PERSONALITY OF THE ENTREPRENEUR AND ITS RELATIONSHIP WITH INNOVATION IN MICRO AND SMALL ENTERPRISES IN THE ECUADOR-COLOMBIA BORDER CONTEXT

PERSONALIDAD EMPRENDEDORA Y SU RELACIÓN CON LA INNOVACIÓN EN MICRO Y PEQUEÑAS EMPRESAS EN EL CONTEXTO FRONTERIZO ECUADOR – COLOMBIA

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Abstract

The purpose of this study is to determine the relationship between the personality of the entrepreneur (emotional stability, sympathy, conscience, openness to experience, extraversion) and business innovation. It is based on the Upper Echelons Theory. Therefore, 413 surveys of 219 Ecuadorian entrepreneurs and 194 Colombian entrepreneurs of micro and small companies were collected in the border context of Ecuador and Colombia, specifically in the Carchi Province and the Nariño Department in times of pandemic. The data collected were processed in SPSS by using hierarchical regressions. The main findings allowed determining that there is a positive and meaningful relationship between the following personality traits of the Ecuadorian entrepreneur: emotional stability, openness to experience and awareness of innovation ($\beta = 0.31$, $p<0.001$; $\beta = 0.36$, $p<. 0.001$; $\beta = 0.24$, $p<0.001$). In the case of the Colombian entrepreneur, it was found a negative and non-meaningful relationship in the traits of emotional stability with innovation ($\beta = -0.10$). On the other hand, the relationship of Colombian entrepreneurs with conscious personality traits with innovation was positive and non-meaningful ($\beta = 0.10$).

Keywords: Personality, entrepreneur, innovation, border context, Ecuador, Colombia.

Resumen

El objetivo de este estudio es determinar la relación entre la personalidad del emprendedor (estabilidad emocional, simpatía, conciencia, apertura a la experiencia, extraversión) y la innovación empresarial. Se basa en la teoría de los niveles superiores. Por lo tanto, se recolectaron 413 encuestas a 219 empresarios ecuatorianos y 194 empresarios colombianos de micro y pequeñas empresas en el contexto fronterizo de Ecuador y Colombia, específicamente

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en la Provincia del Carchi y el Departamento de Nariño en tiempos de pandemia. Los datos recolectados fueron procesados en SPSS mediante el uso de regresiones jerárquicas. Los principales hallazgos permitieron determinar que existe una relación positiva y significativa entre los siguientes rasgos de personalidad del emprendedor ecuatoriano: estabilidad emocional, apertura a la experiencia y conciencia de innovación ($\beta = 0.31$, $p<0.001$; $\beta = 0.36$, $p<. 0.001$; $\beta = 0,24$, $p<0,001$). En el caso del emprendedor colombiano se encontró una relación negativa y no significativa en los rasgos de estabilidad emocional con la innovación ($\beta = -0,10$). Por otro lado, la relación de los emprendedores colombianos con rasgos de personalidad consciente con la innovación fue positiva y no significativa ($\beta = 0,10$).

Palabras clave: Personalidad, emprender, innovación, contexto fronterizo, Ecuador, Colombia

Introduction

The personality of business leaders, according to Hambrick (2007), is one of the main indicators to try to predict their future behavior, and could explain the differences between CEOs in the efficiency of the design and implementation of strategies, decision-making methods and company performance (Schepers et al., 2013).

Despite the relevance of this issue, authors such as Kelleci et al. (2019), suggest that there are few studies that compare the personality of the entrepreneur with factors that affect the performance of companies such as innovation.

In this context, it is worth asking what relationship could exist between the personality of the entrepreneur and the innovation of micro and small companies? The question suggests that the personality of the person who leads the company is key to achieving the survival, growth and permanence of such companies. in the market (Kelleci et al., 2019; Blumentritt et al., 2007).

Whoever manages the company is primarily responsible for performance in general, the design of the business strategy and the implementation of innovation processes (Prasad and Junni, 2017), in the case of micro and small companies due to the lack of formalization of the processes could affect the implementation of processes that allow survival in the changing market that is becoming more and more competitive.

The entrepreneur, being the one who leads the management processes through his personality, is responsible for making the decisions that allow him to improve his performance through innovation.

Most of the studies on the personality of the manager, during the last 35 years, focus on different aspects of the performance of organizations, including strategic planning (Neely et al., 2020); strategic implementation (Gupta et al., 2018); and risk decision making (Benischke et al., 2018); in financial performance (Harrison et al., 2019); and in improving competitiveness (Herrmann and Nadkarni, 2013).

However, the studies have not considered what type of relationship may exist between the personality of the entrepreneur and innovation; although the study by Prasad and Junni (2017) explains that the organizational identification of the CEO, as well as the propensity for risk, can improve the company's innovation. However, its effectiveness depends on the size of the organization.

In order to contribute to the academic field, this research is proposed to cover the knowledge gap related to the study of the possible relationship of the personality of the entrepreneur measured through the five traits proposed by Costa and McCrae, (1992); and innovation (Hauswald & Hack, 2013), because the personality of the entrepreneur could become a determining element in the implementation of innovation processes of micro and small companies in the border context of Ecuador and Colombia.

Literature review

The literature review begins with the search for relevant research in the field of micro and small enterprises, considering as the main reference base some articles from the 50 main journals: The Financial Time, Web of Science, Wiley Online Library, Taylor & Francis Journals, Springer Link, ScienceDirect – Elsevier, and SAGE Journals, using mainly three keywords: (a) Entrepreneur personality, (b) business innovation, and (c) micro and small businesses.

The theory of upper echelons was proposed by Hambrick and Mason in 1984, to formulate this theory they considered an approach oriented towards the organization's dominant coalition, that is, those who exercise authority over the management of a company, in this case the entrepreneur.

The general postulate of upper echelon theory states that organizational performance, both strategies and effectiveness, are taken to reflect the values and cognitive foundations of the organization's powerful actors (Hambrick & Mason, 1984). Overall, many authors mention that there is a strong relationship between the attributes of human capital and business innovation.

That is to say that, in the survival of a company, human capital is a determinant of the motivating dedication and the preferences of the entrepreneur to continue the business activity. According to the Vroom expectancy theory of value(Caliendo, M; Goethner, M; Weißenberger, YM, 2020), point out the role played by motivation to implement business processes, which is influenced by the expectation that the action will lead to valued results.

In this sense, an entrepreneur's persistence decision can influence the motivation to persist by affecting expectancy (that is, the entrepreneur's belief in running a successful business) and value (that is, the perceived desirability of the expected performance of the business). new company), from what has been indicated, the influence of personality for the decision made by the entrepreneur is evident.

According to Holland and Shepherd (2013), cited by Caliendo et al., (2020), previous knowledge and skills help the entrepreneur define, understand and respond to the challenges and obstacles they face when managing a company that is starting and it presents great possibilities of growth; This is how, faced with a higher expectation and an evaluation of the favorable expected results, the entrepreneur has a greater motivation to persist, which is related to attitudes, values, and personality.

Overcoming these challenges and increasingly believing in one's ability to control events will increase one's expectations of business success (Urbig & Monsen, 2012 cited by Caliendo et al., 2020).

From this point of view, entrepreneurship experts consider that there may be important relationships between individual personality traits and entrepreneurship; One of the most commonly applied personality constructs is the five-factor personality model (Barrick, Mount, & Gupta, 2003; Rauch & Frese, 2007; Schmitt-Rodermund, 2004, 2007; Zhao & Seibert, 2006 cited by Caliendo et al., 2020), which establishes the five broad dimensions of personality: openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability.

Patel and Thatcher (2014) cited by Caliendo et al. (2020) found that less open and more neurotic people are more likely to persist in self-employment, while Ciavarella et al. (2004), cited by Caliendo et al. (2020), demonstrate the importance of awareness for long-term business survival. Caliendo et al. (2020), state that there is a positive link between agreeableness and self-employment abandonment, while no significant relationship can be found for the other traits of the big five.

In conclusion, they affirm that it should be taken into account that, although persistence is a prerequisite to exploit the potential of a business opportunity, high persistence does not

necessarily lead to positive results, it depends on how entrepreneurs react to the environments changes and adversity (Holland & Shepherd, 2013 cited by Caliendo et al., 2020).

On the one hand, there is evidence that persistent entrepreneurs with high resilience use their ingenuity to adapt and improve their business performance (Ayala and Manzano, 2014 cited by Caliendo et al., 2020); on the other hand, staying with a previously chosen course of action, but failing, is a sign of a dangerous escalation of commitment.

In this case, entrepreneurs overcommit to their original strategies and react to negative comments by investing and staying with the same plan for too long, which is detrimental to the implementation of innovation processes (McCarthy et al., 1993 cited by Caliendo et al., 2020).

On the other hand, according to the entrepreneurial personality traits and the environmental variables that affect the business intention itself comprise what is called entrepreneurial potential, it is likely that skills by themselves are not a sufficient reason for people to want to be entrepreneurs. This interest in business could also be because they personally want to perceive an intrinsic reward or personal goals that could be achieved through entrepreneurship. (Ward et al., 2019)

Previous work experience has been found to influence interest in entrepreneurship (Arenius and Minniti, 2005 cited by Ward et al., 2019), as well as entrepreneurial experience itself (Miralles et al., 2015 cited by Ward et al., 2019); and having entrepreneurial parents (Kuckertz and Wagner, 2010 cited by Ward et al., 2019), although this is debatable in terms of intentions (Lizar et al., 2015).

Some authors have also found that optimism is a driver for business creation, since it takes advantage of the perception that its projects will be successful (for example, Ozaralli and Rivenburgh, 2016 cited by Ward et al., 2019).

Various authors such as Zisser et al. (2019), state that personality factors related to risk and high goal-focused behavior may be more relevant to entrepreneurial intention than general positive beliefs about oneself and one's interpersonal skills.

Previous studies of the “Big Five” personality traits (Goldberg, 1992, cited by Woo, HR 2018), consisting of neuroticism, extraversion, openness, agreeableness, and conscientiousness, have widely suggested that higher levels of extraversion, openness to experience and awareness are related to entrepreneurship (Obschonka & Stuetzer, 2017) Zhao et al.(2010), cited by Woo, HR (2018), conducted a meta-analysis which concluded that openness and awareness were strongly associated with business intentions and business performance.

Personality traits that are likely to have an impact on entrepreneurship could be extraversion, as it is associated with energy, dominance, assertiveness, and ambition (Costa & McCrae, 1992; Hurtz & Donovan, 2000, cited by Woo, HR 2018).

Extroverted people are more likely to seek emotion, stimuli and be positive and optimistic, so they can create creative conditions to generate innovative business ideas (Burtăverde et al., 2017 cited by Woo, HR., 2018).

Therefore, extraversion could lead a person to engage in more innovative intrapreneurial endeavors than those who choose more traditional jobs (Farrukh et al., 2016; Sinha and Srivastava, 2013, cited by Woo, HR 2018). The results empirically demonstrated that professional adaptability somehow mediated the relationships between personality traits and intrapreneurship. Some personality traits were selected as common predictors with reference to entrepreneurship or intrapreneurial research.

Many theorists are currently trying to develop an analysis of personalities made up of basic traits with the aim of analyzing the relationship between them and the results that a company could have (Hough and Schneider, 1996; Hough, 2003, cited by Woo, HR 2018). Therefore, a number of measures such as the HEXACO questionnaire have been used to obtain more significant results on the relationship between the traits of the entrepreneur with business results.

The proactive personality is the most prominent of the composite variables (Mayor et al., 2006, cited by Woo, HR 2018), and has been considered a benchmark in the analysis of the significant relationship with business results. (Jiang, 2017; Uy et al., 2015; Vandenberghe and Ok, 2013, cited by Woo, HR 2018).

Research on personality has been developed from different angles, for example Bucciol and Zarri (2017), mention that personality is a relevant side, but until now very neglected in the relationship of investors with their money, taking into account how the traits of personality, can affect the propensity of investors to assume financial risks, being an important source of variation in their portfolio decisions, the results of said investigation manage to verify that the hypothesis related to personality traits are positively and significantly correlated with the propensity to take risks in the financial field.

Bucciol and Zarri (2017), point out that personality traits have an important tradition in psychology, only recently have economists begun to examine their impact on economic variables. In particular, since in personality psychology the so-called "Big Five" model has so far proved to be successful in many domains, the present investigation uses this model to identify the relationship between personality traits and personality. Innovation in micro and small companies in the border context of Ecuador and Colombia.

The key personality traits and the facets studied within this framework also have a significant impact on the financial decisions of entrepreneurs and their implementation of innovation processes; however, due to the heterogeneity of the results they show, they can become a benchmark for the decision making, for example, from the research carried out, it was identified that personality characteristics are relevant, since it was evidenced that there are personality traits that have significant negative effects on financial risk taking.

Cynical Hostility shows a negative correlation with both stock ownership and stock participation. (Bucciol and Zarri, 2017). Agreeableness is negatively related to stock ownership, while anxiety is negatively associated with stock ownership.

The "Big Five" is one of the most widely used taxonomies in management and psychology literature (Costa & McCrae, 1992; Deck et al., 2008, cited by Bucciol & Zarri, 2017). This model subsumes a wide variety of personality attributes (Lonnqvist et al., 2015, cited by Bucciol & Zarri, 2017), and at the broadest level of abstraction, postulates that five traits (openness to experience, conscientiousness, extraversion, conscientiousness and emotional stability) are fundamental and universal and that an individual's score on these dimensions is characterized by a stable pattern of thoughts and feelings (Rustichini et al., 2012, cited by Bucciol and Zarri, 2017).

According to Bucciol and Zarri (2017), points out that the relevant personality traits also include cynical hostility, anxiety and anger, however, it is important to note that, compared to the Big Five model, the relationships between these three traits and the economic results have received much less attention in empirical studies, so the present study, based on the theoretical analysis carried out on the theory of upper echelons proposed by Hambrik and Mason (1984), and the results of investigations that relate to the personality (five big according to Costa and McCrae, 1992) of the entrepreneurs with variables such as business performance, financial risk, implementation of strategies, raises the following hypotheses (figure 1):

H1Emotional stability (neuroticism) is positively related to innovation in micro and small businesses in the commercial sector

H2Extraversion is positively related to innovation in micro and small businesses in the commercial sector

H3Openness to experience is positively related to innovation in micro and small businesses in the commercial sector

H4Agreeableness is negatively related to innovation in micro and small businesses in the commercial sector

H5Consciousness (scrupulousness) is positively related to innovation in micro and small businesses in the commercial sector

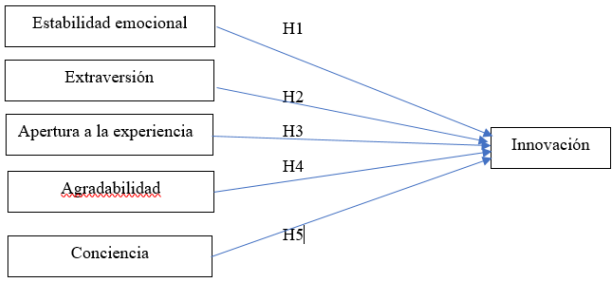

Figure 1. *Proposed theoretical model*

Materials and methods

The research is a quantitative, correlational and non-experimental cross-sectional study, it uses the hierarchical regression model to test the hypotheses stated. Said statistical analysis has been used in relevant studies of similar variables (Herrmann & Nadkarni, 2014; Aiken & West, 1991).

The statistical analysis proposed in this case is a GLM, with starting assumptions such as the independence of the errors (Durbin-Watson between 1 and 3 and no multicollinearity, VIF between 1 and 10). Non-parametric correlation analysis using Spearman's correlation coefficient, since the normality hypothesis is not met, and finally, hierarchical multiple regression (the explanatory variables enter the model based on their degree of correlation with the response variable), to detect the significance of the factors, with a view to the prediction model of the dependent variable. The adjusted R square shows the percentage of variability explained by the GLM model and the proposed goodness of fit.

For the calculation of the sample, the procedure suggested by Pillemer (1990) was applied through the use of the G-Power software, which yielded a minimum sample of 188 observations, in the case of data collection from Ecuador (Carchi province) reached 219 observations with valid responses and in the case of Colombia (department of Nariño) 194 observations were collected, the two samples subject to analysis exceed the minimum number (188 surveys) of valid observations to apply the non-parametric F statistical test of hierarchical regression :

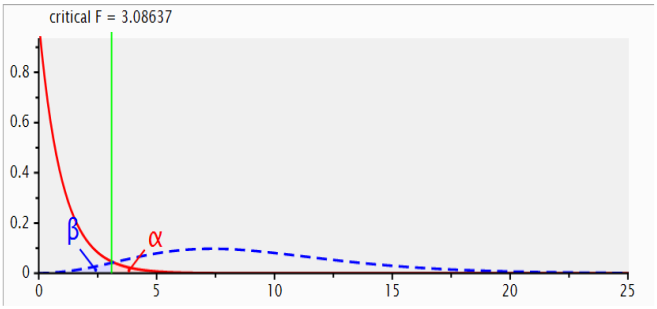

Figure 2. Calculation of the sample G-Power

Sample application protocol:

F Tests - Multiple Linear Regression: Fixed Model, R² Increase
Analysis: A priori: Calculate the necessary sample size
Entry: Effect size f² = 0.15
αerr prob = 0.01
Power (1-βerr prob) = 0.99
Number of predictors tested = 2
Total number of predictors = 5
Result: Noncentrality parameter λ = 28,2000000
F critical = 4.7236862
Numeratordf = 2
Denominatordf = 182
Total sample size = 188
Actual power = 0.9901858

Measures

Personality of the Entrepreneur

To capture the Entrepreneur Personality variable, the Big Five model proposed by Costa and McCrae (1992) was used by using the short version of the BFI-2-XS instrument that consists of 15 items, the survey was addressed to the entrepreneurs from Ecuador and Colombia grouped into five sections (openness to experience, conscientiousness, extraversion, conscientiousness, and emotional stability).

Subsequently, the recoding process was applied to six items such as: 'I am emotionally stable, 'I am not easily upset', 'I tend to be calm', 'I have little interest in abstract ideas', 'I am sometimes rude to other people'. ', 'I tend to be disorganized' and 'I have difficulty starting tasks' (Soto & John, 2017).

Innovation

Many authors conceive that innovating is more than having new ideas or creating something new, for something new to be considered innovation it must be successful in the market (Amabile, 1988). In the field of European SMEs, innovation is considered as synonymous with successfully producing, assimilating and exploiting a novelty in the economic and social spheres, in such a way that it provides unprecedented solutions to problems and thus allows responding to people's needs. and society (Watts & Zimmerman, 1978), this research considered the definition of Thompson (1965) which states that innovation is the generation, acceptance and implementation of new ideas, processes, products or services.

To capture the Innovation variable, instruments used by authors such as Lumpkin and Dess (1996) were used; Dwivedi and Weerawardena (2018), which consists of four items: 'We look for new ways to generate results', 'We look for innovative ways to market our services', 'We look for new ways to work with companies or other organizations', 'We look for innovative ways to fund resources'.

In the case of the two sections of questions, a 5-point Likert scale was used, where 1 represents that they totally disagree and 5 totally agree.

Control variables

Following the recommendations of some authors such as Garcés et al. (2017) and Goel et al. (2013), control variables were applied to capture aspects related to the context of the pandemic and its influence on the relationship between the independent variable (entrepreneur's

personality) and the dependent variable (innovation), the items used as control variables were: "difficulty operating the business", "catastrophic business situation", "good performance in the business", "COVID infections from personnel in the business", applied in the context of a pandemic.

The reverse translation process was used since the questions were originally in English. For the validation of the instrument, content validation processes were applied with experts in the field, especially to guarantee that the items were adapted to the context and were easy to understand for the respondents, the validity and reliability tests were done through the Confirmatory Factor Analysis (CFI=0.07, RMSEA=0.05).

The information gathering process had two moments, following the recommendations of Herrmann and Nadkarni (2014), a double translation process (reverse translation) was applied, the translation process from English to Spanish and from Spanish to English, which it was executed by translation experts. To guarantee the validity and reliability of the information collected, two stages were applied: (a) the validation of the contents of the instrument through interviews with experts in the area, there were nine experts, four academics and five professionals in the field; and (b) in terms of criterion validity, the recommendations of Herrmann and Nadkarni (2014) were considered, and a pilot test was carried out with the participation of 10 entrepreneurs (not included in the sample).

Finally, in a second moment with the data from the refined database and validated instruments, the entrepreneurs were contacted by phone calls, emails and through messages through LinkedIn (Kelleci et al., 2019), to explain the purpose of the research and confidentiality for the processing of the data, requesting your participation; Those who showed a predisposition to participate in this study were sent the informed consent, which was part of the structure of the form. The collection of the information was carried out during a period of 30 days, (June and July 2022).

Data purification and detection of atypical values of the dependent variable were carried out. 7 incomplete questionnaires and those containing atypical data were eliminated by using the box plot.

To calculate the starting assumption as the independence of the errors, the Durbin-Watson test was applied, whose values were greater than 1 and less than 2 for the two samples. The diagnosis of multicollinearity was applied, the values of the variance inflation factors (FIV) (the highest FIV = 3.27 Colombia, FIV = 4.01 Ecuador) are below 10, where multicollinearity does not represent a problem for the study (Cohen et al., 2003).

Results

The means, standard deviation and bivariate correlations are shown in Table 1, from the review carried out it is observed that all the correlations are less than 0.9, being favorable for the proposed model and the standard deviation is greater than 1 in all cases, which guarantees the variability of the data collected in the Ecuadorian and Colombian context:

Table 1. Matrix of means, standard deviation and correlations Carchi

Variable	mean	sd	1	two	3	4	5	6	7	8	9	10
1. Difficulty operating the business (Pandemic)	5.25	1.69	-									
2. Catastrophic business situation (Pandemic)	4.47	1.84	.521**	-								
1. Good business performance (Pandemic)	4.16	1.93	0.11	.143*	-							

4.Staff infections in the business (Covid)	2.75	2.18	0.11	.297**	,2. 3. 4**	-						
5.Extroversion	10.13	2.61	.215*	0.16	-0.08	0.05	-					
6.Agreeableness	12.49	2.82	.297**	.202*	.232*	- 0.06	.260*	-				
7. Consciousness	12.71	3.03	0.11	0.06	0.14	- 0.05	.292**	.653**	-			
8.Emotional stability	13.73	2.95	0.10	0.06	0.04	- 0.02	0.08	.309**	.488**	-		
9. Openness to experience	12.88	2.98	0.06	-0.10	-0.04	- 0.16	-0.03	.406**	.503**	.514**	-	
10.Innovation	20.68	5.68	.232**	0.10	.414**	0.10	0.07	.386**	.407**	.271**	.448**	-

** p<0.001.
*p< 0.05.

Table 2. Matrix of means, standard deviation and correlations Nariño

Variable	mean	sd	1	two	3	4	5	6	7	8	9	10
1. Difficulty operating the business (Pandemic)	5.25	1.69	-									
2. Catastrophic business situation (Pandemic)	4.47	1.84	.541**	-								
1. Good business performance (Pandemic)	4.16	1.93	- .244**	-0.12	-							
4.Staff infections in the business (Covid)	2.75	2.18	0.10	0.06	-0.03	-						
5.Extroversion	10.13	2.61	0.23	.233*	-0.02	-0.02	-					
6.Agreeableness	12.49	2.82	0.01	-0.10	-.239*	0.01	0.21	-				
7. Consciousness	12.71	3.03	-0.004	- .238**	- .206**	0.05	-0.13	.488**	-			
8.Emotional stability	13.73	2.95	0.01	-0.10	-0.09	0.11	0.11	.492**	.406**	-		
9. Openness to experience	12.88	2.98	-0.11	- .296**	- 2.02**	0.04	-0.23	.374**	.230**	.477**	-	
10.Innovation	17.10	6.26	-0.10	-0.10	0.05	0.12	-0.06	.230*	.322**	.265**	0.12	-

** p<0.001.
*p< 0.05.

To validate the hypotheses of the study, the hierarchical regression model was used, which allowed extracting the main effects of the entrepreneur's personality traits on innovation processes in micro and small companies in the border context of Ecuador and Colombia, in step one. the personality traits were entered and in step two the control variables were entered into the model with which the hypotheses h1, h2, h3, h4, h5 were tested, for the sample of Ecuadorian entrepreneurs as detailed in Table 3.

The same procedure was used in the case of the data collected with Colombian entrepreneurs detailed in Table 4 (Herrmann & Nadkarni, 2014). The diagnosis of multicollinearity was applied, the values of the variance inflation factors do not represent a problem for the study in the case of the two samples collected (Cohen et al., 2003).

Table 3 shows the results of the model of the sample of Ecuadorian entrepreneurs ($\Delta R2$ 0.55, $p < 0.05$; F 4.87, $p < 0.05$), the control variables allowed to identify the influence of the environment that could intervene on the effects of the personality traits of the entrepreneur and innovation, the results of the model showed that there is no greater influence of the controls on the effects of the independent variable (entrepreneur personality) on innovation and the hypotheses were validated. 1, 3 and 5, in the case of hypotheses 2 and 4 the relationship was validated but there was not sufficient statistical significance to accept them.

Table 3. Results of the hierarchical regression of the main effects of personality traits on Innovation in micro and small companies in Carchi - Ecuador

Variable	Model 1 (controls) β	model 2 (Main effects) β
Independent variables		
Emotional stability	0.24 *	0.31 **
extraversion	0.33 **	0.04
openness to experience	0.22	0.36 **
pleasantness	0.33 **	0.14
consciousness	0.02	0.24 **
F	9.61 ***	
ΔR2	0.59 ***	
control variables		
Difficulty operating the business (Pandemic)		0.16
Catastrophic business situation (Pandemic)		-0.14
Good business performance (Pandemic)		0.45 **
Infections from staff in the business (Covid)		0.19
F		4.87 **
ΔR2		0.80 **
R2 Adjusted		0.74

*p < 0.10
**p < 0.05.
***p < 0.001.
No. = 219.

Hypothesis 1 argues that emotional stability is positively related to innovation, the coefficient shown in Table 3 is positive and significant (β = 0.31; p< 0.05), with these results hypothesis 1 is supported. In the case of hypothesis 2, it was established theoretically that extraversion is positively related to innovation, the coefficient, which is shown in Table 3, is weakly positive but not significant (β = 0.04) with the results shown does not exist. evidence to accept the proposed hypothesis 2.

Hypothesis 3 suggested the existence of a positive relationship between openness to experience and innovation, the results indicate that the coefficient is positive and significant (β = 0.36, p< 0.05), therefore, there is empirical evidence to accept hypothesis 3 raised.

On the other hand, hypothesis 4 argued that pleasantness is negatively related to innovation, the results of Table 3 indicate that the coefficient is positive and not significant (β = 0.14), with these results hypothesis 4 is rejected, Regarding hypothesis 5, it suggested that there is a positive relationship between awareness and innovation, the findings indicate that the coefficient is positive and significant (β = 0.24, p < 0.05), therefore, the hypothesis is validated. 5.

In the case of the sample collected from Colombian entrepreneurs, the results of the model are shown in Table 4 (ΔR2 0.32, p < 0.05; F 2.70, p < 0.05), even when the model presents an adjustment moderate, it can be evidenced that the relationships between the personality traits of Colombian entrepreneurs with innovation do not present sufficient statistical significance to validate the hypotheses raised in the Colombian context, a positive relationship is evidenced between the traits of emotional stability, agreeableness and conscientiousness (β = 0.02; 0.11, 0.33).

While for the extraversion trait the relationship is negative (β = -0.15), and in the case of the openness to experience trait there is no evidence of any relationship (β = 0.00) with which it can be concluded that the personality trait of awareness is related to a greater degree with innovation, however, there is no statistical significance, so in the context of Colombian entrepreneurs the hypotheses proposed are not validated.

Table 4. Results of the hierarchical regression of the main effects of personality traits on Innovation in micro and small companies in Nariño - Colombia

Variable	Model 1 (controls) β	model 2 (Main effects) β
Independent variables		
Emotional stability	-0.11	0.02
extraversion	0.09	-0.15
openness to experience	-0.06	0.00
pleasantness	-0.04	0.11
consciousness	0.11	0.33
F	0.20	
ΔR2	0.03	
control variables		
Difficulty operating the business (Pandemic)		-0.58
Catastrophic business situation (Pandemic)		0.73
Good business performance (Pandemic)		-0.32
Infections from staff in the business (Covid)		0.17
F		2.70
ΔR2		0.32
R2 Adjusted		0.08

*p < 0.10
**p < 0.05.
***p < 0.001.
No. = 194.

In the case of the results, a variation is evident in the two models of the Ecuadorian context (ΔR2 0.55, p < 0.05; F 4.87, p < 0.05), and Colombian (ΔR2 0.32 , p < 0.05; F 2.70, p < 0.05), when entering the control variables in the case of the Colombian entrepreneur, the significance of the proposed model increases (Table 4), which shows a greater effect on the personality of the entrepreneur and innovation, while in the case of Ecuador, when entering the control variables, the significance of the model decreases (Table 3).
In other words, a minor effect is evident, considering that the control variables are related to the difficulty of operating the business in a pandemic, the catastrophic business situation due to the pandemic, business performance with the effect of the pandemic, and contagion of personnel in the business. during the pandemic.

Discussion

The results provide evidence on the validation of the theory of upper echelons since it shows how the personality of who leads the company in this case of the entrepreneur influences their performance, innovation was analyzed, especially in micro and small businesses in the border context. from Ecuador and Colombia, considering that in this type of company, management (the entrepreneur) has a greater impact as a result of its power over employees, property and objectives, which are expressed based on their perceptions and preferences; on the contrary, in larger companies, the personality effects of top executives can be mitigated through their interaction (Jahanshahi et al., 2017).

The results of this research can be considered a reference to identify which personality traits are more related to innovation in the context of Ecuadorian and Colombian micro and small companies, which contributes to the field of study of these variables (Obschonka and Stuetzer, 2017), Zhao et al. 2010).

From the study carried out, it can be concluded that the results are heterogeneous, due to the characteristics that each individual may present (Bucciol and Zarri, 2017), although the results are not generalizable, they can become a reference in the case of Ecuador, the traits of the personality that are most related to business innovation are emotional stability, openness to experience and awareness, these results are similar to those investigated by other authors.

For example, the study carried out by Goldberg (1992), cited by Woo, HR. (2018), points out that the highest levels of extraversion, openness to experience and conscientiousness are related to entrepreneurship; In the Colombian context, entrepreneurs with a conscientious trait are more related to innovation (Deck et al., 2008, cited by Bucciol and Zarri, 2017).

In the case of the Colombian context, it is evident that the pandemic has had a greater impact since when the control variables were entered into the model, they presented greater significance, which is in accordance with the results presented in the economic analysis survey carried out by the Chamber of Commerce. de Pasto (2020), which indicates that 88% of businessmen and merchants in the department of Nariño state that the expansion of the Covid 19 pandemic has had an unfavorable impact on their economic activities.

This can be related to the closure of the border, causing a decrease in the number of Ecuadorian visitors to carry out commercial activities, on the other hand, in the case of Ecuadorian entrepreneurs, the closure of the border has had an advantage since unfavorable conditions are presented to compete, especially due to the exchange differential (Viveros, 2019), since when the border was closed there was local consumption that has boosted trade in the sector.

Conclusions and recommendations

The study carried out made it possible to contribute with the scientific foundation of the premises exposed in the theory of upper echelons, pointing out that perceptions, attitudes and personality influence innovation, the results achieved could become a reference to identify the degree to which the traits of the personality of the entrepreneur could be related to innovation in micro and small companies in the Ecuador-Colombia border sector, when applied in the context of a pandemic, it was possible to carry out an analysis on the incidence of the affectation on the variables analyzed in micro and small companies Business.

Finally, it is recommended to continue investigating how personality traits could affect other economic variables of the company, such as business sustainability, financial performance or the implementation of strategies in contexts that have not been applied.

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