carr and Sequeira (2007)	USA	308
32	Liñán and Santos (2007)	Spain	354
33	Radu and Loué (2008)	France	44
34	Van der Sluis, Van Praag, Vijverberg et al. (2008)	USA and Europe	100
35	Wu and Wu (2008)	China	150
36	Packham, Jones, Miller et al. (2010)	Poland, Germany, France	237
37	Barnir, Watson, Hutchins et al. (2011)	USA	393
38	Mushtaq, Hunjra, Niazi et al. (2011)	Pakistan	225
39	Bhandari (2012)	USA	390
40	Bosma, Hessels, Schutjens et al. (2012)	Netherlands	292
41	Ngugi, Gakure, Waithaka et al. (2012)	Kenya	133
42	Marques, Ferreira, Gomes et al. (2012)	Portugal	202

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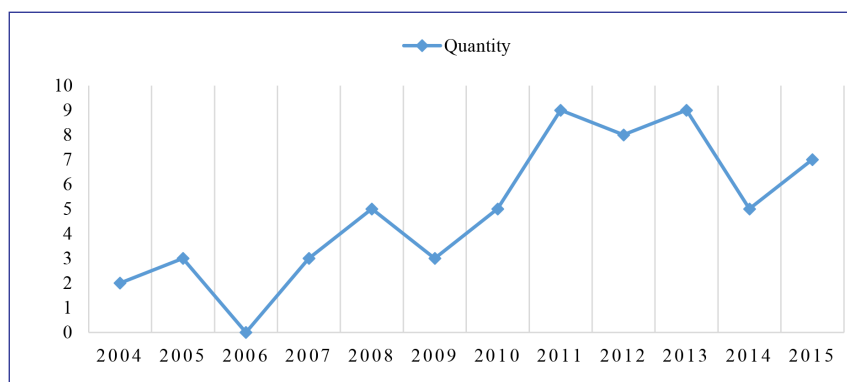
Q	Authors	Country	Sample
43	Gerba (2012)	Ethiopia	22
44	Lean (2012)	United Kingdom	128
45	Gielnik, Frese, Kahara-Kawuki et al. (2013)	Uganda	651
46	Solesvik (2012)	Ukraine	321
47	Jones and Colwill (2013)	United Kingdom	44
48	Støren (2014)	Norway	2,827
49	Smith, Williams, Yasin et al. (2014)	United Kingdom	100
50	Armstrong (2014)	Europe	88
51	Soomro and Shah (2015)	Pakistan	135
52	Hadi, Wekke and Cahaya (2015)	Indonesia	
53	Lima, Lopes, Nassif et al. (2015)	Brazil	12,604
54	Testa and Frascheri (2015)	Italy	4
55	Paço, Ferreira, Raposo et al. (2015)	England	1,015
<b>Difference between countries</b>			
<b>Antecedents of entrepreneurial intent:</b> entrepreneurship education, family, motivation, attitude, subjective norm, perceived control, external and personal barriers, regional dimension, demographic profile, culture, knowledge.			
<b>Methods and techniques:</b> ANOVA, t-test, multivariate analysis.			
Q	Authors	Country	Sample
56	Franco, Haase and Lautenschläger (2010)	Portugal and Germany	988
57	Giacomin, Janssen, Pruett et al. (2011)	USA, China, India, Spain, and Belgium	2,093
58	Davey, Plewa and Struwig (2011)	Germany and Finland	1,055
59	Liñán, Krueger and Nabi (2013)	Spain and Great Britain	1,005
60	Nieuwenhuizen and Swanepoel (2015)	Poland and South Africa	182
	Total Sample		88,036

Source: Elaborated by the authors.

## RESULTS AND DISCUSSION

Graphic 1 illustrates the growth of EI publications on the international scene, with a rate of 41% between 2004 and 2015, and with the years 2011 and 2013 being the most prolific in publications.

**Graphic 1**  
Publications by year



Source: Elaborated by the authors.

The publications in EI are more frequent in journals specialized in entrepreneurship and psychology. The most prominent are: *Education and Training*; *Entrepreneurship, Theory and Practice*; *Journal of Small Business and Enterprise Development*; *Journal of Applied Psychology*; *Journal of Applied Social Psychology*; *Journal of Work and Organizational Psychology*; *Journal of Business Venturing*; and *Journal of Enterprise Culture*.

Quantitative data analysis prevailed in almost all the studies (92%), using a variety of analysis techniques: logistic, linear, and hierarchical regression (n = 20); descriptive (n = 16); confirmatory, using structural equation modeling (n = 16); correlation (n = 12); t-test (n = 10); univariate (n = 7) and multivariate (n = 3) variance. The qualitative studies (n = 5), in turn, used content analysis, focus group, interview, and data-based theory, representing only 8% of the studies. Most articles used more than one analysis technique.

Regression analysis is the technique most commonly used by EI researchers in the articles reviewed, followed by descriptive statistics and confirmatory analysis via structural equation modeling. The latter has been gaining force, especially in model-testing studies (LIN, CARSRUD, JAGODA et al., 2013). The only Brazilian article included in the sample used ANOVA, exploratory factor analysis, and descriptive statistics, and was published in the *Revista de Administração Contemporânea* (RAC).

Regarding the antecedents of entrepreneurial intent, personal variables explain EI of students, especially university students (LIÑÁN and FAYOLLE, 2015). Despite some criticisms, psychological factors and personality traits, for example, continue to be great predictors of student EI (SAEED, NAYYAB, RASHIED et al., 2013). Other personality-specific characteristics, such as risk propensity (NABI and LIÑÁN, 2013) and locus of control (internal or external) (ZELLWEGGER, SIEGER and HALTER, 2011) have also been studied. In addition, there are some skills or abilities, such as creativity (ZAMPETAKIS, GOTSIS, ANDRIOPOULOS et al., 2011) and emotional intelligence (ZAMPETAKIS, KAFETSIOS, BOURANTA et al., 2009), which are joined to the set of variables on entrepreneurial intention. Values, motivations, self-efficacy, and mainly, attitudes are also considered strong predictors of EI (WATCHRAVESRINGKAN, HODGES, YURCHISIN et al., 2013). Although a relevant phenomenon, the mental processes involved in its development and maintenance are still little studied (LIÑÁN and RODRÍGUEZ-COHARD, 2008).

Although on a smaller scale, along with the personality and psychological factors (BRANDSTÄTTER, 2011), proximal and distal contextual factors are studied as antecedents of EI, such as family (BHANDARI, 2012), education (SOOMRO and SHAH, 2015), and country (GIACOMIN, JANSSEN, PRUETT et al., 2011).

## Describing Antecedents and Mediators of Entrepreneurial Intent: Individual Level

Personality factors, known as the Big Five (conscientiousness, agreeableness, openness to experience, extraversion, and emotional stability), and psychological factors such as risk propensity, internal locus of control, self-efficacy, motivation, and attitude are variables considered strong predictors of students' EI in many studies.

The Zhao, Seibert and Lumpkin (2010) meta-analysis, conducted between 1979 and 2006, that used 60 studies with a total of 15,423 individuals (students and businesspeople), showed that people who are more aware and open to innovation are attracted to entrepreneurship and are also more likely to succeed; and that entrepreneurs are on average less agreeable than non-entrepreneurs, perhaps due to the constant use of rationality, conflict management, contingent decision making, and so on. Risk propensity was positively related to the student's EI, but not to the business performance of established firms, indicating that, before starting a business, people risk more than they do after their business is underway. A review of five meta-analyses, carried out between 1990 and 2010, again showed that risk propensity was not related to business performance, but rather to its creation, and is a good indicator of EI (BRANDSTÄTTER, 2011).

Risk propensity, perceived viability, and desire to run a business once again predicted the EI of 114 college students from Florida (USA) in the study by Segal, Borgia and Schoenfeld (2005). In the Ukraine, however, Solesvik (2007) found that risk propensity negatively influenced students' EI, likewise in Brazil (LOIOLA, GONDIM, PEREIRA et al., 2016), which leads to the conclusion that Ukrainian and Brazilian students surveyed are not prone to taking risks. The study by Nabi and Liñán (2013) evaluated

the influence of perceived risk, in a period of economic recession, on the EI of 619 university students from Spain and the UK, with the mediation of attitude and perceived control. The conclusion was that mediation occurs only through attitude.

Extroversion and openness to experience are positively related to EI, according to the study by Saeed, Nayyab, Rashied et al. (2013) with 100 graduate students in Pakistan. Locus of control, however, did not impact EI, differing from the study by Mueller and Thomas (2000) with 1,800 students from the USA and eight European countries. One possible explanation is that in individualistic cultures, such as in the USA, unlike Pakistan, there is an increase in locus of internal control, which positively influences EI.

Internal locus of control was also positively related to EI among students who were interested in continuing the family business, according to Zellweger, Sieger and Halter (2011), who used data from the Guesss-Global University Entrepreneurial Spirit Students' Survey, an international study of eight countries. This result converges with that of Sesen (2013), with 356 students from Turkey, and Solesvik (2007), with 192 Ukrainian students. Those with entrepreneurial parents showed greater perceived entrepreneurial self-efficacy, attitude, subjective introjection of norms, and perceived control.

The study by Zhao, Hills and Siebert (2005) identified the mediating role of self-efficacy in the development of EI, using a sample of 265 MBA students from five US universities. The mediating role of entrepreneurial self-efficacy was tested in the relationship between the dimensions of emotional intelligence and EI, by Mortan, Ripoll and Carvalho (2014), with a sample of 394 Spanish and Portuguese students, indicating that two dimensions of emotional intelligence (regulation and use of the emotions) positively affect this self-efficacy, which, in turn, mediates the relationship between emotional intelligence and EI.

As for the motivations for creating new companies, Brandstätter's meta-analysis (2011) found that motivation for the venture was positively related to both the creation and the success of the business. In the study by Watchravesringkan, Hodges, Yurchisin et al. (2013), which evaluated 343 students from three American universities, self-fulfillment influenced entrepreneurial attitude more than the student's personal social network. Although the individual effort toward self-fulfillment is relevant at business startup, for the students, these networks will be necessary for maintaining their businesses. In addition to self-fulfillment, in the study by Fitzsimmons and Douglas (2005), with a sample of 414 MBA students from India, China, Thailand, and Australia, the desire for independence was the prominent motivation in all the countries surveyed, with Chinese and Thais placing greater emphasis on income than Australians and Indians.

In Africa, the study by Maalu, Nzuve and Magutu (2010) found as the main motivations for creating a business, among 250 students: the maximum use of skills and talents; the perception of total control of the future; the fulfillment of what is personally valued; the freedom/opportunity to make one's own decisions; the opportunity to learn new things and financial security. In addition to motivational aspects, the association between entrepreneurship and well-being was found in the study by Maalu, Nzuve and Magutu (2010). Well-being was measured by aspiration, comfort, lifestyle, commitment, source of wealth, and prosperity.

Creativity is another antecedent variable of EI that has been researched. In the Philippines, Moralista and Delariarte (2014) found, with a sample of 100 university students, creativity as the principal explanation for entrepreneurial self-efficacy. The more creative the students consider themselves, the higher their intention to start a venture, according to Zampetakis, Andriopoulos, Gotsi et al. (2011) with 180 British students. The new conclusion of the study was the moderating effect of the entrepreneurship studies program. Creative students who took entrepreneurship courses presented higher EI indicators.

Emotional intelligence, creativity, proactivity, and attitude were tested as predictors of EI by Zampetakis, Kafetsios, Bouranta et al. (2009) in 280 students from three Greek universities. Creativity and proactivity had a mediating effect on the relationships between emotional intelligence and EI and also between attitude and EI. Attitude, in turn, exerted a mediating effect between proactivity and EI.



## Describing Antecedents of Entrepreneurial Intent at the Contextual Level: Family and Entrepreneurship Education

### *Family*

The relationship between parents' occupation, student's occupation, and EI was significant in Bhandari (2012), who analyzed 390 students from New York. This finding converges with the study of 44 French students by Radu and Loué (2008), who found a strong influence of entrepreneurial role models (e.g., influence of parents or mentors and of success stories) on self-confidence and EI. The study by Bosma, Hessels, Schutjens et al. (2012), with 292 businesspeople, found that 81% of them recognize having been influenced by the model of entrepreneurial parents. The study by Carr and Sequeira (2007) again demonstrated the strong influence of the family's entrepreneurial experience on the creation of businesses by 308 respondents, students and businesspeople.

Still on role models, Barnir, Watson and Hutchins (2011) examined, in a sample of 393 college students in the USA, whether such models differ in EI and self-confidence between men and women. The conclusion was that models among family and friends have positive impacts on women's self-confidence, suggesting that they expect support in the knowledge and other skills needed to engage in business tasks, such as conflict management. The influence of role models on men tends to be more focused on opportunities and access to resources.

The study by Sesen (2013) found that personal social networks influence the student more than the university environment itself, in the sense of supporting the idea of the new business. This social support was also analyzed by Liñán and Santos (2007), in a sample of 354 students from Spain, showing that these relationships can offer the student access to other resources, such as human or financial capital, as well as increase the desirability of starting the business.

### *Entrepreneurship education*

Systematic reviews (PITTAWAY and COPE, 2007) and meta-analyses (BAE, QIAN, MIAO et al., 2014) conclude that EE has been positively stimulating EI, not only of students, but of individuals with whom it has contact. According to Paço, Ferreira, Raposo et al. (2015), EE offers individuals a sense of independence, autonomy, and self-confidence, makes them aware of alternative career options, as well as broadens their horizons, increasing their capacity to perceive opportunities. Through EE, the individual can acquire the necessary skills to start and grow a new business, such as technical, strategic, personal, relationship, commitment, organizational, learning, ethical, and conceptual skills (MAN, 2001).

Thus, the training for entrepreneurship is not limited to the creation and management of a company, focusing merely on the tangible and quantifiable results of a business plan. It is also essential that it seeks to develop competencies, attributes, and behaviors (PAÇO, FERREIRA, RAPOSO et al., 2015). The combination of theory and real-world experience encourages the student's entrepreneurial intent (PETERMAN and KENNEDY, 2003).

The research by Watchravesringkan, Hodges, Yurchisin et al. (2013) found that students who believe they have competencies, because of having participated in EE programs, present more positive attitudes towards entrepreneurship. The importance of entrepreneurial competencies was also analyzed by Lean (2012), in a sample of 128 doctoral students from the UK, showing that even in different areas of expertise, especially following an academic career, the students perceived the necessity of knowledge about entrepreneurial skills and competencies. This result is consistent with the research by Smith, Williams, Yasin et al. (2014) in which 100 graduate students from the UK participated. These authors conclude that higher education does not meet the need to learn entrepreneurial skills that would positively affect EI.

Students who engage in planning-oriented educational activities have significantly higher intentions of engaging in entrepreneurial behavior than those who have no involvement in such activity. This was demonstrated by Armstrong's (2014) research, with 88 European university students.

Around 100 empirical studies analyzing the impact of EE in formal education in the United States and Europe were reviewed by Van der Sluis, Van Praag and Vijverberg (2008). The authors found that the effect of the education on performance is positive and significant, although the EE returns are higher in the US than in Europe, especially for non-whites or immigrants. In Kenya, the impact of EE was also favorable for desirability, viability, and propensity to act, according to the study by Ngugi, Gakure, Waithaka et al. (2012), which used a sample of 133 university students.

The study by Soomro and Shah (2015) concluded that a favorable attitude toward entrepreneurship was positively related to EE programs, in a sample of 135 university students from Pakistan. Similarly, Mushtaq, Hunjra, Niazi et al. (2011) evaluated the relationship between education and EI of 225 Pakistani students from the economics and management programs, showing a high correlation between the two constructs.

In contrast to the Europeans, Norwegian students surveyed were not affected by EE, according to the work by Støren (2014) with 2,827 graduates, participants or not in some entrepreneurship program/course. This result was consistent with the research by Kristiansen and Indarti (2004) comparing individual variables among 251 Norwegian and Indonesian students.

These ambiguous results demand consideration about how EE is organized in different countries, as well as about specificities of labor markets. In Norway, the labor market has been good (STØREN, 2014), which explains the tendency of graduates to earn regular incomes, unlike the underdeveloped countries, where a significant number of graduates start a business for lack of opportunity in the labor market (GEM, 2014 ).

In a sample of 321 students from three Ukrainian universities who engaged in entrepreneurship programs, Solesvik (2012) found that such engagement is related to entrepreneurial motivation and the propensity to become a businessperson. In Africa, Gielnik, Frese, Kahara-Kawuki et al. (2013) also analyzed an action-based entrepreneurial training program, with a sample of 651 Ugandan students, over 12 months. They found a significant positive effect of training on EI, in knowledge and action planning, and in entrepreneurial self-efficacy. This suggests that the positive impact of intervention programs is related to the content and planning of the entrepreneurial action, which deserves to be better explored in future studies that include analysis of the design of each program.

In the UK, Jones and Colwill (2013) evaluated the impact of the Young Enterprise, Wales (YEW) program on the EI of its participants, with a sample of 44 students in professional courses, showing a positive impact on attitude, skills, and knowledge such as teamwork, ability to plan and organize. Also focusing on the EI of students of professional courses, Marques, Ferreira, Gomes et al. (2012), who evaluated the difference in EI between 202 Portuguese students who had already had contact with themes related to entrepreneurship and those who did not, demonstrated results different from those indicated by Jones and Colwill (2013), in which EI was not affected by EE. Marques, Ferreira, Gomes et al. (2012) indicate the need to nurture schools with an entrepreneurial culture.

In Italy, this result was reaffirmed in the research by Testa and Frascheri (2015), which sought to clarify why some EE initiatives implemented in professional training schools are ineffective. The authors' conclusion was that the formats of curricula involving EE were limited to building a business plan, disregarding the importance of students' understanding about the use of their personal knowledge in self-employment, the meaning of self-employment, and the development of positive attitude/role/image of entrepreneurs. In addition, they need to understand the process of generating and evaluating ideas. Only later will they need to learn how to develop a business plan. In Indonesia, the qualitative research by Hadi, Wekke and Cahaya (2015) also indicated the need for educational programs on entrepreneurship in elementary and secondary schools.

The teaching of entrepreneurship was investigated by Gerba (2012) in 22 public universities in Ethiopia, finding that it is in its initial phase, with a greater presence in business and agricultural schools, even with traditional teaching methods. The study by Wu and Wu (2008), with 150 Chinese students, again found little relation between these two constructs (EE and EI), since EE in the studied university (Tongji) is still in its initial phase.

The study by Lima, Lopes, Nassif et al. (2015) examined ways to improve EE, using the Guesss sample, composed of 12,604 Brazilian students, and noting that these students have a higher demand for EE than is seen in other countries.

Although there is a high demand among these students for EE, the perception of the ability to launch a business (self-efficacy) has been indifferent to it, i.e., EE does not predict EI, revealing that EE may not be achieving its goal of promoting entrepreneurship.

The successful enterprise, from the perspective of Liñán (2008) and Liñán and Chen (2009), depends on the identification of opportunities, creativity, problem solving, leadership, communication, innovation, and social networking. It also depends on the inclusion of specific content in the education system to add value to the EI of these students.

Finally, Packham, Jones, Miller et al. (2010) found, using a sample of 237 students from three European nations (Poland, Germany, and France), that EE positively affected the EI of French and Polish students, but not German students. There is a relative consensus that students entering German higher education are less likely to pursue a career in entrepreneurship, probably because they find greater offers of inclusion in the formal world of work.

In the European context, as Paço, Ferreira, Raposo et al. (2015) indicate, most member states are committed to promoting entrepreneurship education in their educational systems through the implementation of various educational programs designed to contribute to the development of entrepreneurial skills. When developing EE programs, however, one must consider the cultural variability of each country. In Norway, for example, EE does not appear to be associated with EI, due to the fact that its labor market is considered well structured and offering adequate compensation (STØREN, 2014), ensuring a high income for the employed individual. Students from less developed countries, such as Brazil and Indonesia, however, are more likely to foresee future careers as entrepreneurs and are more positive about entrepreneurship than are industrialized Europeans (FRANCO, HAASE and LAUTENSCHLÄGER, 2010).

The returns from entrepreneurship education are higher in the USA than in Europe (VAN DER SLUIS, VAN PRAAG, VIJVERBERG et al., 2008). Entrepreneurship education plays an important role in this context, providing not only technical instruction (e.g., accounting, marketing, finance, etc.) but also helping to reorient individuals towards self-reliance, independent action, creativity, and flexible thinking.

In the African context, in turn, EE was positively related to EI (GIELNIK, FRESE, KAHARA-KAWUKI et al., 2013), although it is recognized that the teaching of entrepreneurship is in its initial phase and employs traditional teaching methods (GERBA, 2012).

## Analyzing Differences Between Countries

This section highlights the diversity of countries that have been the locus of EI research. The continent with more countries studied was Europe (n=21), followed by Asia (n=12), Africa (n=6), America and Oceania (with two countries each). Only one study involved participants from the great continent, Eurasia (n=1), which unites Europe and Asia. The United States was the country most studied.

It was decided to add more analyses of results from inter-country studies, mainly because they explain the variations observed based on cultural differences (MORIANO, GORGIEVSKI, LAGUNA et al., 2012). The central arguments consider that, in an individualistic society, members tend to make decisions independently and are concerned about themselves and their immediate family. On the other hand, in collective societies, group ties are strong, the family includes relatives (uncles, aunts, cousins, etc.) and is guided by obligations imposed by the group, by the search for harmony, and by the avoidance of direct confrontation (HOFSTEDE, 2011).

In Sri Lanka, the study by Lin, Carsrud, Jagoda et al. (2013) evaluated the EI of 353 university students, finding that EI was influenced by the perceived control and the support of the environment, and not by the subjective attitude and norm. The explanation would be in the values of a collectivist culture, which does not stimulate self-sufficiency, but rather the contextual support for the search for new and alternative resources.

The study by Giacomini, Janssen, Pruett et al. (2011) compared the EI of 2,093 students from five countries (USA, China, India, Spain, and Belgium). In Spain there is more EI than in the other countries. The motivation was similar, but the types varied, for example, Indians aspire to higher social status, while Americans, to more independence. This is not surprising,

given the American individualistic culture and the Indian collectivist culture. EI was compared by Nieuwenhuizen and Swanepoel (2015) among 182 Polish and South African MBA students, finding that the South Africans wish to pursue an entrepreneurial career more than the Poles. Franke and Lüthje (2004) compared the EI of 107 management students from two German universities with the Massachusetts Institute of Technology (MIT), showing a low EI of the Germans relative to MIT, which presents an environment more favorable to entrepreneurship than the other two universities, which tends to reinforce the importance of EE.

The EI of 988 Portuguese and German students was also compared by Franco, Haase, Lautenschläger et al. (2010), demonstrating that the IE of Portuguese individuals is greater than that of Germans, perhaps due to divergent socioeconomic realities and to different beliefs, values, and attitudes towards the entrepreneurial spirit. The EI of 1,005 students from Britain and Spain was also compared by Liñán, Krueger and Nabi (2013), including motivations, cultures, skills, and knowledge as predictors. The authors found that Britons presented more entrepreneurial intent than Spaniards. This finding, related to the comparison between Portuguese and Germans, requires a more critical reflection on the reasons that lead students to launch a business. Certainly, cultural aspects are important, but considering that Germans are closer to Britons and Portuguese closer to Spaniards, other variables must interfere beyond individualist and collectivist values.

Davey, Plewa, and Struwig (2011) compared the EI of 1,055 students from economically distinct nations in Europe (e.g., Germany, Finland) and Africa (e.g., Uganda, Kenya) in their first year of college, finding that students from developing countries are more likely to foresee future careers as entrepreneurs and are more positive about entrepreneurship than their industrialized European counterparts, although the EI motivators appear similar.

EI was also compared among students of professional courses. Although the study by Dinis, Paço, Rodrigues et al. (2013), with a sample of 74 Portuguese students, ages 14 and 15, showed self-confidence, need for fulfillment, tolerance for ambiguity, and innovative nature as characteristics of these students, the EI was low, perhaps because they did not yet feel capable of becoming businesspeople, besides not having had contact with the discipline of entrepreneurship. This result is consistent with the study by Akmaliah and Hisyamuddin (2009), who examined 1,357 students from professional courses in Malaysia, also noting low EI, even in the face of a positive attitude towards the entrepreneurial career.

The discussion of EI in the comparison between countries can be enhanced by seeing it from the perspective of barriers to entrepreneurship. External and personal barriers unite in explaining the factors that impede entrepreneurship. The contextual factors would be lack of: financial support, infrastructure, technological innovation, resources, and organizational support (ACHCHUTHAN and NIMALATHASAN, 2012). Individual barriers would be: aversion to risk, to stress, lack of skills, of knowledge, of ideas, resistance to change, and lack of social networks (KEBAILI, AL-SUBYAE, AL-QAHTANI et al., 2015).

In studying the relationship between barriers and EI with 2,093 American, Indian, Belgian, Chinese, and Spanish students, Giacomini, Janssen, Pruett et al. (2011) concluded that Americans, Asians, and Europeans have different intentions and dispositions to launch a business that depend on their perceptions of the barriers. The Indians are more sensitive to barriers, especially lack of structural support; and the Spanish, Americans, and Chinese are less sensitive and revealed greater EI.

In the Asian context, especially in Sri Lanka, Qatar, and Malaysia, students highlight several barriers such as lack of financial support, people's negative attitude towards entrepreneurship, lack of ideas, creativity, and capacity to take risks (THRIKAWALA, 2011). This result converges with the study by Sandhu, Fahmi and Riaz (2011), with 267 Malaysian graduate students, and with the study by Olufunso (2010), with 701 South African students.

There is a prevalence of collectivist culture in Asia, which explains the low locus of internal control of Pakistani students (SAEED, NAYYAB, RASHIED et al., 2013) and aspiration for social status, as is the case of India (GIACOMINI, JANSSEN, PRUETT et al., 2011).

In general, and not surprisingly, the respondents from developing countries report a greater perception of entrepreneurial barriers. It is concluded, therefore, that perceived barriers also tend to differ between countries.

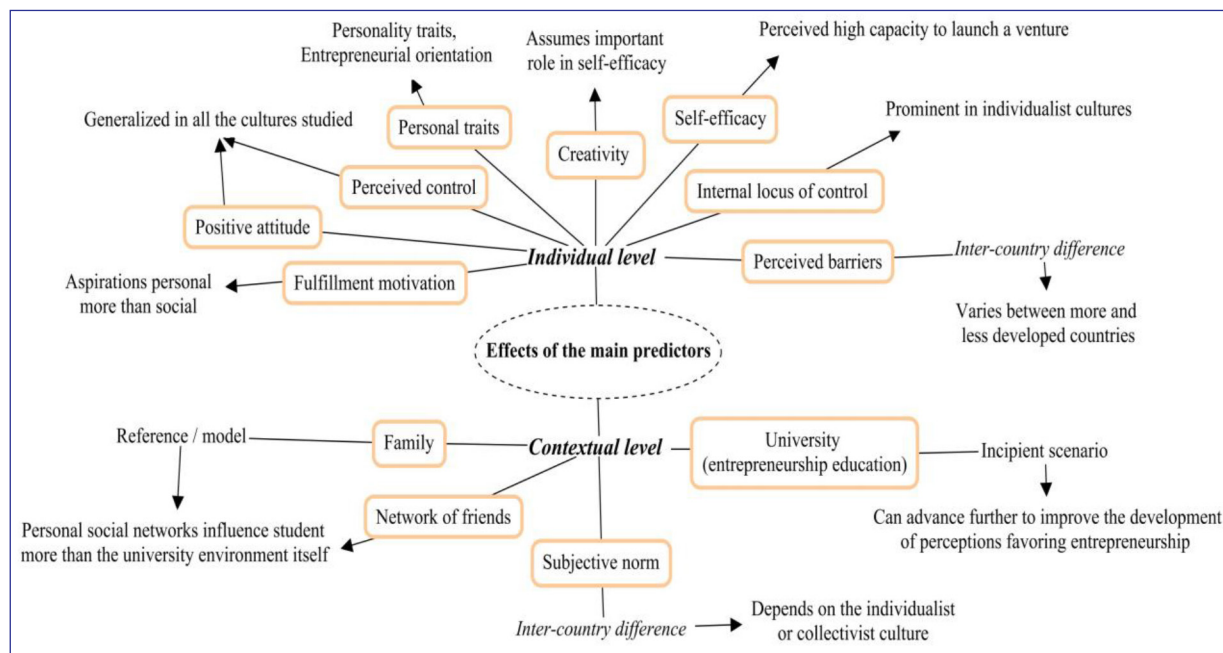
## CONCLUSIONS

Considering the objectives of this literature review, the evolution of the studies on predictors of EI and the main individual and contextual predictors of IE were verified. There was an increase of 41% in studies on EI between 2004 and 2015, in various countries and continents, which reveals the increased interest in the subject. In Brazil, however, such research is almost non-existent, signaling the importance of stimulating studies in this direction, which could potentially contribute to the development of policies for entrepreneurship education and skills development in the university environment.

Figure 1 presents a summary of the individual and contextual predictors. The main individual predictors are: personal traits, desire for personal fulfillment, positive attitude, self-efficacy, perceived control, internal locus of control, perceived barriers, and creativity. The family appears as the main proximal contextual predictor, mainly for offering an entrepreneurial role model to be followed. The network of friends also appears as a proximal contextual predictor, since besides serving as a model to be followed, it acts as support in the development of the business.

With regard to EE (entrepreneurship education), the results are inconclusive, especially taking context into account. The results of comparative inter-country studies indicate that EE has different effects depending on the cultural values prevailing in the country, how entrepreneurship education is put into practice, and the level of development of the country and its institutions supporting entrepreneurship. Most of the research was conducted in the USA, a country with a strong individualistic tradition, which favors socialization for a type of individual entrepreneurship. Predominantly collectivist cultures, such as Asian ones, for example, more oriented toward group values, end up being more vulnerable to values-related barriers that prevent individual initiative projects from being carried forward.

**Figure 1**  
**Summary of conclusions**



Source: Elaborated by the authors.

According to the studies reviewed, the effects of the variables attitude, perceived control, and subjective norm differ in magnitude, but such effects are generalized in all the cultures studied. Variations regarding the effects of subjective norms are generally explained by the cultural characteristics of the countries, predominantly individualistic (e.g., the Netherlands, USA) or collectivist (e.g., India, Sri Lanka). Another variation arises from the presence or absence of social support, and the effect

of proximal or distal relationships. Another important finding from the reviewed studies is that young people decide to launch a business more for personal rather than social aspirations. Future studies can explore in greater depth which are the most relevant reference groups in different cultures.

It can be concluded that each economy is generating a group of entrepreneurial students and that their intentions are very similar, although the perceived barriers to EI vary between more or less developed countries. Also, there are cultural and environmental aspects that insinuate their influence on the decision making in each location.

Concerning the favorable environment for entrepreneurship, it is worth emphasizing that the educational system can act at the elementary and secondary levels to improve the development of perceptions favorable to entrepreneurship. EI at the end of the university degree program does not seem to be sufficient for launching a venture, because the potential entrepreneur needs to acquire relevant experience before starting a company. Thus, the combination of favorable perceptions developed prior to the completion of the degree program, together with the acquisition of experience, such as participating in junior enterprises, might contribute to the viability of the business. No studies were found that discussed the relationships between taking part in junior companies or other entrepreneurial experiences and EI.

It was also observed that the themes of EI and its interrelation with personal and contextual factors, proximal or distal, still deserve much attention from the researchers in Brazil. Studies of this nature are almost non-existent here in a framework that is gaining progressive importance in the world. The relations between EI and EE deserve to gain the spotlight in a country where entrepreneurship has been strongly emphasized as a viable and promising alternative to the instability of the labor market and also as a competency to be reinforced even in the academic training of those who intend to get a job in the formal market.

The reviewed authors suggest a broad set of new studies to:

- Evaluate whether students actually started their business, since EI only measures an intention;
- Test the influence of entrepreneurship training programs focused on creativity on EI;
- Explore the effects of social networks on the student's mutual trust and self-confidence;
- Evaluate the skills acquired in entrepreneurship education programs;
- Evaluate the effectiveness of training programs in entrepreneurship around the world; and
- Analyze the intercultural differences of EI among countries.

When considering the current importance of EI, both as a formative ideal and as an alternative for inclusion in the world of work given the successive and serious economic, political, and social crises with which the contemporary world is confronted, it becomes extremely important to stimulate studies that allow a better understanding of the antecedents and consequences of EI, in order to undertake research activities and public policy actions that enhance its personal, social, and organizational benefits.

This review has its limitations and does not aim to achieve the final review status of the international and national literature on EI. The results may be seen as limited by the excerpt selected for the sample, although the most prominent bibliographical sources in entrepreneurship have been used. It is also assumed that there may be other antecedent variables beyond those analyzed here.

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