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EMOTIONAL COMPETENCIES AND ENTREPRENEURSHIP: MODELING
UNIVERSITIES
 --Manuscript Draft--

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Abstract:	The goal of this study is to analyze the effect of emotional ecompetencies on the entrepreneurial training received by students at a private university ecosystem using a modified version of Ajzen's theory of planned behavior. The results are compared with another university ecosystem located in the same geographical area. This research offers practical implications for improving entrepreneurship programs that contribute to the promotion of the entrepreneurial and self-employment capacity of university students. In order to accomplish this, we follow a theoretical model approach. After the sclaes are validated, two samples are selected to test the hypotheses. A first sample is a group of 1,690 new university students at three universities in Guadalajara, Mexico, and a group of 217 students, who have been within a university's entrepreneurial ecosystem for three years. Structural equation modeling is used to find the results of this research. Emotional Competences show differences in the model of the entrepreneurial intention of the private university and the public university, showing some paths to follow the universities. The permanence in a university gives some paths to follow for a private university with similares characteristics.
Response to Reviewers:	Ref.: Ms. No. IEMJ-D-20-00162 EMOTIONAL COMPETENCIES AND ENTREPRENEURSHIP: MODELING UNIVERSITIES International Entrepreneurship and Management Journal Dear Editor, We have consciously revised our paper, following the reviewer's commentaries and recommendations, and now we are in the disposition of submitting the revised manuscript. We would like to thank you all for the opportunity of improving our work. Here enclosed, we comment on the changes that have been made. Our individual responses to your specific suggestions follow in the order in which you listed them. Also, the changes are included in the revised manuscript in another color to facilitate its revision.

Yours sincerely

Reviewers' comments:

Reviewer #1: Dear Authors, here you are, my impressions about the draft. I hope they will be helpful to you.

Thank you for your supportive feedback.

- In the "Literature review" and "Methodology" is declared that your analysis, relay on the university entrepreneurial ecosystems, so we need and extended characterization of the differences in the ecosystem beyond the private/public titularity of the universities to better understand the differences, that may be implicit or explicitly showed in your final conclusions, (see: Stam, E. and van de Ven, A., (2019). Entrepreneurial ecosystem elements. Small Bus Econ (2019). <https://doi.org/10.1007/s11187-019-00270-6>.

In the "Methodology" section, the necessary arguments have been included to broaden the characterization of university entrepreneurial ecosystems following the indications and suggested references.

- In the multigroup analysis over time (page 18 "without ecosystem effect" vs "with ecosystem effect" (TEC sample), even if the EI shaping model do not vary across the subsamples, the sample exposed to the temporalization is from one of the educational ecosystem which most promotes entrepreneurship, so results may vary if you have had consider temporality of both entrepreneurial ecosystems. This point needs additional explanation, to better justify your analysis.

Only the sample corresponding to the most promoting entrepreneurial ecosystem was exposed to time; because we wanted to see the contributions of all the elements that make a more entrepreneurial ecosystem, somehow, regarding the effectiveness and variety of the emotional and cognitive antecedents of the entrepreneurial intention. The initial public / private comparison served as the initial control group to see the evolution of the most entrepreneurial over time. In this sense, we follow the line of Fernández-Pérez et al. (2019) but applied to a broader context than merely giving entrepreneurship courses and its effect on the entrepreneurial intention of the students. The ecosystem effect was addressed as a whole. Obviously, it would be convenient and more enriching to make a temporary comparison of both ecosystems. However, we do not have the data as the initial goal was the one mentioned above.

Again, thank you very much for your valuable and constructive suggestions. We sincerely believe that your comments have helped us to improve the accuracy and empirical clarity of the paper. We hope that our revisions appropriately address your suggestions and generate a relevant contribution to the literature.

Reviewer #2: The Introduction section is correct, but a paragraph is missing (at the end of the section, before the last paragraph in which the authors explain the gap that their research aims to cover.

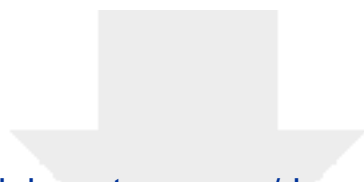
Thank you for your supportive feedback. In the revised paper, we have included a statement of the aim of the research where you indicated it in the introduction.

The section "Literature Review" is well explained, I advise the authors to review and include the following papers:

- Bar-On, R. (1997), Bar-On Emotional Quotient Inventory: Technical Manual, Multi-Health Systems, Toronto.
- Goleman, D. (1995), Emotional Intelligence, Basic Books, New York, NY.
- Sastre Castillo, M.A. and Danvila Del Valle, I. (2017) "Is emotional intelligence the panacea for a better job performance? A study on low-skilled back office jobs", Employee Relations, Vol. 39, Issue: 5, pp.683-698.

Thank you very much for help us with the theoretical framework. We have revised all the provided references and incorporated into the revised manuscript.

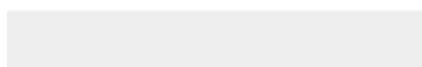
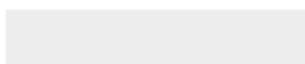
	<p>The methodology used is adequate and consistent with the objectives of the work.</p> <p>Thank you for this positive comment.</p> <p>The results are robust and in my opinion constitute one of the strengths of the present study.</p> <p>Thank you for this positive comment.</p> <p>I consider that the authors should include within the Conclusions section a subsection of "Limitations of the investigation" and another of "Future lines of investigation". We have incorporated the two suggested subsections into the manuscript: limitations and future lines.</p> <p>The bibliography used is good, since it includes the main works on emotional intelligence and entrepreneurship, as well as recent studies in impact magazines.</p> <p>Thank you for this positive comment.</p> <p>Again, thank you very much for your valuable and constructive suggestions. We sincerely believe that your comments have helped us to improve the accuracy and empirical clarity of the paper. We hope that our revisions appropriately address your suggestions and generate a relevant contribution to the literature.</p>
<p>Manuscript Classifications:</p>	<p>100.109: TPB Theory of Planned Behavior; 200.205: Entrepreneurial intentions; 200.219: Attitudes and planned behavior; 200.221: Self-efficacy; 500.504: Longitudinal; 500.511: Structural Equation Modelling; 700.704: Entrepreneurship education</p>



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Title Page

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EMOTIONAL COMPETENCIES AND ENTREPRENEURSHIP: MODELING UNIVERSITIES

Abstract

The goal of this study is to analyze the effect of emotional competencies on the entrepreneurial training received by students at a private university ecosystem using a modified version of Ajzen's theory of planned behavior. The results are compared with another university ecosystem located in the same geographical area. This research offers practical implications for improving entrepreneurship programs that contribute to the promotion of the entrepreneurial and self-employment capacity of university students. In order to accomplish this, we follow a theoretical model approach. After the scales are validated, two samples are selected to test the hypotheses. A first sample is a group of 1,690 new university students at three universities in Guadalajara, Mexico, and a group of 217 students, who have been within a university's entrepreneurial ecosystem for three years. Structural equation modeling is used to find the results of this research. Emotional Competences show differences in the model of the entrepreneurial intention of the private university and the public university, showing some paths to follow the universities. The permanence in a university gives some paths to follow for a private university with similar characteristics.

1. Introduction

Promoting entrepreneurship can significantly affect the social and economic development of any country (Hall, Daneke, and Lenox 2010). Therefore, entrepreneurship and self-employment have become priority issues in policy agendas for both public administrations and private initiatives (European Commission 2010). Entrepreneurship is a discipline that can be learned, and universities are the appropriate venues where entrepreneurship education can occur (Peltier and Scovotti 2010), by developing the skills and abilities of students (Peña-Viga 2005). Therefore, a growing number of higher-education institutions have been introducing entrepreneurship training programs (Vanevenhoven and Liguori 2013).

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4 In the academic field, a number of studies have analyzed the effects of such programs on entrepreneurial
5 intention (EI) and behavior (Bae, Qian, Miao, and Fiet 2014; Martin, McNally, and Kay 2013). Research on
6 entrepreneurship education should focus on identifying and improving the understanding of the concepts that
7 support entrepreneurial learning and the development of entrepreneurial skills (Fayolle 2013).
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14 EI is commonly considered as a proxy for understanding and predicting the level of entrepreneurial activity
15 (Swail, Down, and Kautonen 2014). EI is a person's conviction that he/she intends to start a new company and
16 consciously plans to do so (Bae, Qian, Miao, and Fiet 2014). Therefore, one of the critical antecedents of
17 entrepreneurial activity (Krueger, Reilly, and Carsrud 2000) is gathering individuals' perceptions of their level
18 of intention (Kolvereid and Isaksen 2006). Among the models developed to identify the precursor of
19 entrepreneurial activity is Ajzen's theory of planned behavior (TPB) (Ajzen 1991), which has become one of
20 the most widely used intention models, having extended its application to entrepreneurship studies (Fayolle and
21 Gailly 2015). In this study, we use the TPB, albeit in an expanded sense with the inclusion of emotional
22 competencies, as was done in previous studies (Fernández-Pérez, Montes-Merino, Rodríguez-Ariza, and
23 Galicia 2019).
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37 Given this background, the general objective of this study is to analyze the influence of emotional
38 competencies on the EIs of students at Tecnológico de Monterrey, a private university, compared with those of
39 students at a public university ecosystem in the same geographical area. We use the TPB, which was constructed
40 by Ajzen (1991) and expanded by Fernández-Pérez, Montes-Merino, Rodríguez-Ariza, and Galicia (2019), who
41 included emotional competencies, and which has already been validated in two university entrepreneurship
42 programs, one public and one private, in the state of Jalisco (Mexico). According to Herrington and Kew (2016),
43 Mexico is among the countries with the best entrepreneurial ecosystems in Latin America. It is one of three
44 countries in Latin America with the highest entrepreneurship rates per opportunity (and is in line with the
45 average in terms of innovation). In this way, it is studied the entrepreneurial capacities at the higher education
46 level in Latin American countries (in this case, Mexico). There is an analysis of emotional competencies against
47 other types of technological or professional competences in entrepreneurship learning, which constitutes a
48 novelty that may offer guidelines for the design of teaching methodologies of a business nature in the future.
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4 Besides, we study what the differences that foment diverse university entrepreneurial ecosystems can cause in
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6 the development of these emotional and entrepreneurial skills are.

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8 The remainder of this paper is organized as follows. A review of the related literature is presented in Section
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10 2. In Section 3, we specify our hypotheses and the model to be validated and explain our methodology. Section
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12 4 discusses our main results. Lastly, we offer our conclusions and describe the limitations of this work. The
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14 goal is to offer practical suggestions for improving university programs that promote entrepreneurship and self-
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16 employment for university students.
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22 **2. Literature Review: The Entrepreneurship Phenomenon in the Context of University Entrepreneurial**
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24 **Ecosystems**

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28 **2.1. EI as a Predictor of Behavior Among University Students**

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30 According to the TPB (Ajzen 1991), EI is formed by three essential motivational factors: perceived control of
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32 behavior, attitude (ATT), and social norms (SNs). Perceived control of behavior refers to the ease or difficulty,
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34 as perceived by the individual, of carrying out a behavior. This concept is compatible with the concept of
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36 perceived self-efficacy (Bandura 1982), described as the belief that one can carry out different roles and tasks
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38 related to entrepreneurship (McGee, Peterson, Mueller, and Sequeira 2009). The ATT of the individual toward
39
40 the act of becoming an entrepreneur is related to the degree to which the individual has a positive or negative
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42 personal view of becoming an entrepreneur. Finally, SNs pertain to the society's views about the behavior:
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44 social pressure perceived by the individual regarding whether or not to pursue entrepreneurial behavior (Ajzen
45
46 1991).
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51 Previous studies have shown the positive relationship among ATT, SNs, self-efficacy (SE), and EIs
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53 (Schlaegel and Koenig 2014). With respect to university students, there are studies that generally support the
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55 positive contribution of these three predictors to EIs (Karimi, Biemans, Lans, Chizari, and Mulder 2016).
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57 However, the importance of each of these three predecessors of EI may vary depending on the situation (Ajzen
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4 1991). In this way, it is contrasted that entrepreneurial SE, personal attitude toward entrepreneurship, and SNs
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6 are positively related to EI.
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10 To the extent that entrepreneurship is a discipline that can be learned (Vanevenhoven and Ligouri 2013),
11 entrepreneurship education can be related to entrepreneurial activity (Zhang, Duysters, and Cloudt 2014).
12 Receiving some entrepreneurial training is considered necessary because it increases the likelihood of
13 individuals becoming entrepreneurs (Jayawarna, Oswald, and Macpherson 2014). In this way, individuals who
14 participate in entrepreneurship programs acquire greater awareness about entrepreneurship and are more likely
15 to consider it as a career option (Liñán, Rodríguez-Cohard, and Rueda-Cantuche 2011).
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24 Because the TPB is related to beliefs and perceptions about entrepreneurship, the TPB is an appropriate
25 tool to evaluate the results of entrepreneurship training (Rauch and Hulsink 2015) and to study the development
26 of EI through pedagogical processes (Zhang, Duysters, and Cloudt 2014). It has been shown in previous
27 research that entrepreneurship education has a significant effect on EI, McNally, and Kay (2013) and by Bae,
28 Quian, Miao, and Fiet (2014) show that entrepreneurship education correlates with EI in a positive but minor
29 way, although they also showed that the results of previous studies are inconclusive. Given this, Liñán and
30 Fayolle (2015) indicated the need for empirical studies to show new evidence of the effects of entrepreneurship
31 education, although it can be generally accepted that entrepreneurship education is positively related to EI.
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43 In addition, it has been considered in several studies that entrepreneurship education may be related to the
44 background of the EI, according to the TPB model (Fayolle and Gailly 2015). Entrepreneurship education can
45 improve entrepreneurial SE (Liñán, Rodríguez-Cohard, and Rueda-Cantuche 2011) to the extent that SE is
46 associated with four of its determinants, namely, domain experience, vicarious experience, verbal persuasion,
47 and emotional activation (Bandura 1982). In this way, activities developed in the area of entrepreneurship
48 education allow students to perceive that creating their own business is a viable option, positively affecting
49 entrepreneurial SE (Krueger, Reilly, and Carsrud 2000). Similarly, entrepreneurship education can foster a
50 positive ATT toward entrepreneurship (Rauch and Hulsink 2015). As Haase and Lautenschläger (2011) pointed
51 out, in order to guarantee sustainable entrepreneurship, one of the crucial pillars of education is to develop
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4 attitudes favorable to entrepreneurship and to form entrepreneurial conviction. Empirical work shows this
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6 positive effect of entrepreneurship education, especially its inspirational component, on various attitudes
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8 (Souitaris, Zerbinati, and Al-Laham 2007).
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12 Entrepreneurship training can also affect the SNs of individuals to the extent that such education plays a
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14 critical role in socializing people about an entrepreneurial career (Krueger and Brazeal 1994). In short, the
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16 current literature shows that entrepreneurship education is positively related to entrepreneurial SE, to ATT
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18 toward entrepreneurship, and to SNs. Finally, previous research has also revealed the role of moderating
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20 variables in the relationship between entrepreneurship education and EI (Martin, McNally, and Kay 2013;
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22 Rideout and Gray 2013). For example, among other variables, it has been shown that previous entrepreneurial
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24 experience within the family may play a moderating role (Mei, Zhan, Fong, Liang, and Ma 2016).
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28 **2.2. Emotional Competencies as Determinants of Entrepreneurship**

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30 Emotional competencies are a practical concept, as they are the application of emotional intelligence in a
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32 particular context (Fernández-Pérez, Montes-Merino, Rodríguez-Ariza, and Galicia 2019), emphasize the
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34 interaction between a person and the environment, and give great importance to learning and personal
35
36 development. Emotional intelligence has a significant impact on situations involved in being an entrepreneur,
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38 such as negotiations, achievement, organizational resources, identification and exploitation of opportunities,
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40 stress management, generation and customer retention, and management and leadership (Awwad and Kada Ali
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42 2012). Thus, emotional competencies are applicable to education and particularly to academic education for
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44 entrepreneurship.
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49 Reviewing the literature identified several definitions of emotional competencies. In general, this refers to
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51 the manifestation of emotionally competent behaviors (Seal and Andrews-Brown 2010) that reflect emotional
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53 intelligence through a broader vision; the ability to accurately perceive, appreciate, and express emotions and
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55 to access as well as generate feelings when thought permits; the ability to understand emotion and emotional
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57 knowledge; and the ability to regulate emotions to promote emotional and intellectual growth (Mayer and
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59 Salovey 1997).
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6 All of these definitions indicate that there are differences in their conceptualization in terms of skills
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8 (Salovey and Grewal 2005), traits (Petrides and Furnham 2000), or a mixture of both (Bar-On , 1997; Bar-On,
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10 Tranel, Denburg, and Bechara 2003). A number of authors, such as Mikolajczak, Quoidbach, Kotsou, and Nelis
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12 (2009), proposed an integrative model of emotional competencies that covers three levels: knowledge, which
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14 refers to what people know about emotions; the ability to focus on what people can do; and the ability to apply
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16 knowledge in a real situation.
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20 A definition that may be useful in understanding the term “emotional competencies” was offered by
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22 Cherniss and Goleman (2005), who stated that these competencies are job skills that can and should be learned.
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24 Goleman (1998) understood that emotional competencies are learned abilities based on emotional intelligence
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26 that results in exceptional work performance. Padilla-Melendez, Fernández-Gámez, and Molina-Gómez (2014)
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28 pointed out that individuals who develop emotional competencies tend to feel more satisfied, are more efficient,
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30 and are better able to master the mental habits that condition their productivity. In cases where the opposite
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32 occurs, those who do not control their lives emotionally will have internal struggles that weaken their ability to
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34 work and prevent them from thinking clearly (Goleman 1995). These emotional competencies are reflected in
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36 personal skills (how individuals manage themselves) and social skills (how individuals deal with others).
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40 The number of studies that have emerged on the subject has been increasing (Kotsou, Nelis, Grégoire, and
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42 Mikolajczak 2011; Sastre Castillo and Danvila Del Valle 2017). Ngah, Salleh, and Sarmidy (2016) made a
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44 connection between emotional intelligence and entrepreneurial orientation. Above all, the concept has grown
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46 in importance because it affects all aspects of people’s lives (Kotsou, Nelis, Grégoire, and Mikolajczak 2011).
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50 Emotional intelligence is closely related to the effectiveness of leadership, and emotional competencies
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52 can be taught (Vivian Tang and Yin 2013). These skills, together with other cognitive factors, can be trained
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54 and influenced by education (Sánchez-Escobedo, Díaz-Casero, Hernández-Mogollón, and Postigo-Jiménez
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56 2011). Notably, in the case of university education, Boyatzis, Rochford, and Cavanagh (2017) demonstrated
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58 that skills can improve with emotional competencies. Despite these findings, the issue is still under discussion;
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4 there is still ambiguity regarding whether emotional competencies can be learned by adults or to what extent
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6 they can be modified in the adult population (Mayer, Salovey, Caruso, and Sitarenios 2001).
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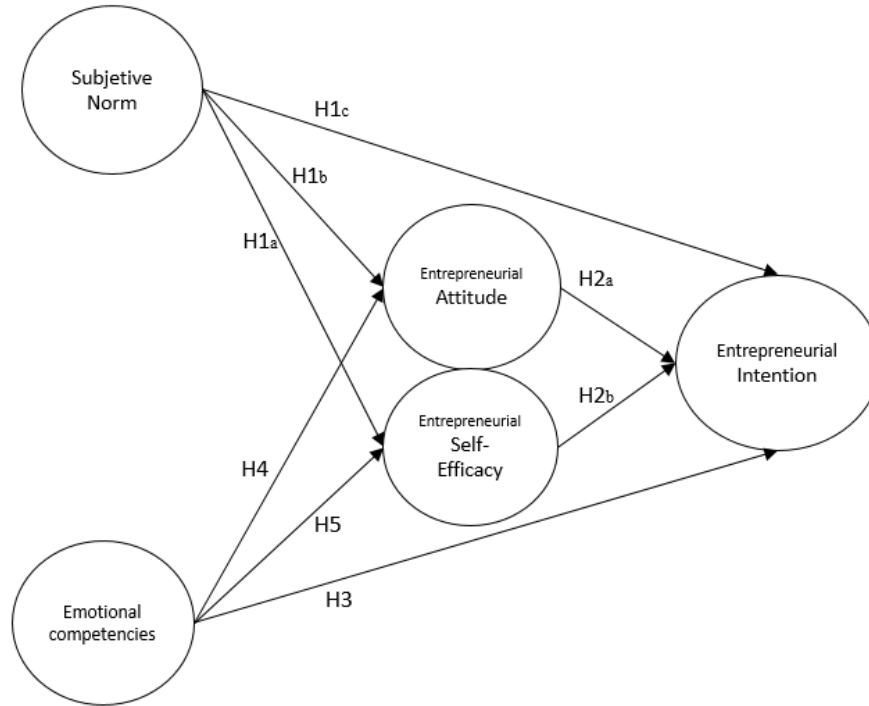
10 In addition, in research on emotional competencies, their composition, the dimensions that make them up,
11 and how they can be measured have also been studied. The components of emotional intelligence are the same
12 as for emotional competencies, as these are the practical application of emotional intelligence. Although there
13 are numerous approaches, we adopt the approach developed by Goleman (1998), which has been revalued by
14 Fernández-Pérez, Montes-Merino, Rodriguez-Ariza, and Galicia (2019). Goleman (1998) proposed five
15 dimensions that he classified as personal skills and social skills. Personal skills are the ability to manage oneself,
16 and he identified three leading competencies within these personal skills: self-awareness, self-regulation, and
17 motivation. Within social skills, he proposed two competencies, empathy and social skills.
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30 **3. Methodology**

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34 Encompassing this discussion of emotional competencies is the theoretical starting model Configuration of
35 the entrepreneurial intention in universities (CEIU), based on the TPB model of Ajzen (1991), in which a variant
36 of emotional competencies is incorporated. We apply this model in two individual university ecosystems of
37 entrepreneurship, one public and one private, in the state of Jalisco (Mexico), confirming the following
38 hypotheses, according to Fig. 1.
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47 **Figure 1: Extended TPB model with emotional competencies (CEIU).**
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- H1_a: The SN has a direct and positive influence on university students' self-efficacy in recognizing entrepreneurial opportunities.
- H1_b: The SN has a direct and positive influence on attitudes toward entrepreneurship among university students.
- H1_c: The SN has a direct and positive influence on the EIs of university students.
- H2_a: The attitude toward entrepreneurship among university students directly and positively affects EI.
- H2_b: Self-efficacy in recognizing opportunities has a direct and positive influence on EIs among university students.
- H3: Emotional competencies directly and positively affect EIs.
- H4: Emotional competencies directly and positively affect attitudes toward entrepreneurship.
- H5: Emotional competencies directly and positively affect entrepreneurial self-efficacy.

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8 In order to test these hypotheses, we studied two different university entrepreneurial ecosystems. Stam and
9 van de Ven 2019 define entrepreneurial ecosystems as a framework that identifies institutions, resources, and
10 productive entrepreneurship as essential elements of the environment that influence the levels of entrepreneurial
11 activity and, consequently, drive growth economic. Regele and Neck (2012) consider education as a critical
12 piece of this enviros that requires significant attention. Universities can be a fundamental piece of them by
13 contributing to their development with research (innovation and technology), knowledge, human capital, or
14 links with other economic or financial agents (Guerrero, Urbano, and Fayolle, 2016). Entrepreneurial ecosystem
15 elements are mutually interdependent and co-evolve in a territory (Stam, and van de Ven 2019). Under other
16 environmental conditions, different university entrepreneurial ecosystems (more active or passive) can generate
17 differences in levels of practical entrepreneurship they achieve.
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29 We studied two groups of university students located in the same geographical area. Given this proximity,
30 the students, who were at the beginning of their university careers, would have had similar previous academic
31 training in similar socioeconomic environments, although they may have different family backgrounds that
32 could affect the level of their entrepreneurial skills. The students were located in Guadalajara, Jalisco, Mexico,
33 and were divided into two samples: one from a public university (passive entrepreneurial ecosystem) and the
34 other from a private university (active entrepreneurial ecosystem). Guadalajara is the second-largest city in
35 terms of population in Mexico (INEGI, 2015).
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44 For the public university sample, we included students from two universities, University Centre of
45 Economic and Managerial Sciences (CUCEA) and Higher Technological Institute of Zapopan (ITS Zapopan),
46 to obtain a good representation of the different students in public universities. The University of Guadalajara,
47 to which CUCEA belongs, is a public university with the largest number of students in the region. For this
48 study, in September 2015, a total of 395 surveys were collected for the generation of new cohorts in the
49 university. The ITS Zapopan's sample was collected from ITS Zapopan's students in September 2015, raising
50 a total of 518 surveys for the generation of new cohorts. Combining the surveys from the two universities, the
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4 average age of the students was found to be 19.45 years. The sample consists of 59 percent males and 41 percent
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6 females.

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10 The private university sample was obtained from the Guadalajara Campus of Tecnológico de Monterrey,
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12 which is the second-largest campus for this institution in Mexico in terms of the number of students. We decided
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14 to study the entire student population of the Guadalajara Campus for the period beginning in August 2014. The
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16 total sample was 1,025 students, the average age of the students in this study was 18.33 years. The sample
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18 consisted of 48 percent males and 52 percent females.

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22 Then, the initial survey covered 1,939 students (1,026 from TEC, 395 from CUCEA, and 518 from ITS),
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24 which, when reviewed and cleaned, resulted in a total of 1,690 surveys.

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28 We also decided to evaluate the effect of temporality on the EI of university students immersed in the same
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30 university entrepreneurial ecosystem. A sample was taken in the private university during 2017 primarily to
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32 sixth-semester students who have, therefore, been at the university for three years, to validate the scales
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34 described above. In this way, we determined the validity of the information gathered in 2014 at the private
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36 university. This second database consisted of 279 subjects, which, when reviewed and cleaned, resulted in 217
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38 surveys that used the same questionnaire as in 2014.

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42 We assessed the reliability of the data analysis using a specific procedure. The first phase of this procedure
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44 focused on the descriptive analysis of the sample and the variables used in the study. Next, in addition to the
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46 descriptive analyses, we followed the process suggested by Orozco-Gómez (2016) which uses statistical tools
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48 to analyze the dimensionality, reliability, and validity of the scales. The analysis used the following techniques:
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50 (1) exploratory factor analysis; (2) Cronbach's alpha; and (3) confirmatory factor analysis (CFA). The statistical
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52 packages used for the analyses were IBM SPSS Statistics and IBM SPSS Amos, both in Version 22.

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57 A summary of the results of the average variance extracted (AVE) and critical relation (CR) of the CFA
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59 for the combined surveys and for the subsets of private and public universities is shown in Table 1. The AVE
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corresponding to the constructs of emotional competencies, SN, IE, ATT, and SE is greater than 0.5 in all three cases, thus complying with the discriminant validity.

Table 1: AVE and CR of CFA.

	Integrated		Private university		Public university	
	Average variance extracted	Critical relation	Average variance extracted	Critical relation	Average variance extracted	Critical relation
Emotional competencies	0.66	0.91	0.66	0.91	0.67	0.09
Self-awareness	0.27	0.52	0.25	0.5	0.32	0.58
Self-regulation	0.43	0.69	0.48	0.73	0.39	0.65
Motivation	0.47	0.72	0.49	0.74	0.44	0.7
Empathy	0.37	0.63	0.39	0.59	0.43	0.69
Social skills	0.59	0.85	0.63	0.87	0.54	0.82
Subjective norm	0.59	0.8	0.61	0.82	0.57	0.79
Entrepreneurial intention	0.53	0.82	0.5	0.79	0.57	0.84
Attitude	0.78	0.91	0.81	0.93	0.74	0.9
Self-efficacy	0.64	0.9	0.63	0.89	0.67	0.91

4. Results

4.1. Validity of the General Model

The next step in validating the hypotheses was to evaluate the adjustment to the proposed model as shown in Fig. 1 (CEIU). Analysis of structural equation modeling for the theoretical model was performed using the AMOS 22 software. The results obtained showed a good fit index ($Chi^2 = 1,782$; $p = 0.00$; *Non – Normed Fit Index* [NNFI] = 0.942; *Goodness of FIT* [GFI] = 0.937; *Comparative Fit Index* [CFI] = 0.949; ; *Root Mean Square Error of Approximation*[RMSA] = 0.044). In general, this model explains 83.2 percent of the variance among the students toward EI. The value of R^2 is greater than 0.800, which shows that the EI of the students is well supported, according to Hu and Bentler (1999). In addition, we can see that the model explains 31.8 percent of the variance in the ATT toward entrepreneurship and 39.5 percent of the variance in SE.

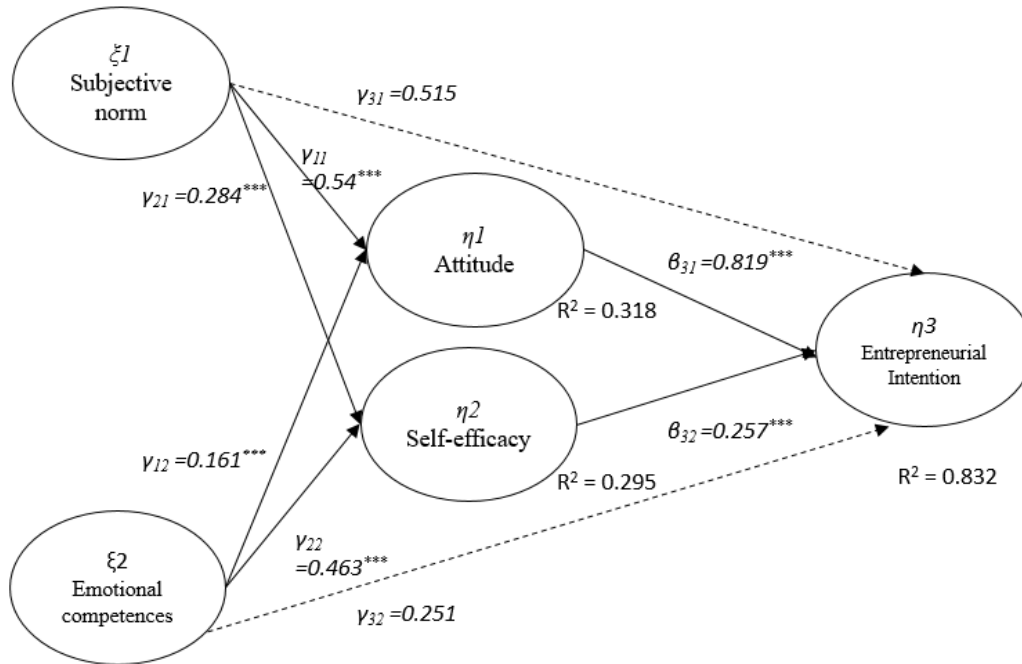
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4 In order to evaluate the overall fit of the structural model, we performed several GFI tests on the absolute,
5 comparative, and residual aspects of the adjustment. An element to consider is that the higher the probability
6 of χ^2 , the better the fit of the model to the data (Bollen 1989). The value of *NNFI*, *GFI* and *CFI* > 0.90
7 indicates a good fit (Hooper, Coughlan, and Mullen 2008). Additionally, the RMSEA was below 0.05, allowing
8 confidence intervals to be built for an acceptable fit (Hu and Bentler 1999). The following results were taken
9 as indicators of GFI:
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- 15 • *NNFI (Tucker – Lewis Index)* = 0.942 Values close to 1 indicate a good fit.
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- 17 • *GFI* = 0.937 Traditionally, a cut-off point of 0.90 is recommended for the GFI, where the closer the
18 value is to 1, the better the results are (Hooper, Coughlan, and Mullen 2008).
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- 20 • *CFI (de Bentler 1990)* = 0.949 The CFI must be greater than 0.90 to indicate that at least 90
21 percent of the covariance in the data can be reproduced by the model.
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- 23 • *RMSEA (Browne and Cudeck 1993)* = 0.044 Values below 0.05 indicate a good fit. The
24 distribution in the RMSEA sampling has been deduced (Hu and Bentler 1999), allowing one to build
25 confidence intervals. The limits of the confidence intervals should be less than 0.05 for the adjustment
26 to be acceptable.
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39 The load direction of the structural elements, the resistance, and the significant paths are illustrated in Fig.

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45 **Figure 2: Estimation of results of the theoretical model ($N = 1,690$).**
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* $p < 0.50$; ** $p < 0.01$; *** $p < 0.001$.

With respect to standardized parameter estimates, we found that SNs have a significant effect on ATT ($\gamma_{11} = 0.54$, $p < 0.001$) as does SE ($\gamma_{21} = 0.284$, $p < 0.001$), but the impact was not significant for EI ($\gamma_{31} = 0.515$, not significant). These results suggest that students who perceive approval from their reference groups concerning their decision to become an entrepreneur will have a more positive ATT and will be more likely to perceive themselves as being capable of creating a business. These findings lend support for hypotheses H1_a and H1_b, but not for hypothesis H1_c.

We also found that emotional competencies have a significant effect on ATT ($\gamma_{12} = 0.161$, $p < 0.001$) and SE ($\gamma_{21} = 0.463$, $p < 0.001$), but the impact was not significant for EI ($\gamma_{32} = 0.251$, not significant). These results suggest that students with a high level of emotional skills will have a better ATT about starting companies and will perceive themselves as being more capable of becoming entrepreneurs. These findings lend support for hypotheses H4 and H5, but not for hypothesis H3.

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4 Finally, the results showed that EI is significantly influenced by ATT ($\beta_{31} = 0.819, p < 0.001$) and SE
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6 ($\beta_{32} = 0.257, p < 0.001$), which supports hypotheses H2_a and H2_b.
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10 The R^2 -value was also considered. This value was revised according to Jöreskog (2000), who argued that,
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12 to interpret a structural equation equivalent to a regression equation, one should consider this statistic using the
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14 reduced format since R^2 calculated from structural equations does not have a clear interpretation. Thus,
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16 considering these guidelines for R^2 , the general results show that the proposed model (Fig. 2) explains 31.8
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18 percent of the variation in the ATT toward entrepreneurship among university students, 29.5 percent of the
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20 variation in the perception of SE toward entrepreneurship, and 83.2 percent of the variation in the EI of
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22 university students.
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27 Since a nonsignificant direct effect between two constructs necessarily implies the absence of influence
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29 (Hair, Clack, Babin, and Anderson 2010), a series of direct, indirect, and total effects analyses were also
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31 considered to determine whether there are causal dependency relationships among other variables in the
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33 specified model. The effects of a second-order factor on an indicator can reveal which measurement is most
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35 related to it (Bollen 1989). Once the direct and indirect effects were identified for each pair of constructs in the
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37 model, the product of the direct effects on the composite pathway was calculated to determine the total effect
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39 (Long and Bollen 1993).
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43 Table 2 shows the results of this test, which reveals indirect effects between some of the relationships in the
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45 proposed model. In the case of NS, this affects EI (0.515, $p < 0.001$) through ATT (0.540 x 0.819) and through
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47 SE (0.284 x 0.257). Likewise, in the emotional competencies, an indirect effect was found for EI (0.251, $p <$
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49 0.001), revealing an influence through ATT (0.161 x 0.819) and SE (0.463 x 0.257).
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54 **Table 2: Structural model results (direct, indirect, and total effects). Effects of SNs, ATT, SE, and**
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56 **emotional competencies on EI.**

Effect on	On	Estimate	Standar error	Critical relation	Direct effects ^a	Indirect effects ^a	Total effects ^a
Subjective norm →	Self-efficacy	0.225	0.02	11.109	0.284***		0.284***

Subjective norm	→	Attitude	0.575	0.027	21.142	0.540***		0.540***
Subjective norm	→	Entrepreneurial intention	1.39	0.071	19.639	0.000	0.515***	0.515***
Emotional competences	→	Self-efficacy	0.704	0.049	14.266	0.463***		0.463***
Emotional competences	→	Attitude	0.329	0.051	6.483	0.161***		0.161***
Emotional competences	→	Entrepreneurial intention	0.377	0.032	11.848	0.000	0.251***	0.251***
Self-efficacy	→	Entrepreneurial intention	0.338	0.027	12.496	0.257***		0.257***
Attitude	→	Entrepreneurial intention	0.800	0.027	29.136	0.819***		0.819***

***p<0.001

^a standardized

The global influence of the NS on EI is 0.515 ($p < 0.001$), whereas that of the emotional competencies is 0.251 ($p < 0.001$). Regarding global effects, emotional competencies primarily affect SE, whereas NS affects ATT. These results suggest that students who are strongly influenced by their reference groups, or who present a higher degree of emotional competence, will develop EIs through a more positive ATT and will have stronger perceptions of their capacity for business creation.

The results obtained in this analysis in relation to cognitive factors and the intention to undertake are consistent with previous findings and reflect the positive influence of ATT (Kautonen, Van Gelderen, and Tornikoski 2013; Karimi, Biemans, Lans, Chizari, and Mulder 2016) and of SE on the intention to undertake among university students (Moriano, Molero, Topa, and Lévy 2014). Tkachev and Kolvereid (1999) mentioned that values and norms can have positive effects on EIs from programs offered in higher education, such as courses on entrepreneurship, education about small business management, and programs on business networks. Additionally, Tsai, Chang, and Peng (2014) concluded that entrepreneurial ATT is affected by the SN, as presented in the model proposed here. In entrepreneurial university ecosystems, the SN increases its positive effect on SE, which, in turn, increases its effect on EI. Rauch and Hulsink (2015) found that entrepreneurial education reinforces EI and behavior.

4.2. Estimation of the Intention Model and Emotional Competencies Among University Students: A Multigroup Analysis Between Private and Public Universities

Once the reliability and validity of the measurement model were verified, a group comparison approach was used, as the construct of EI does not vary in the two subsamples. Regarding the separation of university by type,

it was thought that neither of the two subsamples had a small size so that it could carry the estimate of the model proposed in them (Aldás-Manzano, Lassala-Navarré, Ruíz-Mafé, and Sanz-Blas 2011). The reliability and validity of the measurement model were verified, so we reviewed its invariability by comparing the two groups (Hair, Black, Babin, and Anderson 2010). Next, the invariability (Steenkamp and Baumgartner 1998), the adjustment of the measurement model, and the adjustment of the structural model were verified. CFA was performed for both groups, which ensured that the measurement model has a good fit in each sample ($RMSEA < 0.05$, $CFI > 0.9$, and $NNFI > 0.9$). The results are shown in Table 3.

Table 3: Invariability of the measurement model, grouped by type of university.

Model	Chi ²	Degrees of freedom	P	Chi ² /Degrees of freedom	Root mean square error of approximation	Non-normed fit index	Comparative fit index	Difference in Chi ²	Difference in degrees of freedom	p
<i>Simple solution by group</i>										
Private university n=888	1186.573	407	0	2.915	0.046	0.940	0.948			
Public university n=802	903.953	407	0	2.221	0.039	0.955	0.960			
<i>Invariability of the measurement model</i>										
Without restriction	2090.516	814	0	2.568	0.030	0.947	0.953			
Equal factor load- Measurement	2115.605	836	0	2.531	0.030	0.948	0.953	25.089	22	0.29
Equal load- Structured	2119.237	840	0	2.523	0.030	0.948	9.53	28.721	26	0.32

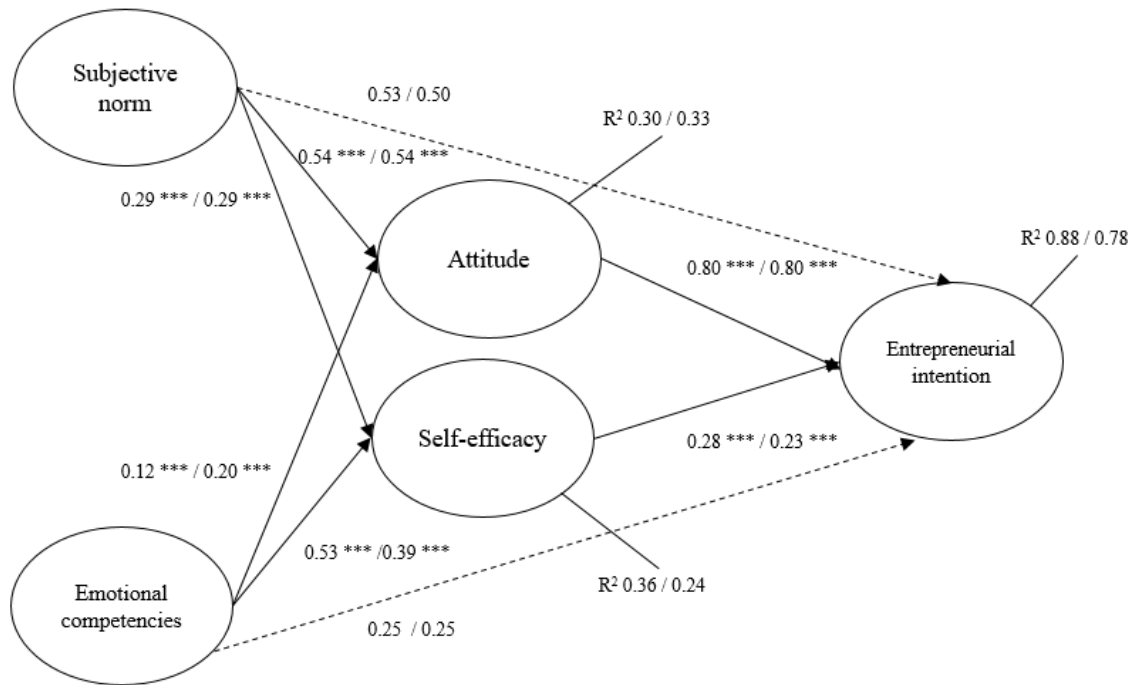
* $p < 0.50$; ** $p < 0.01$; *** $p < 0.001$.

The moderating effect of the type of university is verified as a variable predicting EI by comparing the trajectory coefficients obtained after executing the model separately for each subsample. That is, the next step was to check whether the factor structure (number of factors) was the same in the two subsamples. The analysis was performed through a multigroup estimate using the AMOS 22 software, according to Jaccard and Wan (1996). The value of the Chi² statistic and the degrees of freedom are the sum of those obtained previously (see Table 3). The Chi² test is still significant, and the rest of the indicators show that it is reasonable to assume that the factor structure is the same in the two samples ($RMSEA = 0.030$, $CFI = 0.953$, and $NNFI = 0.948$).

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4 Next, we imposed the restriction that the regression coefficients should be equal in both of the samples to
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6 check for the invariance of the factor loads. Constructs analyzed in the study were measured in the same way
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8 in both samples. Comparisons of the Chi²-values of the unrestricted model and of the equal factor loads were
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10 made. For the private university and the public university, the difference in the Chi²-values was 25.09, which
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12 is not significant ($p > 0.05$). These results show that, by restricting the factor loads to be equal between the
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14 groups, the adjustment of the measurement model is not impaired. We, hence, concluded that there is no
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16 variation in the way the constructs are measured in the two groups.
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20 Having established the reliability of the indicators, thus guaranteeing equivalence in the measurement model
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22 and structural parameters, the structural loads were compared. With respect to the estimates of standardized
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24 parameters (see Fig. 3), the effect of the SN on SE was virtually identical in the samples from the two
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26 universities (0.29 versus 0.29); the effects of the SN on ATT were also virtually identical for both samples (0.54
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28 versus 0.54), whereas the values of the SN on the EI exhibited some minimal differences between the samples
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30 (0.53 versus 0.50, nonsignificant).
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35 **Figure 3: Reported trajectory coefficients for private university/public university subgroups N-private**
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37 **= 888/N-public = 802.**
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* $p < 0.50$; ** $p < 0.01$; *** $p < 0.001$.

These results suggest that students at both types of universities value the approval of their reference group regarding their decision to become an entrepreneur and will have a more positive ATT toward and also, albeit to a lesser extent, greater confidence in their own abilities. The effect of emotional competencies on ATT (0.12 versus 0.20) was more pronounced for the public university sample than for the private university sample, and SE (0.53 versus 0.39) was clearly stronger in the sample from the private university compared to the public university, but EI was still not significant for either (0.25 versus 0.25, not significant). These results suggest that students who have a higher degree of emotional competence and who are in the public university will have a more positive ATT and will perceive themselves as being more capable of becoming entrepreneurs compared to the students of the private university. The results also showed that EI is significantly influenced by ATT, with an intense effect for both samples (0.80 versus 0.80). On the contrary, private university students with high emotional skills will feel more confident about becoming entrepreneurs compared to public university students (0.53 versus 0.39).

It is necessary to emphasize that the parents of private university students have mostly university studies as well as the fact that the main occupation of these parents is to be entrepreneurs (55 percent of the cases). It has been indicated in previous studies (Schmitt-Rodermund 2004) that the entrepreneurial status of parents plays an essential role in the development of EIs in the younger generations, with a positive correlation between entrepreneurial parents and the desire of their children to become entrepreneurs in their future life (Fellnhöfer and Puumalainen 2017), and this propensity to be an entrepreneur is specially reinforced when the parents are successful entrepreneurs (Reynolds, Carter, Gartner, and Greene 2004).

4.3. Estimation of Intention and Emotional Competencies: A Multigroup Analysis over Time

In order to assess temporality in the proposed model, we used a group comparison approach (Fernández-Pérez et al., 2019) in the most entrepreneurial ecosystem, with the intention of testing the effectiveness of the contribution that the most entrepreneurial ecosystems entail and its effect on entrepreneurial intention through their emotional or cognitive antecedents, as the construct of EI did not vary across the subsamples in 2014 (“without ecosystem effect”) and within the 2017 group (“with ecosystem effect”). The methodology explained above was used for this analysis. The results of the factor analysis, which shows that the measurement model has a good fit in each sample, are shown in Table 4. There were no significant differences in the measurement model between the 2014 samples (“without effect”) and the 2017 sample (“with effect”) ($RMSEA < 0.05$, $CFI > 0.9$, and $NNFI > 0.9$).

Table 4: Invariability of the measurement model, grouped by samples over time.

Model	Chi ²	Degrees of freedom	P	Chi ² /Degrees of freedom	Root mean square error of approximation	Non-normed fit index	Comparative fit index	Difference in Chi ²	Diference in degrees of freedom	P
<i>Simple solution by group</i>										
2014 “without effect” n= 888	1186.573	407	0	2.915	0.046	0.940	0.948			
2017 “with effect” n=217	714.796	407	0	1.756	0.059	0.931	0.940			
<i>Invariability of the measurement model</i>										
Without restrictions	1902.566	814	0	2.337	0.035	0.938	0.946			
Equal factor load-Measurement	1931.009	836	0	2.309	0.034	0.939	0.945	28.443	22	0.16

Equal factor load- Structured	2139.449	871	0	2.456	0.036	0.932	0.937	236.883	57	0
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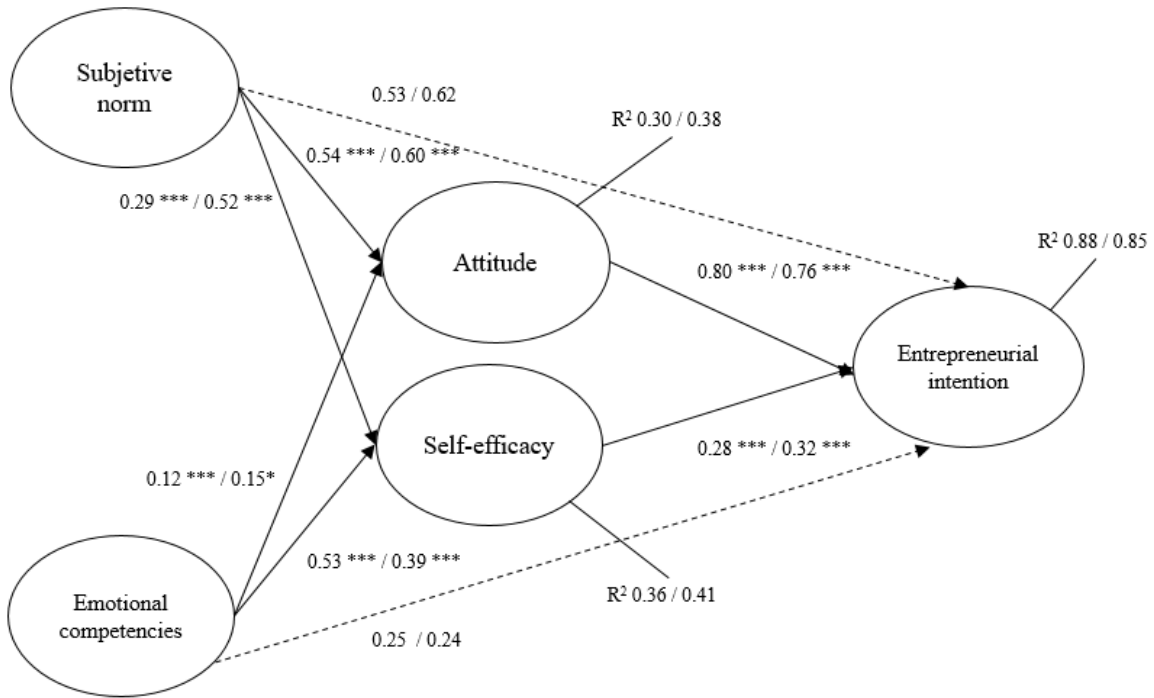
* $p < 0.50$; ** $p < 0.01$; *** $p < 0.001$.

The moderating effect of time in a university entrepreneurial ecosystem as a variable that predicts the EI was verified by comparing the trajectory coefficients obtained after estimating the model separately for each subsample. The next step was to check that the factor structure was the same in the subsamples. This method was performed through a multigroup estimate using the AMOS 22 software. This process followed that of Jaccard and Wan (1996).

The Chi^2 -value and degrees of freedom are the sum of those previously obtained (see Table 4) and the Chi^2 test is still significant. The remaining indicators showed that it is reasonable to assume that the factor structure is the same in both samples ($RMSEA = 0.034$, $CFI = 0.945$, and $NNFI = 0.939$).

Next, we imposed the restriction that the regression coefficients should be equal in the two samples to check for invariance in the factor loads. This implied that the constructs analyzed in the study were measured the same way in both samples. A comparison of the Chi^2 -value of the unrestricted model and that of the equal factor loads was made. For the 2014 sample (“without ecosystem effect”) and the 2017 sample (“with ecosystem effect”), the difference in the Chi^2 -values was 28.44, which is not significant ($p > 0.05$). These results showed that, by imposing the restriction that the factor loads should be equal between the groups, the adjustment of the measurement model was not impaired. We, hence, concluded that there was no variation in the way the constructs in both groups were measured. Once the reliability of the indicators was established, thus ensuring equivalence in the measurement model and structural parameters, the structural loads were compared. With respect to the estimates of standardized parameters (see Fig. 4), the effect of the SN on SE was different in the samples without the effect of having spent more time in a university entrepreneurial ecosystem (0.29 versus 0.52). The effects of the SN on ATT were more similar, although there was an increase in the effect on the sample taken in 2017, after the students had spent more time in the ecosystem (0.54 versus 0.60), whereas the values of the SN on EI exhibited some insignificant differences for both samples (0.53 versus 0.62, nonsignificant).

Figure 4: Reported trajectory coefficients for subgroups 2014 (“without effect”) and 2017 (“with effect”), N-without effect = 888/N-with effect = 217.



* $p < 0.50$; ** $p < 0.01$; *** $p < 0.001$.

These results suggest that, regardless of the length of time spent in a university entrepreneurial ecosystem, the students perceive an increase in the approval of their reference group with respect to their positive ATT, but university students who have not yet spent time in an entrepreneurial ecosystem may feel less confident about their ability to become an entrepreneur. The effect of emotional competencies on ATT (0.12 versus 0.15, * $p < 0.50$) was more significant for university students who had spent less time in a university entrepreneurial ecosystem; as the amount of time in the ecosystem increased, the significance of emotional competencies with respect to ATT diminished and the change in value, despite being slightly positive, was minimal. The impact

of emotional competencies on SE (0.53 versus 0.39) was clearly stronger in the sample without the effect of time in the university entrepreneurial ecosystem compared to the sample with the time effect, but it was still nonsignificant for EI (0.25 versus 0.24, nonsignificant).

These results suggest that the impact of emotional competencies continues over time but is less significant for having a positive ATT toward entrepreneurship and contributes less to one's ability to become an entrepreneur. The results also showed that EI is significantly influenced by ATT, with an intense effect for both samples (0.80 versus 0.76), although it decreases slightly over time. On the contrary, students who have spent time in a university entrepreneurial ecosystem feel a little more confident in their abilities to become entrepreneurs compared to those who have not spent much time in that environment (0.28 versus 0.32). All of the effects in this multigroup comparison with and without the effect of time spent in a university entrepreneurial ecosystem had a p -value of < 0.001 , except for the effect of emotional competencies toward ATT ($p < 0.05$). Based on these results, Table 5 summarizes the acceptance or rejection of our various hypotheses.

Table 5: Acceptance or rejection of the hypotheses made.

Hypothesis	Relation	Acceptance or rejection
H1 _a	NS has a direct and positive influence on self-efficacy in recognition of opportunities among university students.	Supported
H1 _b	NS has a direct and positive influence on attitude toward entrepreneurship among university students.	Supported
H1 _c	NS has a direct and positive influence on the EIs of university students.	Not supported
H2 _a	The attitude toward entrepreneurship among university students directly and positively affects EIs.	Supported

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H2 _b	Self-efficacy, in recognition of opportunities, has a direct and positive influence on EIs among university students.	Supported
H3	Emotional competencies directly and positively affect EIs.	Not supported
H4	Emotional competencies directly and positively affect attitude toward entrepreneurship.	Supported
H5	Emotional competencies directly and positively affect entrepreneurial self-efficacy.	Supported

5. Conclusions

In this study, our central model was to analyze how emotional competencies influence the EIs of young university students enrolled in different university entrepreneurial ecosystems. A CEIU model was proposed as a theoretical model for the configuration of EIs among students, and it was validated in two types of universities, public and private, in the city of Guadalajara, Jalisco, Mexico.

No evidence of a direct relationship between emotional competencies and EIs was found. Obviously, the fact that a new university student has a certain level of emotional competency will not necessarily lead him or her to start a business. Hence, it can be concluded that the more these emotional competencies are strengthened, the more likely these students will consider entrepreneurship as a career option; with the improvement of their cognitive backgrounds, they become more likely to develop an EI.

Consistent, we showed that emotion and cognition can be combined, a situation that occurs in the two types of universities assessed in this study. We also showed that emotional competencies provide valuable attributes

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4 (for example, cognitive flexibility). Elements that help individuals counteract cognitive bias, which can hamper
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6 the recognition of opportunities, should be considered, such as overconfidence (Simon and Shrader 2012). The
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8 study, hence, suggested that a cognitive explanation can be found for the “intuition” mentioned by many
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10 entrepreneurs and researchers (Uygur 2017).
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14 Another essential element of our results was consistent with Schøtt, Kew, and Cheraghi (2015), who
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16 commented that this generation of young people, especially those between 18 and 24 years of age, show less
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18 confidence in their ability to run a company. This group of new university students receive entrepreneurship
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20 education but demonstrate low SE, which raises concerns about the quality of the companies that they might
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22 create and the entrepreneurial training that they are receiving. SE was shown to be the weakest predictor of EI
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24 among Mexican students, in contrast with results from other countries (Liñán and Chen 2009). Therefore, this
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26 issue must be carefully considered in the design of entrepreneurial training programs. Institutions should seek
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28 to strengthen the students’ sense of SE in different ways, such as through domain experience (repeated
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30 performance), vicarious experience, and modeling (Bandura 1997).
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35 SE can be promoted through the development of entrepreneurship education (Sawyer, Dong, Ozakaya, and
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37 Emerson 2016), but considering the elements, we are commenting in terms of emotional competencies.
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39 Although we found that emotional competencies do not directly affect EIs, there was an indirect effect that can
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41 allow students’ entrepreneurial proposals to be of higher economic value, with higher probabilities of generating
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43 employment, mainly due to the increase in students’ self-confidence. It is vital that universities not merely teach
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45 business skills to students. Young university students need to combine emotional and cognitive elements to
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47 increase their entrepreneurial orientation, given that emotional competencies support all successful personal
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49 efforts (Sánchez 2011).
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54 For new students in both public and private universities, SE is low compared to positive attitude. Therefore,
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56 it is recommended that educational institutions help students have greater confidence in themselves and their
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58 abilities so that they can make a career choice with more conviction. If emotional skills improve, the students
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60 will have greater self-confidence. SE, according to Schøtt, Kew, and Cheraghi (2015), is the weakest element
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4 in young people aged 18 to 24 in the different countries studied in the GEM, regardless of the type of university
5 entrepreneurial ecosystem. Therefore, the variable of EI should be a top priority.
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10 Considering that the study focused on new university students who have not yet received entrepreneurship
11 education, the main differences among them must result from differences in their demographics and family
12 backgrounds. We found that emotional competencies in the private university were higher than the SE found
13 among students in a public university. On the other hand, in public universities, emotional competencies are
14 more related to a positive attitude than in private universities. This suggests that there could be more effective
15 types of experiences, role models, curricula, and faculty preparation, depending on the university
16 entrepreneurial ecosystem, in terms of supporting emotional competencies that may be directed more toward
17 attitude or SE. Although we do not have clear evidence of the type of emphasis to be given, we did find evidence
18 that entrepreneurship education, with due attention to emotional competencies, exerts a positive influence on
19 the EIs of students, improving their attitude and SE.
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33 In the private university, the students are typically not the first generation of university students and their
34 parents' occupations are likely to be related to entrepreneurship. Geldhof and Gonzalez (2014) mentioned that
35 the social capital of young people with parents who are self-employed serves as a role model and provides tacit
36 knowledge that promotes the search for self-employment or the generation of entrepreneurship. In private
37 universities, our study showed that SE is reinforced through emotional competencies, and these students not
38 only will continue to be entrepreneurial, like their parents, but also will feel more confident in themselves.
39 Hence, we may be able to create projects of mayor contribution, which would allow the generation of
40 employment and decent fees (Hathaway 2013).
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52 The public university studied in this research can be classified as an apathetic or indifferent environment.
53 Many of the students were the first generation of university students in their families, according to the
54 demographic data obtained. This type of students does not have the experience of an entrepreneurial figure at
55 home. Hence, we recommend that public universities offer greater exposure to successful entrepreneurs in the
56 classroom as the students do not have that opportunity at home.
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7 Tecnológico de Monterrey, where we reviewed the effect of students having been in a university
8 entrepreneurial ecosystem for three years, is recognized as one of Mexico's most important institutions in terms
9 of its contributions to entrepreneurship. The students of this university, since they began their admission
10 process, are aware that they are entering a university that encourages entrepreneurship. The results of this study
11 showed an SN that, over time, will have a higher value for the student, whereas the reference groups that affect
12 an individual's entrepreneurial motivation can provide the support and resources required to start a company
13 (Liñán and Santos 2007). The impacts on this entrepreneurial ecosystem are the pressure that their own family
14 is no stranger to this.
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25 The results of this study also allowed us to observe that SE affects intentions. People with high levels of
26 confidence in their abilities to start a business are more likely to be able to establish a successful company, and
27 this expectation can motivate their behavior with respect to entrepreneurship. In other words, strong SE about
28 running a business positively affects EIs by generating a positive attitude toward entrepreneurship (Tsai, Chang,
29 and Peng 2016).
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37 Our results can be helpful in developing proposals for university curricula. These considerations are also a
38 wake-up call to academia as addressing the issue of emotional competencies in entrepreneurship education
39 involves working on the teacher's own development to improve results in the classroom. Although some efforts
40 have been made to prepare teachers at the primary and secondary levels (Garrido-Nataren and Gaeta-González
41 2016), little research on this has been carried out at the university level.
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47 This study presents some limitations. First, although the anonymity assured to the participants reduces bias
48 (Konrad and Linnehan 1995), some degree of social desirability bias may remain (Podsakoff and Organ 1986).
49 The second limitation is that the study included intentions and ambitions, and these might evolve and change
50 over time (Krueger 2007). Nevertheless, our approach reduced the magnitude of this problem; dynamic
51 characteristics and causal factors can determine whether the relationships are based on theoretical foundations
52 (Hair et al. 1999). Third, the use of these types of samples is frequent and convenient in the investigation of
53 entrepreneurial initiatives (Mueller and Thomas 2001). Analyzing behaviors in university students has both
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4 positive and negative aspects (Zhang, Wang, and Owen 2015): Many large companies started when the founders
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6 were university students (for example, FedEx, Dell, Facebook). Besides, there is still a large population of
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8 university students who are not entrepreneurs. Finally, as it was not the aim of this study to examine business
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10 conduct as such, it is still relevant to study how, over time, EI is transformed into action. Therefore, further
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12 research into this question is needed, utilizing longitudinal studies and in different contexts of university or
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14 even cultural, entrepreneurial ecosystems to corroborate these results. Other variables that affect students'
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16 perception when undertaking, other methodologies, or the effects of collaboration networks inside and outside
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18 the university could also be considered.
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EMOTIONAL COMPETENCIES AND ENTREPRENEURSHIP: MODELING UNIVERSITIES

International Entrepreneurship and Management Journal

Dear Editor,

We have consciously revised our paper, following the reviewer's commentaries and recommendations, and now we are in the disposition of submitting the revised manuscript. We would like to thank you all for the opportunity of improving our work. Here enclosed, we comment on the changes that have been made. Our individual responses to your specific suggestions follow in the order in which you listed them. Also, the changes are included in the revised manuscript in another color to facilitate its revision.

Yours sincerely

Reviewers' comments:

Reviewer #1: Dear Authors, here you are, my impressions about the draft. I hope they will be helpful to you.

Thank you for your supportive feedback.

- In the "Literature review" and "Methodology" is declared that your analysis, relay on the university entrepreneurial ecosystems, so we need and extended characterization of the differences in the ecosystem beyond the private/public titularity of the universities to better understand the differences, that may be implicit or explicitly showed in your final conclusions, (see: Stam, E. and van de Ven, A., (2019). Entrepreneurial ecosystem elements. Small Bus Econ (2019). <https://doi.org/10.1007/s11187-019-00270-6>).

In the "Methodology" section, the necessary arguments have been included to broaden the characterization of university entrepreneurial ecosystems following the indications and suggested references.

- In the multigroup analysis over time (page 18 "without ecosystem effect" vs "with ecosystem effect" (TEC sample), even if the EI shaping model do not vary across the subsamples, the sample exposed to the temporalization is from one of the educational ecosystem which most promotes entrepreneurship, so results may vary if you have had consider temporality of both entrepreneurial ecosystems. This point needs additional explanation, to better justify your analysis.

Only the sample corresponding to the most promoting entrepreneurial ecosystem was exposed to time; because we wanted to see the contributions of all the elements that make a more entrepreneurial ecosystem, somehow, regarding the effectiveness and variety of the emotional and cognitive antecedents of the entrepreneurial intention. The initial public / private comparison served as the initial control group to see the evolution of the most entrepreneurial over time. In this sense, we follow the line of Fernández-Pérez et al. (2019) but applied to a broader context than merely giving entrepreneurship courses and its effect on the entrepreneurial intention of the students. The ecosystem effect was addressed as a whole. Obviously, it would be convenient and more enriching to make a temporary comparison of both ecosystems. However, we do not have the data as the initial goal was the one mentioned above.

Again, thank you very much for your valuable and constructive suggestions. We sincerely believe that your comments have helped us to improve the accuracy and empirical clarity of the paper. We hope that our revisions appropriately address your suggestions and generate a relevant contribution to the literature.

Reviewer #2: The Introduction section is correct, but a paragraph is missing (at the end of the section, before the last paragraph in which the authors explain the gap that their research aims to cover.

Thank you for your supportive feedback. In the revised paper, we have included a statement of the aim of the research where you indicated it in the introduction.

The section "Literature Review" is well explained, I advise the authors to review and include the following papers:

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Thank you very much for help us with the theoretical framework. We have revised all the provided references and incorporated into the revised manuscript.

The methodology used is adequate and consistent with the objectives of the work.

Thank you for this positive comment.

The results are robust and in my opinion constitute one of the strengths of the present study.

Thank you for this positive comment.

I consider that the authors should include within the Conclusions section a subsection of "Limitations of the investigation" and another of "Future lines of investigation".

We have incorporated the two suggested subsections into the manuscript: limitations and future lines.

The bibliography used is good, since it includes the main works on emotional intelligence and entrepreneurship, as well as recent studies in impact magazines.

Thank you for this positive comment.

Again, thank you very much for your valuable and constructive suggestions. We sincerely believe that your comments have helped us to improve the accuracy and empirical clarity of the paper. We hope that our revisions appropriately

address your suggestions and generate a relevant contribution to the literature.