

## Fear of failure: What drives it in Latin America?

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### Abstract

Objective: We identify and quantify the impact of several factors that may affect the individuals' affective arousal towards fear of failure given the external situation they may face in five Latin American countries: Brazil, Colombia, Chile, Mexico and Peru. Originality: We propose a model of fear of failure experience and test a reduce version of it. In doing this we identify differences in the factors between countries due to their different contexts. Methodology: We use an unbalanced logit-panel model for Latin America during years 2010-2015 and we also run a robustness check using a logistic cross-sectional model. Results: We find that being female and single mother increases the individuals' fear of failure, while age and higher education reduces it. The individuals' self-perception reduces their fear of failure in almost 19 %, which implies that a positive self-perception will help them to overcome their affective arousal towards fear of failure. We also find that individuals' contact network may mitigate and past negative business experience may magnify the affective arousal towards fear of failure, but these effects change among countries. Recommendations: In order to foster individuals' positive response towards fear of failure, business incubators need to work on the personal traits of them, especially excessive overconfidence. Furthermore, regional governments need to take measures to promote higher female participation and entrepreneurial education for all. Limitation: We are subject to the limitation of the GEM database in the data collection Conclusion: Individuals' experience towards fear of failure is a process that is being affected by his gender, age, education, and self-perception. Furthermore, it is a dynamic process that is mitigated or magnified with the entrepreneurs' network and past negative business experience.

*JEL Classification:* M13, M19

*Keywords:* Entrepreneurship, behavioral entrepreneurship, fear of failure.

## Miedo al fracaso: ¿Qué lo impulsa en América Latina?

### Resumen

Objetivo: Identificamos y cuantificamos el impacto de varios factores que afectan la respuesta emocional de los individuos frente al miedo al fracaso dada la situación externa que enfrentan en cinco países latinoamericanos:

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### Resumen

Brasil, Colombia, Chile, México y Perú. Originalidad: Proponemos un modelo de la experiencia del miedo al fracaso y verificamos una versión reducida del mismo. Asimismo, identificamos las diferencias en los factores entre los diferentes países considerados. Metodología: Utilizamos un modelo logístico de datos de panel no balanceado para Latinoamérica durante los años 2010-2015 y verificamos la robustez de los resultados con un modelo logístico de corte transversal. Resultados: Encontramos que ser mujer y madre soltera aumenta el miedo al fracaso de las personas, mientras que la edad y la educación superior lo reducen. La autopercepción de los individuos reduce su miedo al fracaso en casi un 19%, lo que implica que una autopercepción positiva los ayudará a superar su respuesta emocional frente al miedo al fracaso. También descubrimos que la red de contactos empresariales de las personas puede mitigar y la experiencia empresarial negativa pasada puede aumentar el miedo al fracaso, pero estos efectos cambian entre los países. Recomendaciones: Para fomentar la respuesta positiva de los empresarios ante el miedo al fracaso, las incubadoras de empresas deben trabajar en sus rasgos personales, especialmente el exceso de confianza. Además, los gobiernos regionales deben tomar medidas para promover una mayor participación femenina y educación empresarial para todos. Limitación: Estamos sujetos a la limitación de la base de datos del GEM en la recopilación de datos. Conclusión: La experiencia de las personas hacia el miedo al fracaso es un proceso que se ve afectado por su género, edad, educación y autopercepción. Además, es un proceso dinámico que se mitiga o amplifica con la red de emprendedores y la experiencia empresarial negativa anterior.

*Clasificación JEL:* M13, M19

*Palabras Clave:* Emprendimiento, emprendimiento conductual, miedo al fracaso

## 1. Introduction

Fear of failure is a concept that have been studied from two main points of view: psychological and entrepreneurial one. From the psychological perspective fear of failure is activated in response to obstacles which arise in the entrepreneurial process (Morris, Kuratko, Schindehutte, & Spivack, 2012; Cacciotti et. al., 2016). Aspects of individual behavior, personal traits and events within the environment affect the intention to act (Wood & Bandura, 1989). The entrepreneurial perspective usually considers fear of failure as fixed personality trait of the individual that remains unchanged throughout the entrepreneurship process, which is the static approach (Mitchell & Shepherd, 2011; Morgan & Sisak, 2016).

The psychological research dates back to the second half of the twentieth century with the work of McClelland, Atkinson, Clark & Lowell (1953) who considered fear of failure as factor to avoid success and it was related more to our reaction in the face of others' perception of our actions, for instance the fear of being humiliated due to our failure (Atkinson, 1966). Later on, Atkinson and Litwin (1973) related fear of failure to a situation of anxiety in the presence of a certain stressor. The main conclusion is that the feeling of fear of failure, as an emotional experience, depends not only on the individual self-perception but also on the situation or context.

Magda Arnold and Richard Lazarus were two psychologists who helped to develop the appraisal theory that states that an individual's emotions are extracted from his/her evaluations of events and will cause specific reactions in different individuals. According to Lazarus (1991) an individual first identifies and interprets the stressor (external event) and then he/she analyzes his/her internal resources to manage it. If he/she finds enough internal resources then overcomes the stress or affective arousal and acts consequently. Finally, he/she reappraises the whole situation in order to learn from it. For example, an entrepreneur may wish to collect money from business angels and in order to do this he must deliver a speech to them. The entrepreneur perceives a stressor (the speech) and interprets it (for example, "I have never delivered a speech before"). If he then thinks "I know enough about this business and I will do it fine", he overcomes the stressor and delivers the speech. After the speech, he will rethink about it in order to learn what he could have done

better.

The previous example shows that fear of failure could act as a barrier to act, not delivering the speech, or, depending on the individual's self-perception, as an impulse to overcome the stressor and deliver the speech. Consistent with this view, several authors from the entrepreneurial perspective, have concluded that fear of failure could lead to both self-inhibiting and self-motivating effects (Ray, 1994; Mitchell, 1996; and Mitchell & Shepherd, 2011; Minniti, 2012).

Research into the determining factors of fear of failure is still limited. The late appearance of research into the relationship between personal traits and entrepreneurship was due to the unavailability of empirical data. For this reason, the majority of empirical studies related to entrepreneurship date from the first decade of the 21st century (Acs, 2006). Most recently, from 1997 onwards, the Global Entrepreneurship Monitor (GEM) has become involved in undertaking opinion surveys among entrepreneurs in over 75 countries on diverse continents. This represents a great advance in the availability of information, which can then be employed for research purposes, but it also takes a static or unconditional view of the fear of failure instead of a dynamic process' view.

According to Cacciotti, Hayton, Mitchell & Giazzizoglu (2016) current literature has treated fear of failure as just the entrepreneur's perceived risk in a fixed way as shown by the answer to the following GEM question: "fear of failure would prevent me from starting a business". If we take only this question without considering factors that may condition the entrepreneurs' answer, such as his internal cognition, his external influences or context and his self-perception, then we will consider that fear of failure is static or unconditional.

In other words the static approach only considers the unconditional entrepreneurs' answer in the face of a stressor ignoring his affective arousal, positive or negative depending on the self-perception of own resources to deal with it; the richness of his cognition that depends on their gender, age, education, potential of the idea, social esteem, and opportunity costs; the external situated social cues such as ability to get the funds, ability to execute or the particular external context; and the learning dynamic process, such as the entrepreneurial network and the negative previous business experience that may increase or decrease the fear of failure. The result of this dynamic process could be action (overcome the fear of failure), inaction (do not overcome the fear of failure) or repression (the rejection of the fear of failure that may lead to overconfidence).

Our goal is to propose a model of fear of failure and to test a reduce version of it in five Latin American countries considering variables that may influence entrepreneurs' affective arousal towards fear of failure. In this sense, we believe that in order to overcome the affective arousal towards fear of failure individuals must align their attitudes (mindset) with the ones required by the challenge (for instance to start a new business) otherwise individuals won't start the business. In this process, individual's self-perception helps to make this alignment possible and it is in turn affected by the individual own and relevant third party experiences given the individuals' filters (gender, age and education).

In contrast to previous studies, such as that of Sepúlveda & Bonilla (2014) and Samaniego et al. (2016), we develop a model of fear of failure and then we test for the variables that influence entrepreneurs' affective arousal towards fear of failure. In doing this we also identify differences in the factors between countries due to their different contexts.

Using an unbalanced logit-panel data for five Latin American countries (Brazil, Chile, Colombia, Mexico and Peru) we found that variables that affect the entrepreneurs' personal ability or cognition such as gender, age and education are statistically significant. Females suffer from a higher fear of failure rather than males, older adults suffer from higher fear of failure than younger adults and individuals with higher education have lower fear of failure than less educated ones. We also found that self-perception is significant because it lowers the probability of having fear of failure in 18.63

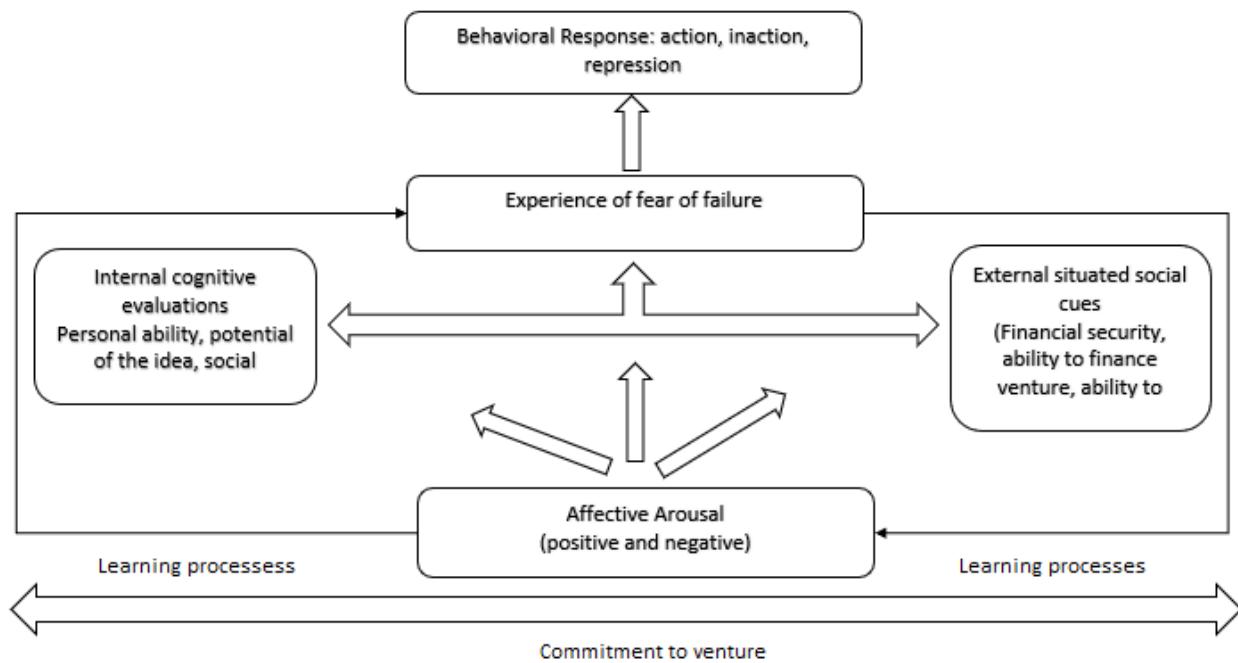
We also find that variables that may mitigate or magnify the individuals' affective arousal towards fear

of failure (learning process), such as the entrepreneurial network and a past negative business experience are also significant. The fact of having a contact network reduces the fear of failure, while there are traces that a negative previous business experience (i.e. bankruptcy) increases the fear of failure in Chile and Mexico. Finally, the context also matters because the increase of country risk also increases the fear of failure although with a modest impact.

In the next section we present our model of fear of failure, while in the third section we conduct the literature review related to fear of failure and derive our hypotheses. In the fourth section we describe the database and our methodology. The fifth section shows the results and robustness check, while in the last section we conclude the work.

## 2. Model of Fear of failure

As Cacciotti et al. (2016) we also believe that the experience of fear of failure occurs within a dynamic process. Figure 1 shows the basics of the Cacciotti et al. (2016) model.



**Figure 1.** Model of experience of fear of failure.

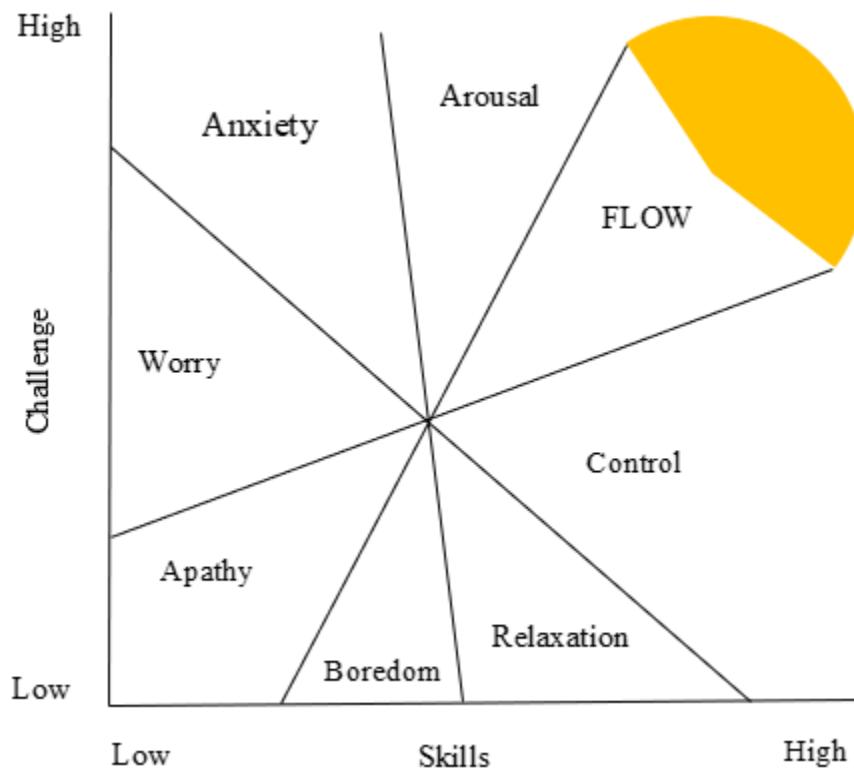
Source: Edited from Cacciotti, Hayton, Mitchell & Giaztizoglu (2016)

As we can see, the individual's experience of fear of failure is contextual to the individuals' internal cognitive evaluations and their external situated social cues, both of them will influence their affective arousal towards their fear of failure and induce a behavioral response (action, inaction and repression).

Although, this empirical model is quite appealing because it grasps the basics of the experience of fear of failure, we believe that there is no internal cognitive evaluations without an external influence and that these evaluations also involve feelings, not only thoughts. Furthermore, the individuals' self-perceptions are first filtered by their gender, age and education that will in turn change the individuals' attitudes toward

more specific evaluations such as the potential of the idea, opportunity costs, ability to finance and to execute the venture, etc.

We also believe that self-perception accomplish a very important role in the process because it may help individuals to overcome their effective arousal towards fear of failure. Csikszentmihalyi (1991) stated that what makes people happy is the engagement with a meaningful work. He states that when the challenge is high and the individuals' perceived skills are also high, they may enter into a state called "Flow" where they are completely engaged in creating something new and this process brings them happiness.

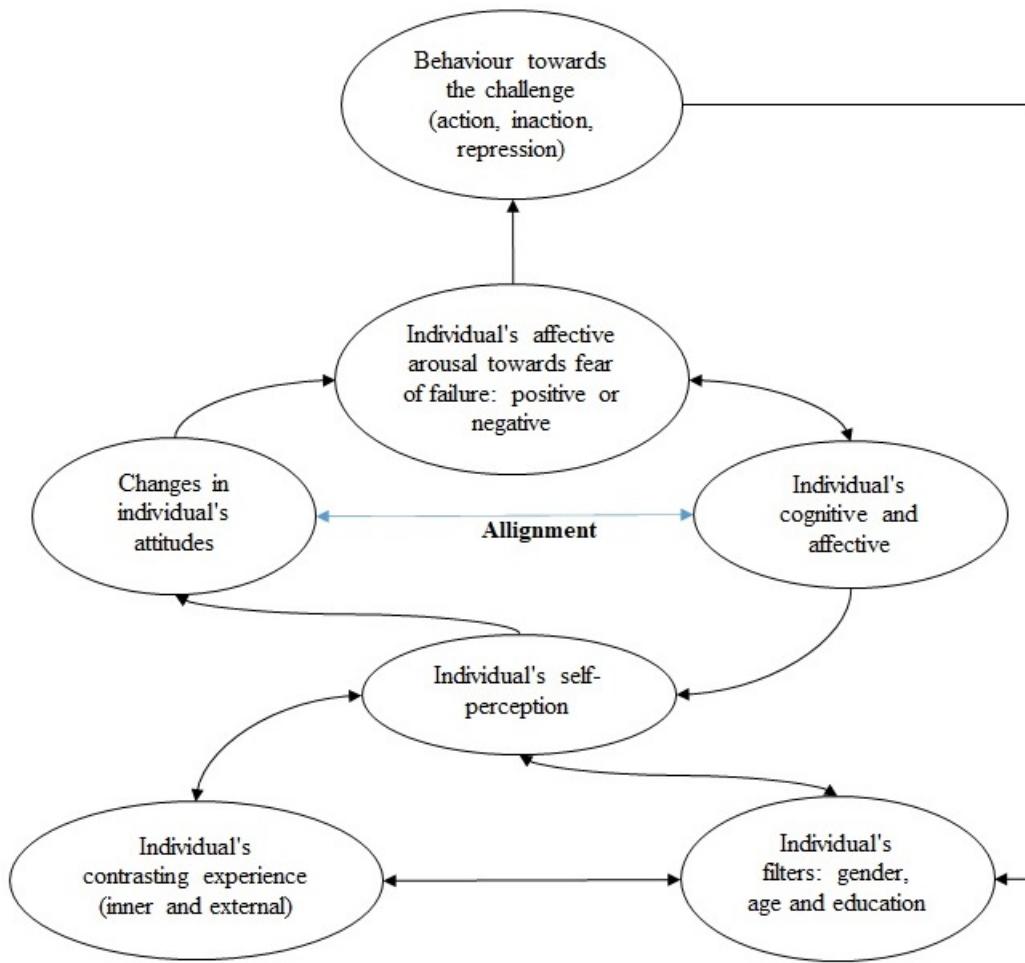


**Figure 2.** Flow state as source of happiness.

Source: Adapted from Csikszentmihalyi (1991)

As we can see in Figure 2, individuals could overcome their affective arousal towards fear of failure in the face of a challenge of creating a new business venture if they believe that they have the enough skills, knowledge and ability to manage the challenge or in other words if they have a high self-perception.

Figure 3 shows our proposed model for the dynamic process of fear of failure. The entrepreneur's affective arousal towards fear of failure is detonated by an external stressor (i.e. the decision to start a business) and in order to respond to it the entrepreneur assesses its self-perception or personal ability plus other factors such as potential of the idea, social esteem, and opportunity costs.



**Figure 3.** Proposed model of fear of failure.

Source: Own elaboration

Figure 3 shows our model, in order to explain the process let's put the example of an individual who wants to start his first business. In this situation, the individual is faced by the challenge of starting a new business venture, this will detonate an initial individual's affective arousal positive or negative towards fear of failure. The individual's affective arousal response is due to her cognitive and/or affective dissonance which is an internal conflict between his beliefs, values and feelings with respect to the ones required to undertake the new business venture. For instance, if she believes that with his current income she can achieve a good retirement, she may wonder why she should leave her current job and undertake a new business venture?

Here is when the individual's self-perception comes into play because her answer will be completely different depending on her gender, age and education. For instance, Camelo, Diáñez and Ruiz (2016) found, among Spanish non-entrepreneurs, that being a female reduces her entrepreneurial intentions due to a restrictive self-perception about their abilities to succeed in entrepreneurial tasks.

In relation of individual's age, Artistico, Cervone, and Pezzuti (2003) found that individuals have higher levels of self-efficacy for problems that were relevant to their age group. Hence age, plays an important role in self-efficacy that is the self-perception of having the ability to perform specific tasks.

Concerning individual's education, Liu, Lin, Zhao and Zhao (2019) studied the effect of entrepreneurial education among 327 college students in China and their self-efficacy. These authors found that entrepreneurial education and entrepreneurial self-efficacy stimulate entrepreneurial intention.

Given the individual's filters, she then will also contrast her internal cognitive and affective internal assessment with her own negative business experiences and the ones of her relevant entrepreneurial contacts as well as her external context (for example, too see if there are people undertaking similar business given the country risk). The result of the bottom loop will require a change in her beliefs, values and feelings in order to align her attitudes (mindset) to the challenge and eliminate her cognitive and/or affective dissonance. If and only if this alignment occurs, she will overcome her fear of failure and undertake the business venture, otherwise she won't do it. Alternatively, if she only mitigates her cognitive and/or affective dissonance then she could repress her fear of failure through excessive overconfidence and undertake the business venture anyway.

It is important to note that factors such as social esteem, opportunity costs due to societal roles and the goodness of a potential idea are influenced by gender, age and education. Furthermore, the later result of the individual's behavior (for example, to be successful or not in the new business venture) will in turn influence again her self-perception through the lenses of her basic filters.

### 3. Literature review and hypotheses

Next, we review the current literature with respect to the relationship between the variables shown in Figure 3 and the fear of failure to derive our hypotheses. It is important to state that we do not have information concerning the individual's alignment between her attitudes and cognitive and affective dissonance, so we assume that this alignment exists and therefore the individuals' self-perception is enough to induce a response to the challenge (i.e. to start a new business venture). Hence, we test a reduced version of our model and we leave the test of the full version to another research because it requires collecting information that the GEM does not contain.

Concerning the entrepreneur's affective arousal towards fear or failure we believe that self-perception is one of the most important determinants because it could lead to lack of confidence, moderate overconfidence and excessive overconfidence (Mongrut and Juarez, 2018). In 2014 the Failure Institute launched its Global Failure Index (GFI) that is a platform whose objective is to visualize and categorize data specific to businesses that failed. The GFI is fed daily with data provided by three main sources: 1) the global community of Fuckup Nights, present in more than 70 countries around the world, 2) the Global Network of Failure Investigators and 3) business incubators, accelerators, business conferences and media that generously joined as data partners.

According to the GFI, 82

Many of these companies were incubated, the service-based structure offered by the business incubators includes shared office spaces, networking, access to capital, legal and financial assistance, marketing, sales and product development, as well as practical business consultancy (Mian, 1997; Harwit, 2002; Chan & Lau, 2005). The assistance offered by the business incubators is focused on the set-up stage, for example the drawing-up of business plans, (marketing, finance and processes among others), accessing low-cost resources, training, consultancy, workshops, mentoring, commercial contacts and preferential financing. Despite this wide range of services, few programs dealt with the development of entrepreneurs' personal traits even though entrepreneurs declared that an important component of their failure was their own overconfidence.

Serida & Morales (2011), concluded that the main factors considered by individuals wanting to start a company are business opportunities and the self-perception. These results are similar to those obtained by Shinnar, Giacomin & Janssen (2012), who found that a weak self-perception reduced entrepreneurial intentions in individuals of USA, China and Belgium. Furthermore, Ekore & Okekeocha (2012) conducted a study in Nigeria and found that self-perception had a significant influence on fear of failure.

Beynon, Jones and Pickernell (2018) conducted a cross-country study among 54 countries using the GEM

dataset to study the entrepreneurial climate and self-perceptions about entrepreneurship. They found out that in countries where the self-perception about entrepreneurship is present, entrepreneurial status seems to be of most benefit and therefore of most relevance in policymaking. Hence, self-perception also work at the aggregate level and it is linked to entrepreneurial status. Therefore, our first hypothesis is the following:

*Hypothesis 1: Individuals' self-perception reduces their fear of failure*

In relation to internal cognitive traits Wagner (2007), Lussá (2010) and Samaniego & Reyes (2016) consider the gender of entrepreneurs to be a determinant factor that influences the behavior of a person against the risk of starting a business. According to these authors, the gap that exists between female and male entrepreneurs is driven by the higher fear of failure that women experiment.

In their 2014 study, Sepúlveda & Bonilla examined the factors influencing risk attitudes in entrepreneurship in five countries Latin America. The results of the study revealed that being male, having more years of formal education and to have a high self-perception decrease the probability of having fear of failure.

León (2018) also made a research of the socio-demographic variables that affect the intentions to create a business in Peru using the National Household Survey. He found that age, higher education and previous working experience affect the likelihood to start a new business.

Recently, Mayorga, Morales and Carvajal (2020) studied the female entrepreneurial activity in Latin America and Ecuador using the GEM dataset and found significant differences between males and females with respect to fear of failure, women were having a higher fear of failure than men. Hence, our second hypothesis is the following:

*Hypothesis 2: Individuals' filters (gender, single motherhood, age and education) influence their fear of failure assessment*

We consider the entrepreneur's inner and external context. The entrepreneur inner context is related to his entrepreneurial contact network and past negative experience, while his external context is related to the country risk.

Conroy, Willow & Metzler (2002) included contextual factors as explanations of the fear of failure, such as those resulting from resources, opportunities presented by the environment, entrepreneurial attitudes and belief and behavior. They identified five dimensions in the fear of failure: 1) loss of self-esteem 2) future uncertainty, 3) experiencing shame, 4) compromising third-party interests and 5) letting down other people. The above dimensions have given rise to a strand of research which studies the impact of the network of contacts an individual possesses on his intention to start a business (Hoang & Antoncic, 2003). These networks are considered relational capital and may trigger the start of the business because these are sources of innovation and new ideas (Davidsson & Honig, 2003)

Morales-Gualdrón and Roig (2005) and Arenius & Minnitti (2005), who also carried out studies using GEM-based data, concluded that fear of failure had a stronger negative influence on groups of entrepreneurs who were starting their business out of necessity than those who were starting by opportunity, and that among the most significant factors in the decision to set up a business were self-perception, the existence of opportunities and knowing other business people (network).

García, Martínez-Campillo & Fernández (2006) carried out a study in order to determine the factors influencing the creation of businesses in 2000 entrepreneurs in the spanish region of Castilla de La Mancha. They concluded that the most important factors were the possession of the necessary skills, the understanding of the business idea, the availability of opportunities and the fear of failure. In the same way, a GEM-based study presented by Wagner & Sternberg in 2004 concluded that fear of failure was negatively associated with the creation of startups due to the external context.

Lussá (2010) conducted a GEM based study between 2001 and 2004 among 46 countries to find out the factors that motivate the creation of new businesses. She found the larger impact of skills and fear of failure in

female entrepreneurial rates relative to males. Her results confirm the larger importance of specific skills for women creating new businesses and suggest that facilitating access to business networks and specific business skills are the most powerful instruments to increase the rates of female entrepreneurship.

The Mitchell & Shepherd study (2011), which involved over 120 individuals, found that fear of failure can both impede and stimulate entrepreneurial intention depending on the characteristics of the environment and the particular opportunity as well as the self-perception of the individual involved.

Other studies have focused on analyzing the environmental perception, such as that of Arroyo, Del Mar Fuentes & Ruiz (2014), who researched the role of cognitive, relational and socio-demographic factors involved in the business start-up intentions of 27,880 Spaniards. They discovered that cognitive factors including fear of failure, self-awareness and environmental perceptions were the most significant.

More recently, Wood, McKelvie & Haynie (2014) carried out an experiment with 120 entrepreneurs and concluded that fear of failure moderated the relationship between investment decisions and the amount of new businesses that started operations but were subsequently closed due to external reasons.

Boudreaux, Nikolaev, and Klein (2019) argue that entrepreneurs' personal traits such as self-efficacy and alertness promote entrepreneurship by opportunity, while fear of failure discourages it. However, this result depends on the institutional context. These relationships are stronger in countries with higher levels of economic freedom. Hence, our last hypothesis is the following:

*Hypothesis 3: The individuals' inner context (contact network and negative business experience) as well as his external context (country risk) influence their fear of failure experience* In the next section we will explain the methodology that we use in order to test our three hypotheses.

## 4. Methodology

### 4.1. Sample

We use mainly the data of the Global Entrepreneurship Monitor (GEM). The GEM is an international organization which brings together information related to annual entrepreneurship in individual countries. One way in which information is compiled is through the Adult Population Survey (APS), which consists of random surveys of approximately 2000 individuals in approximately 75 countries. The full datasets of GEM are only made available to the public 3 years after data collection. So, we took the information of the GEM from 2010 until 2015 because the dataset for 2016 is going to be available in 2020.

The countries with the largest number of entrepreneurs worldwide are mainly those in Latin America. According to the GEM (2010) report, nine of the fifteen countries with the highest number of entrepreneurs, with more than 10 % of the population involved in an entrepreneurial activity, are Ecuador, Colombia, Bolivia, Uruguay, Brazil, Mexico, Chile, Argentina and Peru. The report also reveals that, according to the statistics on business closure, eight of the seventeen countries with the highest number of business failures are also in Latin American: Ecuador, Colombia, Bolivia, Chile, Uruguay, Argentina, Peru and Mexico.

Our sample comprises 121,820 observations from the Adult Population Survey (APS) from the years 2010-2015 related to entrepreneurs in Brazil, Chile, Colombia, Mexico, and Peru. Table 1 gives the sample composition according to the number of survey respondents by country and year. As we can see the number of surveyed respondents is quite volatile, hence the respondent is not same across time, which possess a difficulty that we will discuss in the section 3.4.

In addition, we include information related to the percentage of single mothers taken from the Civil Register databases of each country (Single Motherhood). Hence, the main reason why we took only the former five Latin American countries is related to the information availability of the "Single Motherhood"

variable. Finally, we also took the Emerging Market Bond Index (EMBI+) as a context variable and we use the growth rate of the Gross Domestic Product (GDP) and country dummies as controls in the models for Latin American.

**Table 1.** Sample composition  
 (Number of observations by country and year)

Country/Year	2010	2011	2012	2013	2014	2015	Total
Brazil	1932	1961	6352	6778	3895	4012	24,930
Chile	6805	6914	1916	5211	4652	4821	30,319
Colombia	10622	9933	5649	3002	7065	6197	42,468
Mexico	2145	2015	1645	2093	2162	4613	14,673
Peru	1703	1579	1495	1464	1698	1491	9,430
Total	23207	22402	17057	18548	19472	21134	121,820
Percentage	19 %	18 %	14 %	15 %	16 %	17 %	100 %

Sources: GEM Database. Own elaboration

## 4.2. Dependent Variable

Table 2 shows the definitions and Table 3 shows the descriptive statistics of our basic variables for the five Latin American countries (LATAM) during the period 2010-2015. We seek to explain, not to predict, the variable “fear of failure” represented in the survey by the question “does fear of failure prevent you from starting your own business?”. We consider only respondents who answered Yes or No. A ‘Yes’ answer is equal to 1; while a “No” is equal to 0. According to Table 3, the average answer is 0.33, hence the majority of individuals believe that they will start a business despite their fear of failure.

## 4.3. Independent Variables

We aim to identify the factors that affect fear of failure in three domains: the entrepreneur’s self-perception, his cognitive traits (*gender, single motherhood, age, education*), and his inner (*contact nextwork, business experience*) and external context (EMBI). Besides this eight variables we also consider their corresponding variants: squares to assess their possible change through time (*age<sup>2</sup>, education<sup>2</sup>*), and their interactions to assess their conditioned effect upon fear of failure (*age × business experience, education × age, business experience × education*). Finally, we use the GDP growth and country dummies as controls.

**Table 2.** Definition of variables

Variables	Survey Question	Answer Options
Fear of failure	Does the fear of failure prevent you from starting your own business?	Yes, No, No Response
Gender	What is your gender?	Male, Female
Age	What is your age in years?	Numeric response
Business Experience	Have you had a business that failed within the last 12 months?	Yes, No, No Response
Contact Network	Do you know someone who has started a business within the previous 2 years?	Yes, No, No Response
Self-perception	Do you have the knowledge, skills and experience required to start a business?	Yes, No, No Response
Education	How many years of education have you had?	Numeric response
<i>Age<sup>2</sup></i>	Calculated by squaring the age in years	
<i>Education<sup>2</sup></i>	Calculated by squaring the educational level.	
Age x Bus.exp.	Calculated by multiplying the Age times Negative Business Experience.	
Education x Age	Calculated by multiplying the Education times Age.	
Bus. Exp. x Educ.	Calculated by multiplying the Negative Business Experience times Education.	
Single Motherhood	Percentage single mothers / women entrepreneurs.	Percentage
EMBI	Represents the country risk (stripped spread)	Numeric
GDP	Growth of Gross Domestic Product.	Numeric

Source: GEM database, Civil Registers and World Bank

**Table 3.** Descriptive statistics from LATAM: 2010-2015

Variables	Mean	Standard Dev.	Min.	Max	N
Fear of Failure	0.33	0.47	0	1	121820
Gender	0.50	0.50	0	1	121820
Age	38.10	14.06	18	90	121820
Business Experience	0.06	0.23	0	1	121820
Contact Network	0.35	0.48	0	1	121820
Self-perception	0.59	0.49	0	1	121820
Education	8.79	5.80	0	17.2	121820
Single Motherhood	0.10	0.13	0	0.4	121820
EMBI	1.93	0.80	1.12	5.23	121820

Source: GEM database, Civil Registers and World Bank

We include the “*gender*” of those interviewed as a *dummy* variable. This independent variable indicates whether the person being interviewed is female (1) or male (0). According to Table 3 we have parity in the respondents, because 50% are males and 50% females. In the case of Latin America in particular the role of women is centered around raising and educating children. It is the male partner who works to provide to the family. For this reason, we suspect that women prefer not to start businesses and to dedicate themselves principally to the family, and this has a meaningful impact into their fear of failure.

The independent variable “*age*”, which represents the age in years of the individuals and is restricted between 18 to 90 years, is used to verify whether or not there is a relationship between the age of an individual and their fear of starting a business.

According to Table 3, the average age of the respondents is 38 years old. It is possible that this relationship does not only occur in a linear way, and for this reason we add the variable “*age*<sup>2</sup>”, allowing us to observe whether or not the relationship changes for older individuals.

The fact that an individual has failed in a previous business venture can affect his fear to start a new business. In contrast, Cooper, Woo & Dunkelberg (1989) argued that previous experience can give an individual greater confidence in their capacity to be successful in their new venture. This effect is included in the model through the dummy variable “business experience” awarding a value of 1 if the individual has failed in a business venture within the last 12 months and a value of 0 if they have not. In Table 3 we see that the average answer is 0.06, so a few number of entrepreneurs have fail in a business within the last 12 months.

In addition to the above, and due to the increasing importance of networks and entrepreneurial associations, it is also important to verify whether an individual who has a strong network of connections with other entrepreneurs feels the same fear of failure or whether this is lessened. In this way the entrepreneur contact network is a dummy variable, awarded a value of 1 if the subject knows others who have successfully started a business within the previous two years and 0 if they do not. In Table 3 we see that the average number is 0.35, so almost one-third of the respondents know other entrepreneurs.

The independent variable “self-perception” is collected through a dummy variable. This is done by asking the respondents if they believe they have the skills, knowledge and experience necessary to start a business. A value of 1 is awarded if the respondent answers “Yes” to the question and a value of 0 otherwise. According to Table 3, we see that the majority of the individuals believe they have the skills and knowledge to start a business (0.59). This is a key variable, not only because it helps to overcome the entrepreneur’s affective arousal towards fear of failure, but also because we suspect it is the main “competitive advantage” that entrepreneurs may have in ventures by necessity instead of opportunity, such as the ones we see in Latin American markets.

The education of an individual is relevant because the more education a person receives the higher the

level of knowledge and ability they have to manage their new business; they feel more mature and better prepared. In contrast, Sepulveda & Bonilla (2011) showed that the more years of education an individual had the less likely they were to start a business. This could be related to age and the importance of the years dedicated to gaining a solid educational background: the older and more educated the individual the lower the fear of failure.

Information on this dependent variable is obtained by asking the number of years of education. According to Table 3 the average number of years of education is almost 9 years with a maximum of 17 years. Nevertheless, even though an individual might be older, the fact that they are more educated should be taken into account as it can be used as a tool to help overcoming both difficulties and fear of failure. In addition, it is possible that this relationship is not only linear, and for this reason the variable “*education*<sup>2</sup>” is used, allowing a clearer picture of the relationship between these variables to be seen.

We consider that an extreme case is the situation of “Single Motherhood” where women raise alone their children and it is quite common in Latin American countries. Hence, these women tend to have even more fear of failure because they need to secure subsistence to their children given the lack of economic support from the father. In Table 3, we show that on average 10 % of the women entrepreneurs are single mothers. We calculate this variable as a percentage over to total number of female entrepreneurs per country using the birth records in the Civil Register of each country.

The characteristics of an individual can vary from one region to another, and for this reason it is relevant to describe the environment within which an individual has developed his entrepreneurial venture (Acs & Audretsch, 1993). With the aim of including these characteristics particular to each country, we have included the Emerging Markets Bond Index (EMBI). The EMBI variable is the principal indicator of country risk and is calculated by J.P. Morgan Chase. It uses the difference (stripped spread) between the interest rate paid by dollar bonds issued by developing countries and those issued by the US Treasury for the same time period, which are considered risk-free. The stripped spread is being given in basis points, where 100 basis points is equivalent to 1 %. According to Table 3, the average country risk is 1.92 % with a maximum value of 5.35 %.

Finally, we include the GDP growth as a macroeconomic control variable and also country dummies in the model for the whole Latin America (LATAM). We also include independent cross-variables with the objective of observing the conditioning effect of two variables upon the fear of failure. The cross-variables that we use are the following ones: “*age × business experience*”, “*education × age*”, “*businessexperience × education*”.

#### 4.4. Model

There have been different empirical approaches to try to explain fear of failure or explain other concepts using fear of failure: Llussá (2010) used comparison of means, Samaniego & Reyes (2016) used Neural networks, Cacciotti et al. (2016) used personal interviews, and Kollmann, Stöckmann & Kenscock (2017) used experimental design. However, in order to exploit the richness of the GEM dataset we have decided to use a logit panel with random effects, after applying the corresponding Hausman Test. Other authors, such as Boudreux et al. (2019), have used a logistic regression using the GEM dataset, Sepúlveda and Bonilla (2014) used a cross-section probit model and Wagner (2004) and Wennberg, Pathak & Autio (2013) have also used a Logit Panel with random effects.

Let  $y_{it}$  be a binary response variable equal to 1 if individual  $i$  ( $i = 1 \dots n$ ) has fear of failure at time  $t$  ( $t = 1 \dots T$ ) and equal to 0 otherwise; also let  $X'_{it}$  be a corresponding vector of strictly independent variables. Hence, the random-effect logit panel or binary panel data is the following:

$$p(y_{it}|\alpha_i, X'_{it}) = \frac{\exp(\alpha_i + \beta X'_{it} + e_{it})}{1 + \exp(\alpha_i + \beta X'_{it} + e_{it})} \quad (1)$$

Where:

$\beta$  = is the vector of coefficients corresponding to the independent covariates

$X'_{it}$  = is the vector of covariates of interest for individuals i and across time t

$e_{it}$  = is the error term

$\alpha_i \sim iid(0, \sigma_\alpha^2)$

$e_{it} \sim iid(0, \sigma_e^2)$

Note that in this case  $\alpha_i$  are random variables specific for each individual i, with the same variance (homocedastic across individuals), and time invariant. The  $\alpha$  of different individuals are independent, have zero mean and their distribution is close to normality.

Using the variables shown in Table 2, we test four different specifications of the following Logit-Panel data model for the five countries (LATAM) using random effects:

$$\begin{aligned} y_{it} = & \beta_0 + \beta_1 * Gender + \beta_2 * Age + \beta_3 * Business\ Experience + \beta_4 * Contact\ Network + \beta_5 * \\ & Selfperception + \beta_6 * Education + \beta_7 * Age^2 + \beta_8 * Education^2 + \beta_9 * (Age * Business\ Experience) + \\ & \beta_{10} * (Education * Age) + \beta_{11} * (Bus.\ Experience * Education) + \beta_{12} * Single\ Motherhood + \beta_{13} * EMBI + \\ & \beta_{14} * macroeconomic\ controls + \beta_{15} * country\ dummies + \alpha_i + e_{it} \end{aligned} \quad (2)$$

In order to choose between fixed or random effects we have to run the Hausman test where the null hypothesis is that the preferred model is random effects and the alternative the fixed effects. It basically tests if the errors are correlated with the independent variables and the null hypothesis is they are not (random effect). Hence, if the p-value is significant ( $p < 0,05$ ) we then use fixed effects, otherwise we use random effects. We found random effects in all regressions according to the Hausman test.

The Adult Population Survey (APS) is applied usually between April and June of every year to the same subjects with a total minimum of 2000 individuals per year and country. These individuals are changed only when survey administrator cannot reach the same individual after he called-back him (5 times, if by phone), revisit him (3 times, if face-to-face) in an attempt to interview this person or increasing the number of surveyed individuals. Every individual has a unique code of maximum 10 digits and the changing rates of codes differ between countries and years.

Due to the fact that in the GEM database we may not have the same individual across years we cannot apply a balance logit panel data, but an unbalanced one. This will deal with the fact of not having the same individual all years. Specifically, we need to consider only all the individual codes for all the years they have appeared until the code is no longer in the database. Alternatively, we may run logistic cross-sectional regressions for every year (2010-2015) because in this way we do not need to track each individual code through time. The cross- sectional model for one year is the following, where  $y_i$  is defined as (1):

$$y_i = \alpha_i + \beta X'_i + e_i \quad (3)$$

Where:

$\beta$  = is the vector of coefficients corresponding to the independent covariates

$X'_i$  = is the vector of covariates of interest across individuals i for only one year

In the next section we show the results of an unbalanced logit panel model for the five countries (LATAM) and, for robustness, we also show the results of a logistic cross-sectional regression for LATAM only for year 2015. It is important to state that we have also run cross-sectional regressions for years 2010-2014 for the five countries (LATAM) obtaining similar results, but for simplicity we just report the results for our last available year 2015. Finally, we also estimate unbalanced logit panel models per country in order to show the differences of results between them.

## 5. Results

### 5.1. Results for LATAM from unbalanced logit panel regressions (2010-2015)

In this section we first present the results of the unbalanced logit panel regressions for LATAM (2010-2015) and then the results of the cross-sectional regression for LATAM (2015). Finally, we present the results of the unbalanced logit panel regression for each one of the five countries (2010-2015).

In all regressions, our first specification includes the non-linear effect of age and its cross-effect with education isolating the effect of education, while not taking into account the effect of business experience. Our second specification considers business experience and the cross-effect of education and age, while our third specification considers the effect of single motherhood without considering gender and the non-linear effect of age. Finally, our last specification considers the non-linear effects of age and education and their corresponding cross-effects.

Table 4, in appendix 1, shows the correlation coefficients between all the variables and all countries during the period 2010-2015. We can see that there is a positive association between *gender*, *business experience*, *single motherhood* and *country risk* (EMBI) with respect to *fear of failure*. In contrast, there is a negative association between *age*, *contact network*, *self-perception*, and *education* with respect to *fear of failure*. Furthermore, there is a high positive correlation between gender and single motherhood, so we need to include only one of these variables in the regressions.

Table 5, in appendix 1, shows the correlation coefficients between all the variables and countries only for year 2015. All the correlations have lowered in magnitude with the exception of *self-perception*, but keep the same signs as the ones obtained in Table 4. Hence, we may expect that both models for LATAM (logit panel and cross-section) will yield similar results.

Table 6a, in appendix 2, shows the results of the unbalanced logit panel regressions for LATAM during the years 2010-2015. As we can see all signs are the ones we found from the descriptive analysis of the correlation coefficients, but not all are significant. *Gender*, *single motherhood* and *EMBI* are significant and have a positive impact into the fear of failure, while *age*, *contact network*, *self-perception*, and *education* are also significant, but have a negative impact into fear of failure. All regressions were estimated using the robust standard errors with the aim of dealing with Heteroskedasticity in the estimations and these estimates are BLUE (best linear unbiased estimate) due to the large sample.

We confirm our first hypothesis because the variable self-perception is negative and statistically significant with 99 % confidence in all regressions. Self-perception has a negative relationship with the dependent variable “fear of failure”, which indicates that individuals’ confidence in their own knowledge and abilities implies a lower fear of failure. In other words, this may help individuals to overcome the affective arousal to start a new business. This result is consistent with the one of Arenius & Minniti (2005), Sepúlveda & Bonilla (2014), and Ekore & Okekeocha (2012).

The individuals’ internal cognitive evaluations are being affected by their cognitive traits, in particular by his gender, age and education. We found that gender has a positive coefficient and is statistically significant at 99 % in all regressions, hence females have more fear of failure than man. We also found that being a single mother also increases the fear of failure in all countries whenever gender is not included. Our result related to gender is consistent with the one obtained by Llussá (2010) and Mayorga et al. (2020). However, the result related to single motherhood is new, but is consistent with the fact that females need to secure the daily support for their children and therefore are more risk-averse than males.

As opposed to Sepúlveda and Bonilla (2014) we find that age has a negative coefficient and is statistically significant at 99 % in almost all regressions. Hence older adults have lower fear or failure than younger ones.

Furthermore, there is no change as individuals get older because the coefficient of  $age^2$  is not significant. Our result is consistent with the findings of Schlaegel & Koenig (2014) that concluded that age is one of the most important determinants for starting a business.

We also find that education has a negative coefficient and is statistically significant at 99 % in all regressions. As individuals have more years of education, they will have lower fear of failure. This situation does not change through time because the coefficient of  $education^2$  is also negative and the coefficient of the cross-variable education x age is also negative. It is also interesting to note that more educated individuals with a negative business experience ( $business\ experience \times education$ ) have more fear of failure than non-educated younger individuals, then a negative business experience matters. Our result related to education is consistent with the one of Arenius & Minniti (2005), who concluded that the higher the individuals' level of education, the higher likelihood of starting a new business. Our results related to gender, age and education imply that adult males with more years of education have less fear of failure than younger females with fewer years of education. This result confirms our second hypothesis because individuals' internal cognitive traits influence their fear of failure assessment.

We found that a negative business experience only matters if considered jointly with age, but not alone. Furthermore, contact network has a negative impact into de fear of failure and is statistically significant at 99 %. Hence, individuals who knew people who started their business in the last two years have lower fear of failure. This result is consistent with the one of Hoang & Antonicic (2003) whom concluded that entrepreneurial networks rise the intention to start a new business.

The variable EMBI represents the market sentiment with respect to the country risk, we found that the higher the country risk, the higher the sentiment of fear of failure. For instance, in the face of an economic recession fewer number of individuals are going to start their business.

Our results related to business experience, contact network and country risk validate our last hypothesis because we find that individuals' inner context (negative business experience and contact network) as well as their external context (country risk) influence in their fear of failure experience.

Table 6b, in appendix 2, shows marginal effects of selected regressions from Table 6a over the fear of failure. We found that an individual's high self-perception of having the skills, knowledge and experience required to start a business reduces the probability of having fear of failure in 18.63

As we see in Table 6b being a female increases the probability of having fear of failure in 1.435 % and being a single mother increases the probability of having fear of failure in 1.146 %. Also, the increase of individual's age in one year reduces probability of suffering from fear of failure in 0.71 %. Besides, having one more year of education reduces the probability of feeling fear of failure in 0.90 %.

In relation to the individuals' inner and external context, we see that knowing entrepreneurs who have started their business in the previous two years lowers the probability of having fear of failure in 1.2 %, while the increase in 100 basis points in country risk increases the probability of having fear of failure in 0.40 %

## 5.2. Results for LATAM from cross-sectional regressions (2015)

Table 7, in appendix 3, shows the results of the cross-sectional regressions for the five countries (LATAM) in year 2015. In relation to the coefficient of self-perception it is negative and statistically significant for all regressions, this verifies the support to our first hypothesis.

Concerning the coefficients of gender and single motherhood they are both positive and statistically significant at 99 % in all regressions, the coefficients of age are negative and statistically significant only in half of the regressions, and the coefficients of education are negative and statistically significant in all regressions. Hence, we also find support for our second hypothesis. It is worth noting that the non-linear transformations

of age and education do not change the sign of the coefficients and are statistically significant in all regressions too. Therefore, the effect of these variables does not change through time.

The main difference between the cross-sectional regressions and the unbalanced logit panel regressions comes in the estimation of the coefficients of *business experience and contact network* because, although they do have the same signs as before, they are not statistically significant. This means that the importance of these two factors changes through time and it is different among countries. From the cross-sectional regressions for LATAM of years 2010-2014, we find that these factors were statistically significant in 3 out of the 5 years and with the same signs as before (not reported). In the next section we will see whether the importance of these two factors changes across countries.

In relation to country risk, we find that all coefficients are positive, but only half of them are statistically significant. Again, the cross variable *business experience*  $\times$  *education* turns out to be positive, which means that a negative business experience matters for the most educated individuals. Overall, we do not find consistent support through the years for our third hypothesis, so we need to dig more in the differences between countries.

### **5.3. Results for individual countries**

Tables 8a, 8b, 8c, 8d and 8e, in appendix 4, show the results of the unbalanced logit panel regressions for Brazil, Colombia, Chile, Mexico and Peru during years 2010-2015. As we can see, our first hypothesis is again verified because all coefficients of self-perception are negative and significant at 99 % in all countries and in all regressions. This is definitely our strongest result because individuals use self-perception to overcome the affective arousal towards fear of failure.

Concerning gender we find again a consistent result across countries because all coefficients are positive and statistically significant in all regressions. Hence, women are having more fear of failure than men. This result is magnified if we use the variable single motherhood instead of gender because the positive coefficients increase substantially in all countries.

We find that age is a very important factor for Brazil, Colombia and Chile, but not really so for Mexico and Peru. In fact, in the first three countries we find that age has negative coefficients and it is statistically significant at 99 %, the same happens with its non-linear transformations ( $age^2$ ), so its effect does not change through time. However, in Mexico and Peru we do find some traces of the negative effect of age, but not in a constant way.

The variable education changes among countries in a very important way. In the case of Colombia and Chile it is a very important variable with negative coefficients and statistically significant. In fact, its non-linear transformation  $education^2$  changes the sign to positive, which means that highly educated individuals are having more fear of failure rather than less educated ones. This has to do also with the labor opportunity costs of a well-paid job. In the case of Mexico and Peru we do find some traces that education matters also with negative impact into the fear of failure, but for the case of Brazil this variable does not matter. Overall we find support for our second hypothesis among the five countries studied, but with important differences among them.

In relation to business experience, we find support in Chile and in Mexico because all coefficients have positive signs and half of them are statistically significant, so a recent negative business experience increases fear of failure. There are traces that business experience  $\times$  age matters in Brazil, so older individuals increase their fear of failure in the face of a negative business experience. We also find that business experience  $\times$  education matters in Chile, but with a negative sign, which means that more educated individuals will manage better a previous negative business experience.

We find support for contact network in Colombia, Chile, Mexico and Peru, but not in Brazil because all coefficients have negative sign and the majority of them are statistically significant. Finally, we find support in all countries for country risk because all coefficients are positive and statistically significant. Overall, we find support for our third hypothesis with important changes between countries.

## 6. Conclusion

The individual's affective arousal towards fear of failure is embodied in a dynamic process where she has an instinctive first reaction towards the creation of new business venture. She uses her self-perception to overcome her fear of failure, which is affected in turn by her filters (age, single motherhood, age, and education) and her inner (business experience and contact network) and external (country risk) experiences. If she manages to align her beliefs, values and feelings with the ones required by the challenge (i.e. starting a new business) she will undertake the business otherwise, she won't.

Assuming that individuals align their mindset with the one required by the challenge, we have shown that self-perception, gender, age and education are filters that influence the fear of failure experience of individuals. We also have shown that some other factors in the inner (business experience and contact network) and external (country risk) context of the individuals also may influence their fear or failure experience. In this sense, government, institutions, business incubators and public and private organizations can all extent their programs in order to cover not only the development of a good business idea but also to strengthen individuals' certain personality traits in order to make them conscious of them and avoid excessive overconfidence.

We have shown that single mothers suffer from the highest fear of failure among women and unfortunately there is little focus within public programs on assistance directed towards female entrepreneurship and in particular to single mothers. According to the 2015 Female Entrepreneurship Index carried out by the GEDI (Global Entrepreneurship and Development Institute), 61 % of the 77 countries analyzed scored less than 50 % for competitive female entrepreneurship. In the statistics for Latin America, Chile led the region in 15th place, followed by Colombia (29), Peru (38), Mexico (41) and Brazil (60).

We test a reduce version of our model, so it remains to test the full version of it considering the different impacts of self-perception, individuals' filters and contrasting experiences between those individuals who do not align their mindset with the one required to start a new business venture and the ones who manage to do it. More studies need to be carried-out in order to test how individuals' filters relate to the individuals' ability to finance and to manage the new venture, their opportunity costs and other factors. We also need more longitudinal studies to find out how past behaviors affect the individual self-perception towards starting a new business venture.

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## Appendix 1: Correlation Matrices

**Table 4.** Correlations for LATAM 2010-2015

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Fear of failure	1													
2. Gender	<b>0.0069</b>	1												
3. Age	<b>-0.0717</b>	-0.0157	1											
4. Business Experience	<b>0.063</b>	-0.0017	0.3312	1										
5. Contact Network	<b>-0.1556</b>	-0.045	-0.0637	-0.0191	1									
6. Self-perception	<b>-0.0263</b>	-0.0447	0.0134	-0.0075	0.2158	1								
7. Education	<b>-0.3946</b>	-0.0152	-0.1083	-0.0469	0.211	0.1056	1							
8. Age <sup>2</sup>	-0.301	-0.0188	0.8304	-0.0358	0.0034	0.0173	0.0816	1						
9. Education <sup>2</sup>	-0.1098	-0.0196	-0.1213	-0.0159	0.1466	Table	0.8524	-0.046	1					
10. Age x Business Experience	-0.0307	-0.0027	0.1097	-0.0036	0.0344	0.0524	0.0176	0.1327	0.0034	1				
11. Education x Age	<b>-0.0103</b>	-0.0226	0.3968	0.1481	0.0934	0.104	0.715	0.3943	0.7817	0.0662	1			
12. Business Experience x Education	0.041	-0.0093	-0.0239	-0.0005	0.1007	0.0686	0.0722	-0.0322	0.1021	0.088	0.0682	1		
13. Single Motherhood	<b>0.1057</b>	<b>0.5548</b>	0.0224	-0.013	-0.0045	-0.0451	0.0633	0.0726	0.0063	0.0286	0.0277	-0.0273	1	
14. EMBI	<b>0.0832</b>	0.0047	-0.0329	-0.0139	0.0025	-0.0248	-0.0042	-0.0043	-0.0511	-0.0332	-0.0533	0.0034	0.0222	1

**Table 5.** Correlations for LATAM 2015

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Fear of failure	1													
2. Gender	<b>0.0211</b>	1												
3. Age	<b>-0.0547</b>	-0.0286	1											
4. Business Experience	<b>0.0004</b>	-0.0076	0.0203	1										
5. Contact Network	<b>-0.0357</b>	-0.0284	-0.0713	0.0756	1									
6. Self-perception	<b>-0.1619</b>	-0.0318	0.0002	0.0993	0.2424	1								
7. Education	<b>-0.0682</b>	-0.0158	-0.1512	0.0229	0.1066	0.1345	1							
8. Age <sup>2</sup>	-0.0419	-0.0415	0.7957	0.001	-0.1017	0.0413	0.0457	1						
9. Education <sup>2</sup>	-0.0635	-0.0154	-0.1221	0.0235	0.109	0.1388	0.9857	0.069	1					
10. Age x Business Experience	-0.0004	-0.024	0.1101	0.3793	0.0044	0.0447	0.0219	0.1329	0.0208	1				
11. Education x Age	<b>-0.0404</b>	-0.019	0.2993	0.0204	0.0391	0.1377	0.7664	0.5163	0.7731	0.0844	1			
12. Business Experience x Education	0.0033	-0.0042	-0.0152	0.7464	0.0743	0.0738	0.1219	-0.019	0.1251	0.007	0.0716	1		
13. Single Motherhood	<b>0.0366</b>	<b>0.7842</b>	-0.0417	-0.0132	-0.0417	-0.0401	-0.0345	0.019	-0.0316	-0.0354	-0.0163	0.0003	1	
14. EMBI	<b>0.0276</b>	0.0287	-0.0598	-0.0364	-0.0399	-0.0135	-0.0584	0.1231	-0.0399	-0.0569	0.0072	-0.0016	0.3049	1

## Appendix 2: Results of unbalanced logit panel regressions for LATAM

**Table 6a.** Results of unbalanced logit panel regressions for LATAM (2010-2015)

Explanatory Variables	(1)	(2)	(3)	(4)
Gender	0.0478*** -0.01	0.0477*** -0.1		0.048*** -0.01
Age	-0.0232*** -0.0022	-0.0118*** -0.0007	-0.0236*** -0.002	-0.024 -0.002
Business Experience		0.089 0.04		0.034 0.03
Contact Network	-0.0586*** -0.011	-0.0535*** -0.02	-0.057 -0.01	-0.0613*** -0.03
Self-perception	-0.6231*** -0.011	-0.9045*** -0.01	-0.6222*** -0.01	-0.6246*** -0.01
Education	-0.00011** -0.00003		-0.00011*** -0.00001	-0.003*** -0.000006
Age <sup>2</sup>	-0.00003 -0.00002		0.000034 -0.00002	0.000038 -0.00002
Education <sup>2</sup>				-0.000000014 -0.00000003
Age x Business Experience			0.0000129 -0.000015	0.0000126 -0.00001
Education x Age	-0.0000012* -0.000071	-0.0000035* -0.000004		-0.00000007 -0.00008
Business Experience x Education				0.000086** -0.00003
Single Motherhood			0.2745*** -0.041	
EMBI	0.016** -0.00006	0.008* -0.00006	0.01*** -0.0006	0.016** -0.00006
Constant	-0.3016*** -0.02	-3.82* -0.03	-3.73* -0.027	-0.6239*** -0.03
Number of observations	121823	121823	121823	121823
Number of countries	5	5	5	5
Number of years	6	6	6	6
Hausmann Test (p-value)	0.124	0.137	0.119	0.122
Macroeconomic control	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes
R <sup>2</sup> within	0.562	0.5523	0.5672	0.671
R <sup>2</sup> between	0.3137	0.3674	0.4873	0.5023
R <sup>2</sup> overall	0.3001	0.3549	0.4521	0.4794

Statistical Standard Robust Errors in parentheses.

\*\*\* Significance at 99 %), \*\* significance at 95 % \* significance at 90 %.

Fear of failure is a dummy variable, takes the value of 1 in case the individual suffers from it and 0 otherwise; Gender is a dummy variable, takes the value of 1 when is a woman and 0 when the individual is a man. Age is the age in years; Business Experience is a dummy variable, takes the value of 1 if the individual has had a negative experience in business in the last 12 months, 0 otherwise; Contact Network is a dummy variable dummy variable that takes the value of 1 if the individual knows someone who has started a business in the last two years and 0 otherwise; Self-perception is a dummy variable that takes the value of 1 if the individual considers that he has the necessary characteristics to start a new business and 0 otherwise; Education is the number of years of formal education; Single Motherhood is the percentage of single mothers with respect to the total number of women entrepreneurs in the country; and EMBI is the Country Risk.

**Table 6b.** Marginal effects of selected unbalanced logit panel regressions for LATAM (2010-2015)

Variables	Marginal effects	Column from Table 6a
Gender	0.01435*** -0.003	(4)
Age	-0.0071*** -0.006	(4)
Self-perception	-.18630*** -0.003	(2)
Education	-0.009 -0.00001	(4)
Contact Network	-0.012*** -0.003	(4)
Single Motherhood	0.01146*** -0.004	(3)
EMBI	0.004 -0.0002	(4)
<b>Observations</b>	119995	
<b>Standard Errors in parentheses:</b> ***p<0.01, **p<0.05, *p<.01		

### Appendix 3: Results of logistic cross-sectional regressions

**Table 7.** Results of logistic cross-sectional regressions for LATAM (2015)

Explanatory Variables	(1)	(2)	(3)	(4)
Gender	0.074*** -0.04	0.0723* -0.04		0.074*** -0.04
Age	-0.004 -0.003	-0.01009 The	-0.006** -0.003	-0.0030*** -0.003
Business Experience		0.039 -0.14		0.018 -0.17
Contact Network	-0.061 -0.04	-0.05 -0.04	-0.061 -0.04	-0.053 -0.04
Self-perception	-0.6944*** -0.04	-0.7010*** -0.04	-0.6969*** -0.04	-0.7010*** -0.04
Education	-0.00003** -0.00008	-0.00008** -0.0002	-0.0001*** -0.0004	-0.0005** -0.0002
Age <sup>2</sup>	-0.00009** -0.00004			-0.0001** -0.00004
Education <sup>2</sup>				-0.0000003** -0.0000003
Age x Business Experience	0.00004 -0.007		0.00004 -0.007	0.000375 -0.00009
Education x Age	-0.000003* -0.0001	-0.0000022* -0.0001		-0.0000034* -0.0001
Business Experience x Education		-0.00015 -0.0001		0.000168* -0.0001
Single Motherhood			0.4657*** -0.021	
EMBI	0.004 -0.005	0.003 -0.006	0.009** -0.007	0.00364* -0.007
Constant	-1.41* -1.92	-1.31* -0.67	-0.356* -1.9	-1.3*** -1.93
Number of observations	10175	10175	10175	10175
Number of countries	5	5	5	5
Number of years	1	1	1	1
Macroeconomic control	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.3015	0.4552	0.4314	0.4592

Statistical Standard Robust Errors in parentheses.

\*\*\* Significance at 99 %), \*\* significance at 95 % \* significance at 90 %.

Fear of failure is a dummy variable, takes the value of 1 in case the individual suffers from it and 0 otherwise; Gender is a dummy variable, takes the value of 1 when is a woman and 0 when the individual is a man. Age is the age in years; Business Experience is a dummy variable, takes the value of 1 if the individual has had a negative experience in business in the last 12 months, 0 otherwise; Contact Network is a dummy variable dummy variable that takes the value of 1 if the individual knows someone who has started a business in the last two years and 0 otherwise; Self-perception is a dummy variable that takes the value of 1 if the individual considers that he has the necessary characteristics to start a new business and 0 otherwise; Education is the number of years of formal education; Single Motherhood is the percentage of single mothers with respect to the total number of women entrepreneurs in the country; and EMBI is the Country Risk.

**Appendix 4: Results of unbalanced logit panel regressions per country (2010-2015)**

**Table 8a.** Results of unbalanced logit panel regressions for Brazil

Explanatory Variables	(1)	(2)	(3)	(4)
Gender	0.2211*** -0.02	0.2274*** -0.02		0.2214*** -0.02
Age	0.066*** -0.007	0.007*** -0.002	0.007*** -0.002	0.067*** -0.007
Business Experience		0.2122 -0.13		0.069 -0.15
Contact Network	-0.041 -0.02	-0.0339 -0.02	-0.036 -0.02	-0.0413 -0.02
Self-perception	-1.2421*** -0.028	-1.2177*** -0.02	-1.229*** -0.02	-1.2432*** -0.02
Education	-0.000012 -0.00007	0.000002 -0.00001	-0.000009 -0.00007	-0.000046 -0.00001
Age <sup>2</sup>	-0.0007*** -0.00009			-0.0007*** -0.00009
Education <sup>2</sup>		-0.00000008 -0.0000001		-0.00000001 -0.0000001
Age x Business Experience	0.00015** -0.000005			0.0001 -0.00007
Education x Age	-0.000004* -0.000002	-0.000004* -0.000019		-0.000004* -0.000002
Business Experience x Education		-0.000002 -0.0001		0.00001 -0.0001
Single Motherhood			0.7722*** -0.1	
EMBI	0.00024** -0.000001	0.00022* -0.00011	0.00011* -0.00011	0.00024** -0.00011
Constant	-0.95*** -0.14	-0.060*** -0.08	0.11*** -0.05	-0.98*** -0.14
<b>Number of observations</b>	<b>24930</b>	<b>24930</b>	<b>24930</b>	<b>24930</b>
<b>Number of years</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Hausmann Test (p-value)</b>	<b>0.121</b>	<b>0.122</b>	<b>0.118</b>	<b>0.124</b>
<b>Macroeconomic control</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Country Dummies</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>R<sup>2</sup> within</b>	<b>0.23671</b>	<b>0.2365</b>	<b>0.2432</b>	<b>0.2498</b>
<b>R<sup>2</sup> between</b>	<b>0.5251</b>	<b>0.4734</b>	<b>0.5218</b>	<b>0.5123</b>
<b>R<sup>2</sup> overall</b>	<b>0.4723</b>	<b>0.4552</b>	<b>0.4314</b>	<b>0.4592</b>

Statistical Standard Robust Errors in parentheses.

\*\*\* Significance at 99 %), \*\* significance at 95 % \* significance at 90 %.

Fear of failure is a dummy variable, takes the value of 1 in case the individual suffers from it and 0 otherwise; Gender is a dummy variable, takes the value of 1 when is a woman and 0 when the individual is a man. Age is the age in years; Business Experience is a dummy variable, takes the value of 1 if the individual has had a negative experience in business in the last 12 months, 0 otherwise; Contact Network is a dummy variable dummy variable that takes the value of 1 if the individual knows someone who has started a business in the last two years and 0 otherwise; Self-perception is a dummy variable that takes the value of 1 if the individual considers that he has the necessary characteristics to start a new business and 0 otherwise; Education is the number of years of formal education; Single Motherhood is the percentage of single mothers with respect to the total number of women entrepreneurs in the country; and EMBI is the Country Risk.

**Table 8b.** Results of unbalanced logit panel regressions for Colombia

Explanatory Variables	(1)	(2)	(3)	(4)
Gender	0.2634*** -0.02	0.2856*** -0.02		0.2652*** -0.02
Age	0.089*** -0.006	0.009*** -0.0017	0.012*** -0.0008	0.087*** -0.006
Business Experience		-0.069 -0.1		-0.1971 -0.21
Contact Network	-0.077*** -0.02	-0.078*** -0.02	-0.0711** -0.023	-0.083*** -0.02
Self-perception	-0.7634*** -0.022	-0.7297*** -0.02	-0.7238*** -0.02	-0.7652*** -0.022
Education	-0.00001 -0.00007	-0.0007*** -0.0001	0.00012*** -0.00002	-0.0004*** -0.0001
Age <sup>2</sup>	-0.000094*** -0.00007			-0.0009*** -0.00007
Education <sup>2</sup>		0.0000003*** -0.00000006		0.0000003** -0.00000006
Age x Business Experience	0.00025 -0.0011			0.0002 -0.004
Education x Age	-0.000002** -0.000001	0.000021 -0.00009		-0.000002 -0.000001
Business Experience x Education		0.00093 -0.0009		0.00009 -0.00009
Single Motherhood			1.89*** -0.14	
EMBI	0.00031** -0.0001	0.000287* -0.0001	0.00034* -0.0001	0.000332* -0.0001
Constant	-2.19*** -0.14	-0.606** -0.08	-0.8177*** -0.04	-2.06** -0.14
<b>Number of observations</b>	<b>42468</b>	<b>42468</b>	<b>42468</b>	<b>42468</b>
<b>Number of years</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Hausmann Test (p-value)</b>	<b>0.129</b>	<b>0.126</b>	<b>0.131</b>	<b>0.127</b>
<b>Macroeconomic control</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Country Dummies</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>R<sup>2</sup> within</b>	<b>0.2328</b>	<b>0.2245</b>	<b>0.2312</b>	<b>0.2317</b>
<b>R<sup>2</sup> between</b>	<b>0.4283</b>	<b>0.4264</b>	<b>0.4376</b>	<b>0.4873</b>
<b>R<sup>2</sup> overall</b>	<b>0.4027</b>	<b>0.4123</b>	<b>0.413</b>	<b>0.4097</b>

Statistical Standard Robust Errors in parentheses.

\*\*\* Significance at 99 %), \*\* significance at 95 % \* significance at 90 %.

Fear of failure is a dummy variable, takes the value of 1 in case the individual suffers from it and 0 otherwise; Gender is a dummy variable, takes the value of 1 when is a woman and 0 when the individual is a man. Age is the age in years; Business Experience is a dummy variable, takes the value of 1 if the individual has had a negative experience in business in the last 12 months, 0 otherwise; Contact Network is a dummy variable dummy variable that takes the value of 1 if the individual knows someone who has started a business in the last two years and 0 otherwise; Self-perception is a dummy variable that takes the value of 1 if the individual considers that he has the necessary characteristics to start a new business and 0 otherwise; Education is the number of years of formal education; Single Motherhood is the percentage of single mothers with respect to the total number of women entrepreneurs in the country; and EMBI is the Country Risk.

**Table 8c.** Results of unbalanced logit panel regressions for Chile

Explanatory Variables	(1)	(2)	(3)	(4)
Gender	0.2967*** -0.02	0.3187*** -0.02		0.2983*** -0.02
Age	0.0510*** -0.005	0.01143*** -0.001	0.009*** -0.0007	0.049*** -0.005
Business Experience		0.2238* -0.12		0.1157 -0.17
Contact Network	-0.1763*** -0.02	-0.1672*** -0.02	-0.1655*** -0.02	-0.1725*** -0.02
Self-perception	-0.9743*** -0.02	-0.9449*** -0.02	-0.9480*** -0.02	-0.9746** -0.02
Education	0.00018 -0.00009	-0.00038** -0.00016	-0.00010*** -0.00002	-0.00012 -0.00016
Age <sup>2</sup>	-0.00038*** -0.00004			-0.00037*** -0.00004
Education <sup>2</sup>		0.00000029** -0.0000009		0.00000021* -0.0000009
Age x Business Experience	-0.0000002 0.00002			0.000035 -0.00003
Education x Age	-0.000056** -0.000001	-0.000023 -0.000001		-0.00005** -0.000001
Business Experience x Education		-0.00026* -0.00011		-0.00024* -0.0001
Single Motherhood			0.8203*** -0.07	
EMBI	0.004** -0.002	0.000389* -0.002	0.000365* -0.0018	0.0041* -0.002
Constant	-1.368*** -0.15	-0.4329*** -0.11	-0.3967*** -0.05	-1.29*** -0.16
Number of observations	30319	30319	30319	30319
Number of years	1	1	1	1
Hausmann Test (p-value)	0.133	0.131	0.13	0.136
Macroeconomic control	Yes	Yes	Yes	Yes
Country Dummies	No	No	No	No
R <sup>2</sup> within	0.1624	0.1591	0.1588	0.1609
R <sup>2</sup> between	0.3041	0.2928	0.2903	0.2975
R <sup>2</sup> overall	0.3018	0.2847	0.2885	0.2901

Statistical Standard Robust Errors in parentheses.

\*\*\* Significance at 99 %), \*\* significance at 95 % \* significance at 90 %.

Fear of failure is a dummy variable, takes the value of 1 in case the individual suffers from it and 0 otherwise; Gender is a dummy variable, takes the value of 1 when is a woman and 0 when the individual is a man. Age is the age in years; Business Experience is a dummy variable, takes the value of 1 if the individual has had a negative experience in business in the last 12 months, 0 otherwise; Contact Network is a dummy variable dummy variable that takes the value of 1 if the individual knows someone who has started a business in the last two years and 0 otherwise; Self-perception is a dummy variable that takes the value of 1 if the individual considers that he has the necessary characteristics to start a new business and 0 otherwise; Education is the number of years of formal education; Single Motherhood is the percentage of single mothers with respect to the total number of women entrepreneurs in the country; and EMBI is the Country Risk.

**Table 8d.** Results of unbalanced logit panel regressions for Mexico

Explanatory Variables	(1)	(2)	(3)	(4)
Gender	0.1167*** -0.03	0.1322*** -0.03		0.1154** -0.03
Age	0.0012* -0.001	0.001 -0.001	0.0003 -0.0009	0.0014 -0.001
Business Experience		0.2878* -0.11		0.4760** -0.18
Contact Network	-0.1640* -0.03	-0.1790** -0.03	-0.1829** -0.03	-0.1602* -0.03
Self-perception	-0.5998*** -0.03	-0.6038*** -0.03	-0.6014*** -0.03	-0.6049*** -0.04
Education	-0.00006* -0.00006	-0.00008 -0.0002	-0.0001** -0.00003	0.00001 -0.00024
Age <sup>2</sup>	-0.000001 -0.000002			0.000001 -0.000001
Education <sup>2</sup>		-0.0000003 -0.0000001		-0.0000001 -0.0000001
Age x Business Experience	0.00029 -0.002			-0.008 -0.004
Education x Age	-0.000005** -0.000001	-0.000004*** -0.000001		-0.000005 -0.000001
Business Experience x Education		-0.00013 -0.0001		-0.000011 -0.00013
Single Motherhood			1.11*** -0.31	
EMBI	0.00021* -0.001	0.00022* -0.001	0.000211** -0.001	0.000221* -0.002
Constant	-0.55*** -0.08	-0.56*** -0.06	-0.46*** -0.05	-0.577*** -0.08
Number of observations	12848	12848	12848	12848
Number of years	1	1	1	1
Hausmann Test (p-value)	0.115	0.109	0.113	0.112
Macroeconomic control	Yes	Yes	Yes	Yes
Country Dummies	No	No	No	No
R <sup>2</sup> within	0.1703	0.1687	0.1645	0.1674
R <sup>2</sup> between	0.3928	0.3731	0.3645	0.3706
R <sup>2</sup> overall	0.3654	0.3514	0.3471	0.3597

Statistical Standard Robust Errors in parentheses.

\*\*\* Significance at 99 %), \*\* significance at 95 % \* significance at 90 %.

Fear of failure is a dummy variable, takes the value of 1 in case the individual suffers from it and 0 otherwise; Gender is a dummy variable, takes the value of 1 when is a woman and 0 when the individual is a man. Age is the age in years; Business Experience is a dummy variable, takes the value of 1 if the individual has had a negative experience in business in the last 12 months, 0 otherwise; Contact Network is a dummy variable dummy variable that takes the value of 1 if the individual knows someone who has started a business in the last two years and 0 otherwise; Self-perception is a dummy variable that takes the value of 1 if the individual considers that he has the necessary characteristics to start a new business and 0 otherwise; Education is the number of years of formal education; Single Motherhood is the percentage of single mothers with respect to the total number of women entrepreneurs in the country; and EMBI is the Country Risk.

**Table 8e.** Results of unbalanced logit panel regressions for Peru

Explanatory Variables	(1)	(2)	(3)	(4)
Gender	0.1135*	0.1167*	0.1135*	
	-0.04	-0.04	-0.04	
Age	0.0215	0.004	0.0017	0.023*
	-0.012	-0.003	-0.001	-0.012
Business Experience		-0.183		-0.17
		-0.16		-0.36
Contact Network	-0.1368**	-0.14	-0.1433**	-0.1371
	-0.04	-0.04	-0.045	-0.046
Self-perception	-0.7471***	-0.7420***	-0.7422***	-0.7459***
	-0.04	-0.04	-0.04	-0.04
Education	-0.00013	-0.00016	-0.00025***	0.0002
	-0.0001	-0.0004	-0.0004	-0.0004
Age <sup>2</sup>	-0.00021			-0.00029
	-0.0001			-0.00014
Education <sup>2</sup>		-0.0000002		-0.0000002
		-0.0000002		-0.0000002
Age x Business Experience	-0.0004		0.0003	
	-0.002		0.0076	
Education x Age	-0.000003	-0.000002		-0.0000033
	-0.000003	-0.000003		-0.0000035
Business Experience x Education		0.00024	0.00023	
		-0.00015	-0.0001	
Single Motherhood		0.4751***		
		-0.18		
EMBI	0.001***	0.00174***	0.00176***	0.00174***
	-0.0004	-0.0004	-0.0004	-0.0004
Constant	-0.81**	-0.53**	-0.41**	-0.86**
	-0.27	-0.18	-0.13	-0.28
<b>Number of observations</b>	9430	9430	9430	9430
<b>Number of years</b>	1	1	1	1
<b>Hausmann Test (p-value)</b>	0.108	0.111	0.112	0.11
<b>Macroeconomic control</b>	Yes	Yes	Yes	Yes
<b>Country Dummies</b>	No	No	No	No
<b>R<sup>2</sup> within</b>	0.1229	0.1183	0.1192	0.1199
<b>R<sup>2</sup> between</b>	0.2305	0.2148	0.2026	0.1937
<b>R<sup>2</sup> overall</b>	0.2014	0.1934	0.2011	0.1901

Statistical Standard Robust Errors in parentheses.

\*\*\* Significance at 99 %), \*\* significance at 95 % \* significance at 90 %.

Fear of failure is a dummy variable, takes the value of 1 in case the individual suffers from it and 0 otherwise; Gender is a dummy variable, takes the value of 1 when is a woman and 0 when the individual is a man. Age is the age in years; Business Experience is a dummy variable, takes the value of 1 if the individual has had a negative experience in business in the last 12 months, 0 otherwise; Contact Network is a dummy variable dummy variable that takes the value of 1 if the individual knows someone who has started a business in the last two years and 0 otherwise; Self-perception is a dummy variable that takes the value of 1 if the individual considers that he has the necessary characteristics to start a new business and 0 otherwise; Education is the number of years of formal education; Single Motherhood is the percentage of single mothers with respect to the total number of women entrepreneurs in the country; and EMBI is the Country Risk.