




## Research Article

# Entrepreneurship by necessity in times of pandemic: Entrepreneurial motivation and the regulatory focus in explaining the intention to undertake

Eduardo Mesquita<sup>a\*</sup> , Tainá Townsend<sup>b</sup> , and Evandro Luiz Lopes<sup>c</sup> <sup>a</sup> Centro Universitário SENAC (SENAC-SP), São Paulo, SP, Brazil<sup>b</sup> Universidade Nove de Julho (UNINOVE), São Paulo, SP, Brazil<sup>c</sup> Escola Superior de Propaganda e Marketing (ESPM), São Paulo, SP, Brazil

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### \*Corresponding author:

Eduardo Mesquita  
[du.mesq@uni9.edu.br](mailto:du.mesq@uni9.edu.br)

## Abstract

**Objective:** This study aims to analyze the effect of the need for security on the intention to undertake when mediated by entrepreneurial motivation with the regulatory focus on college students. **Methodology/approach:** Using analysis of variance and linear regression tests, we conducted data analysis on both direct relationships and mediations with a sample consisting of 217 university students. **Main results:** We identified that the need for safety positively influences entrepreneurial motivation. We also recognized that this result occurs through the double sequential mediation of entrepreneurial motivation and regulatory focus. Thus, students with a promotional regulatory focus were more willing to undertake than those whose regulatory focus is on prevention. **Theoretical/methodological contributions:** Higgins and Pinelli (2020) indicated that entrepreneurship rarely uses regulatory focus theory despite it being adequate. Furthermore, the economic crisis generated by the COVID-19 pandemic may be a factor that influences the motivation to undertake, as it is an extrinsic motivation driven by the need for security. **Relevance/originality:** We identified that the need for security can trigger the motivation to undertake, making individuals present a state of promotional self-regulation. **Social/management contributions:** Based on the results, it can be stated that entrepreneurial education should address different types of communication in order to encourage future entrepreneurs. Clarification of the gain is commonly applied in classrooms, but no-loss communication should also be adopted.

**Keywords:** Entrepreneurship. Regulatory Focus. Intention to undertake. Motivation in Entrepreneurship. Entrepreneurship by necessity.

Empreendedorismo por necessidade em tempos de pandemia:  
A motivação empreendedora e o foco regulatório na explicação da  
intenção de empreender

## Resumo

**Objetivo:** Este estudo tem como objetivo analisar o efeito da necessidade de segurança na intenção de empreender quando mediada pela motivação empreendedora com o foco regulatório em estudantes universitários. **Metodologia/abordagem:** Utilizando análise de variância e testes de regressão linear, realizamos análise de dados de relações diretas e mediações com uma amostra composta por 217 estudantes universitários. **Principais resultados:** Identificamos que a necessidade de segurança influencia positivamente a motivação empreendedora. Também reconhecemos que esse resultado ocorre por meio da dupla mediação sequencial da motivação empreendedora e do foco regulatório. Assim, os alunos com foco regulatório promocional mostraram-se mais dispostos a empreender do que aqueles com foco regulatório na prevenção. **Contribuições teórico-metodológicas:** Higgins e Pinelli (2020) indicaram que o empreendedorismo raramente utiliza a teoria do foco regulatório apesar de ser adequado. Além disso, a crise econômica gerada pela pandemia do COVID-19 pode ser um fator que influencia a motivação para empreender, pois é uma motivação extrínseca impulsionada pela necessidade de segurança. **Relevância/originalidade:** Identificamos que a necessidade de segurança pode desencadear a motivação para empreender, fazendo com que os indivíduos apresentem um estado de autorregulação promocional. **Contribuições sociais/de gestão:** Com base nos resultados, é possível afirmar que a educação empreendedora deve abordar diferentes tipos de comunicação para incentivar futuros empreendedores. A explicitação do ganho é comumente aplicado em salas de aula, mas a comunicação sem perdas também deve ser adotada.

**Palavras-chave:** Empreendedorismo. Foco Regulatório. Intenção de empreender. Motivação no Empreendedorismo. Empreendedorismo por necessidade.

## INTRODUCTION

Despite the recognized value of entrepreneurship in economic growth, entrepreneurial activity varies widely across the world, and emerging economies differ significantly from developed ones owing to their specific development conditions (Sun et al., 2020). According to the International Monetary Fund (2021), Brazil is the largest economy in Latin America. Like other emerging countries, Brazil was already facing political and economic crises before the COVID-19 pandemic (Prates & Barbosa, 2020).

One way of fostering entrepreneurship is through basic education (Ruskovaara & Pihkala, 2015) and university education (Barba-Sánchez & Atienza-Sahuquillo, 2018). However, education is not the only factor that leads students to become entrepreneurs, and a better understanding the behavior of these individuals can be useful when it comes to identifying characteristics (both innate and acquired) that result in greater entrepreneurial capacity/motivation. It is important to empower students with entrepreneurial skills, but they also need to be motivated (Kim & Park, 2019) and have an intention to undertake (Sansone et al., 2021).

Previous research has suggested that the scars of persistently lower wages, lower occupational prestige, and the continued threat of unemployment could result in a more pessimistic perception of the economic environment and possibly push rather than pull individuals into entrepreneurship (Dvouletý et al., 2018). In this respect, the increase in unemployment and the lack of opportunities could be one of the motivators for individuals to become entrepreneurs, leading to an increase in the number of entrepreneurs motivated not by opportunity, but by need (Liñán & Jaén, 2020). Thus, university students might become motivated to start a business to support their families or improve their lives (Yin, 2022) in a context like the COVID-19 pandemic. Therefore, a crisis context may be a factor that influences a student's motivation to become an entrepreneur, being an extrinsic motivation (Carsrud & Brännback, 2011) driven by the need for security (Dencker et al., 2021). Furthermore, theoretical and empirical gaps remain to be explored regarding the influence of psychological aspects on motivation and intention to undertake.

In their review, Higgins and Pinelli (2020) indicated that regulatory focus theory, which classifies individuals as preventive and promotional, has rarely been used in entrepreneurship. Since it is one of the facets of individuals' psychological personality, the regulatory focus can explain to some extent an individual's intention to launch himself into the world of entrepreneurship. Moreover, previous studies have identified the mediating effect of the regulatory focus on decision-making processes (Xu & Wang, 2019) and career-related issues (Kim et al., 2020). Thus, an individual's need for safety and regulatory focus may be important factors that affect the motivation and intention to undertake.

This study aims to analyze the effect of the need for security on intention to undertake mediated by entrepreneurial motivation and by the regulatory focus on university students. We conducted survey-type research with a cross-sectional collection of a sample consisting of 217 university students. Our research confirmed that the need for security positively affects the motivation to start a new venture, and the regulatory focus may be part of a cognitive mechanism that influences the transformation of motivation into the entrepreneurial intention of university students. The literature on entrepreneurship by necessity verifies most of our findings.

## THEORETICAL FRAMEWORK

### Entrepreneurial education

Entrepreneurship plays an essential role in societies, leading to increased economic efficiency, the creation of new jobs, and innovation transmitted to the market (Shane & Venkataraman,

2000). Previous studies have promoted education as a transmitter of a society's culture to members through knowledge, skills, and attitudes, which impact behavior (Iyortsuun et al., 2021). Thus, the role of entrepreneurship education is a constantly discussed topic, as is its influence on motivating entrepreneurial activities (Oo et al., 2018).

The entrepreneurial education literature continues to evolve and, consequently, there are different definitions for it. According to Fayolle et al. (2006, p. 702), entrepreneurial education is a broad concept, referring to "any pedagogical program or education process for entrepreneurial attitudes and skills". Entrepreneurial education can be considered as a method with creative and iterative learning based on practice and collaboration rather than a specific and predictable process (Oo et al., 2018). Overall, studies on this topic appear to agree that the goal of entrepreneurial education is to help students to increase the likelihood of business success and improve in the careers they can choose (Kim & Park, 2019). Although the literature indicates that specialized education can improve individuals' self-efficacy and bolster their belief in recognizing new business opportunities, it is still necessary to arrive at a consensus regarding the value of education for entrepreneurship (Oo et al., 2018).

### Entrepreneurial intention

Entrepreneurial intention has been extensively researched in recent years as it is one of the main predictors of entrepreneurial behavior (Engle et al., 2010; Galanakis & Giourka, 2017; Gieure et al., 2019; Shirokova et al., 2016). According to Ajzen (1991, p. 181), intentions are "indications of how much people are willing to try, of how much effort they plan to exert to carry out the behavior". Previous empirical studies in different domains of research, including entrepreneurship, have supported the predictive power of intentions with regard to subsequent behavior (Shirokova et al., 2016). In this respect, the intention to undertake can be explained by an individual's psychological state, which leads to the desire to start a new business (Guerrero et al., 2008).

Research in the field of entrepreneurship defines an individual's entrepreneurial intention as a kind of conviction recognized by an individual (Bird, 1988; Shapero & Sokol, 1982) who intends to open a new business venture in the future (Thompson, 2009). The logic behind intention models can be applied to any planned behavior, not only to initiate (Liñán & Fayolle, 2015). Hence, this field of research seems to extend the view taken by the theory of planned behavior and other contributions from social psychology. Thus, starting a business is the result of intentions, and entrepreneurship is a planned and intentional behavior (Liñán & Fayolle, 2015).

Most of the research on entrepreneurial behavior over the past three decades has focused only on predicting and explaining what differentiates individuals who intend to start their own business from those who do not (Neneh, 2019). Conceptual and empirical analyses of the intention-behavior relationship have revealed that the gap between intention and action can mainly be attributed to people who plan to act but are unable to achieve their intentions (Shirokova et al., 2016). Other factors can lead an individual to turn intention into action. For example, some studies have shown that entrepreneurship education is essential to stimulate entrepreneurial intention and that there is a positive relationship in student entrepreneurial intention (Engle et al., 2010; Sansone et al., 2021; Souitaris et al., 2007). However, growing evidence suggests that not all intentions translate into the actual behavior of starting and operating a new business (Neneh, 2019; Shirokova et al., 2016), even in the case of individuals who have invested time and effort in education that focuses on entrepreneurship.

### Entrepreneurship by necessity

According to Global Entrepreneurship Monitoring (GEM), entrepreneurship consists of necessity entrepreneurship and

opportunity entrepreneurship (Angulo-Guerrero et al., 2017; Yin, 2022). Entrepreneurs by necessity are individuals who open new companies because they find themselves “with no other work options besides being self-employed” (Acs, 2006, p. 98). They represent a substantial proportion of worldwide entrepreneurial activity, accounting for more than half of all entrepreneurs in developing countries and approximately one-fifth of entrepreneurs in developed countries (Nikiforou et al., 2019). Necessity entrepreneurs are often homogeneously described as low-skilled individuals creating small businesses, leaving the necessity entrepreneurship literature underexplored and undertheorized (Dencker et al., 2021).

In addition to being greater due to the lower barriers to entry (Guerrero et al., 2020), entrepreneurship in developing countries is an option to overcome the lack of employment. In addition to serious health consequences, the COVID-19 pandemic also led to economic and social crises in Brazil, leading the labor market to a state of vulnerability (Prates & Barbosa, 2020) and, consequently, potentially directing many people to opt for entrepreneurship to survive this scenario. Thus, the motivation of individuals to satisfy their basic needs through entrepreneurship is one of the main characteristics of entrepreneurship by necessity (Dencker et al., 2021) and is used as a lens to present the need for security of the individuals in this study.

Although studies of necessity entrepreneurship have attracted attention and yielded significant insights, its theoretical understanding remains extremely limited (Dencker et al., 2021). Considering that most entrepreneurs start a new business out of necessity, seeking a better understanding of the relationship between motivation and results is critical to advancing the reassessment of motivation as a dichotomy between undertaking out of necessity or out of opportunity (Puente et al., 2019). Developing a deep understanding of the variation that exists within need entrepreneurship also requires consideration of the individual and contextual differences that have been shown to affect general and necessity entrepreneurship (Dencker et al., 2021).

### Entrepreneurial motivation

According to Bandura and Cervone (1986, p. 228), “unless people believe that, by their actions, they can accomplish a desired feat and avoid undesirable ones, they have little incentive to act”. Thus, motivation can be defined as a psychological cause to produce an action (Schacter et al., 2011). Any factors that serve as guides and motivators are part of the belief that an individual can accomplish something through his actions (Bandura, 2002). In the context of entrepreneurship, it is no different and, therefore, the success of the entrepreneurial journey depends on the individual’s will and desire to become an entrepreneur (Lang & Liu, 2019).

The main theories of entrepreneurial motivation are grouped into two main streams: impulse theories and incentive theories (Carsrud & Brännback, 2011). Impulse theories claim that an individual possesses the power to encourage the start of a new venture to ease the resulting tension of the process (Ardianti et al., 2017). Conversely, incentive theories suggest that external rewards motivate people to do things. Thus, it is understood that entrepreneurial action is intentional, resulting from motivation and cognition (Ardianti et al., 2017; Shirokova et al., 2016).

Although many people develop intentions to start their own business, acting on these intentions is sometimes postponed or abandoned due to changes in individual preferences or the emergence of a new contextual constraint (Neneh, 2019). A number of years ago, some authors believed that the reasons or objectives that led an individual to undertake were, to a large extent, mainly economic (Carsrud & Brännback, 2009). An uninformed understanding of entrepreneurial motivation may have led most entrepreneurs, scholars, and professionals to accept economic gain or profit maximization as the main motivation for entrepreneurs

(Mahto & McDowell, 2018). Individual (e.g., age, gender, family business history) and environmental (e.g., avoiding uncertainty and university environment) factors influenced the intention to undertake (Shirokova et al., 2016).

Despite the fact that entrepreneurship can be seen essentially as a risky activity, some researchers have suggested that a considerable number of factors promote entrepreneurial activities, such as economic crises and unemployment-related problems (Yin, 2022). In recent studies, Maslow’s hierarchy of needs (1954) has been leveraged to explain the motivations related to entrepreneurship by necessity (Dencker et al., 2021). This perspective rests on the assumption that individuals who struggle to satisfy their basic needs (e.g., food or safety) will engage in different entrepreneurial activities (Weber et al., 2022) as a way to ensure their need for security.

Recent studies have explored the relationship between motivation and necessity entrepreneurship, providing examples that convey the reality of regions, such as China and Kenya. In her study, Voigt (2018) explored why entrepreneurship has become an opportunity and security measure in Kenya. Xiong et al. (2021) interviewed more than 4,000 young entrepreneurs in China and highlighted that, regarding the primary motivation for entrepreneurship, survival-based motivation accounted for 25.2%, the pursuit of wealth for 17.9% and other motivations for 56.9%.

Finally, Yin (2022) suggested that entrepreneurial motivation is not only driven by material benefits but also includes gaining recognition and pursuing the value of entrepreneurship. He found that, as highly educated workers, university students are not individuals who have to start a business due to unemployment. Instead, between settling for unsatisfying jobs because of the COVID-19 pandemic and starting a business, they prefer the latter. We argue that the scenario in a Latin American country (e.g., Brazil) and some individual aspects of university students might explain the behavior of necessity entrepreneurs.

### Regulatory focus theory

The regulatory focus is a theory of motivation and self-regulation with considerable evidence in behavioral research, due to its potential to explain behavior and decision making (Silbiger et al., 2021). The literature indicates that the regulatory focus is an emotional cognitive phenomenon and that it explains the relationship between motivation, self-regulation, and the achievement of goals (Higgins, 1997). The concept of self-regulation is presented as the cognitive process that influences the way individuals plan and strive to achieve their goals (Higgins & Pinelli, 2020). Individuals can present two types of self-regulation, namely, self-regulation focused on promotion and self-regulation focused on prevention (Higgins & Pinelli, 2020).

Higgins and his colleagues pointed out that individuals differ in their sensitivity to gains and losses. Thus, individuals focused on promotion are highly sensitive to the presence or absence of positive results (e.g., gains and no gains). Alternatively, individuals focused on prevention are highly sensitive to the presence and absence of negative outcomes (e.g., losses and non-losses) (Higgins & Silberman, 1998; Higgins & Pinelli, 2020).

In the field of entrepreneurship, little has been studied concerning the focus of self-regulation (Higgins & Pinelli, 2020), but the regulatory focus can interact with the way an entrepreneur leaves or enters a business (Simmons et al., 2016). The regulatory focus is considered a personal characteristic, although it can be activated according to the situations and contexts that present themselves to the individual (Boldero & Higgins, 2011; Westjohn et al., 2016). Sengupta and Zhou (2007) claimed that the regulatory focus cannot be considered as an individual’s personality attribute. Contrary claims have also been supported (Kim et al., 2021; Pham & Avnet, 2004). Consequently, there are theoretical and empirical

indications of the regulatory focus as a condition that can either be a personality trait or situation-induced in a momentary state (Kim et al., 2021; Pham & Avnet, 2004). This study is consistent with the latter theoretical perspective - the situational one.

Some studies have postulated that predictors of entrepreneurial intentions vary across cultures and personality traits (Ezeh et al., 2020). It should be noted that, in addition to the lack of studies on entrepreneurship specifically using the regulatory focus theory, we did not find any research addressing the regulatory focus in university students' intention to undertake, much less when it comes to an emerging country in a context of economic downturn (Higgins & Pinelli, 2020). These gaps guided the conceptual model and hypotheses of this study.

## CONCEPTUAL MODEL AND HYPOTHESES

Individuals undertake for various reasons, one of them is need-motivated entrepreneurship. Therefore, when the beginning of the entrepreneur's journey is motivated by the need to obtain security, for example, it is conceptualized as necessity-based entrepreneurship (Dencker et al., 2021). To gain a thorough understanding of the aspects that motivate entrepreneurship by necessity, it is necessary to consider individual and contextual differences (Dencker et al., 2021), which leads us to believe that the economic crisis driven by the COVID-19 pandemic may be related to motivation to undertake. Thus, individuals with a need for greater security (e.g., financial) can be motivated to become entrepreneurs (given the issues of economic scarcity). Thus, we propose that:

**H1.** *The need to be an entrepreneur has a positive effect on entrepreneurial intention.*

Motivation by need can be classified as an extrinsic motivation (Carsrud & Brännback, 2011). In other words, incentive theories suggest that external rewards motivate people to perform feats (Ardianti et al., 2017). Thus, we understand that entrepreneurial action is intentional, resulting from the individual's motivation and cognition (Shirokova et al., 2016). A factor extrinsic to the individual, such as the need for security, can motivate him to perform certain feats, such as the intention to undertake, because of the possible rewards (Ardianti et al., 2017; Shirokova et al., 2016). Following this reasoning, we formulated the following hypothesis:

**H2a.** *Entrepreneurial motivation will mediate the relationship between the need for security and the intention to undertake.*

A link between motivation and the achievement of goals is the self-regulation of the individual, in a conditional and/or situational way. The literature indicates that the regulatory focus is an emotional cognitive phenomenon and that it explains the relationship between motivation, self-regulation, and the achievement of goals (Higgins, 1997). Thus, there are theoretical and empirical indications of the regulatory focus as a condition that can either be a personality trait (Higgins et al., 1994) or induced by the situation in a momentary state (Kim et al., 2021; Pham & Avnet, 2004) and, in this way, one focus could be placed on the other (Crowe & Higgins, 1997; Neubert et al., 2008).

Adverse situations, such as the need for security, tend to drive individuals to the preventive state (Crowe & Higgins, 1997; Kim et al., 2021), that is, to maintain the status quo to avoid losses. Situations involving a gain objective can push the individual to a state of promotion (Kim et al., 2021). It is reasonable to assume that the individual, even if in need of security, being motivated to seek gain through entrepreneurship, given the situation, tends to focus on promoting to accomplish the objective - the intention to undertake. Therefore, we propose the following hypotheses:

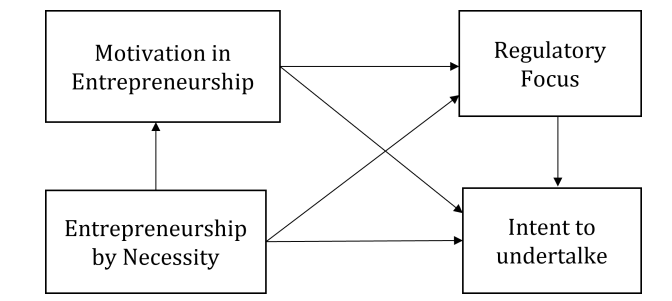
**H2b.** *The prevention focus will mediate the relationship between the need for security and the intention to undertake.*

**H2c.** *Entrepreneurial motivation and promotion focus will sequentially mediate the relationship between the need for security and the intention to undertake.*

Figure 1 presents the proposed conceptual model.

Figure 1

Conceptual model



Note: Elaborated by the authors.

## METHOD

To test the proposed hypotheses and achieve the research goal, we chose to conduct a cross-sectional survey (Malhotra, 2012) based on the responses of university students in the Administration course of two Brazilian Higher Education Institutions (HEIs), one private and one public. These HEIs were chosen for convenience, given the researchers' access to students to participate in the research.

### Collection procedures

We used an electronic questionnaire developed on QuestionPro and asked students from both HEIs to complete it during online classes. However, this was not a mandatory class proposal and students were given the option to accept or refuse to participate in the activity. For this reason, the sample was classified as non-probabilistic and by collusion (Hair Jr et al., 2014). The electronic questionnaire used for the data collection was developed from scales that had already been validated and used to measure the three constructs in question in this study (Table 1).

To measure the students' intention to undertake, we used the six-item scale by Nowiński and Haddoud (2019) ( $\alpha = .949$ ). Three items from the scale of Taormina and Kin-Mei Lao (2007) ( $\alpha = .719$ ) measured the students' motivation to undertake. We measured the need for safety using an item ("I am often focused on performing tasks that will support my need for security") adapted from Ma et al. (2017). A seven-point Likert scale ranging from (1) I strongly disagree to (7) I strongly agree was used to measure all the items. Finally, the students' regulatory focus was measured using Chammas' scale (2022), also used by Mesquita et al. (2022), consisting of 18 items arranged in pairs. Among the items on this scale, nine items aimed to measure the promotional regulatory focus and another nine items were used to estimate the preventive regulatory focus. The measurement was the sum of the options (0 for preventive statements and +1 for promotional statements).

### Data analysis procedure

Initially, we conducted a descriptive analysis of the sample, after which we performed an analysis of relationships, using IBM SPSS 22 software for all analyses. Given the objective of this study, we chose to analyze the means, using Student's t-test, and to analyze the mediations, we used model 6 of the PROCESS macro (Hayes & Hofmann, 2018).

**Table 1***Scales used for data collection*

Constructs and scales		Source
<i>Entrepreneurial Intention</i>		
[IE1]	I am willing to do anything to be an entrepreneur.	Nowiński and Haddoud (2019)
[IE2]	My professional goal is to become an entrepreneur.	
[IE3]	I will make every effort to start and run my own company.	
[IE4]	I am determined to start a company in the future.	
[IE5]	I think very seriously about starting a company.	
[IE6]	I firmly intend to start a company someday.	
<i>Entrepreneurial Motivation</i>		
[ME1]	I want to profit from my efforts.	Taormina and Kin-Mei Lao (2007)
[ME2]	I like having authority at work.	
[ME3]	I like to control my own time at work.	
<i>Regulatory Focus (Promotion)</i>		
[FRPRO1]	In general, I care more about the success I hope to achieve in the future	Adapted from Chammas (2022)
[FRPRO2]	I always think about what to do to achieve success.	
[FRPRO3]	I always wonder what to do to make my dreams come true.	
[FRPRO4]	My biggest priority right now is to achieve my goals in life.	
[FRPRO5]	I always think about the person I would ideally like to be in the future.	
[FRPRO6]	I always imagine myself experiencing good things that could happen in my life	
[FRPRO7]	I see myself as someone who is trying to achieve the "ideal self" – fulfilling my hopes, desires, and aspirations.	
[FRPRO8]	All things considered, I'm much more focused on achieving success than preventing failure	
[FRPRO9]	In general, I'm more concerned with achieving positive results in my life.	
<i>Regulatory Focus (Prevention)</i>		
[FRPRE1]	In general, I care more about preventing bad things from happening in my life.	Adapted from Chammas (2022)
[FRPRE2]	I feel anxious that I might not be able to fulfill my responsibilities and obligations	
[FRPRE3]	I always think about the person I wouldn't want to become in the future.	
[FRPRE4]	I often worry that I may not achieve my non-material goals in life.	
[FRPRE5]	I always imagine myself experiencing bad things that could happen in my life.	
[FRPRE6]	I always think about what to do to avoid failing.	
[FRPRE7]	In general, I'm more concerned with avoiding negative outcomes for my life	
[FRPRE8]	My top priority right now is to avoid failing.	
[FRPRE9]	I see myself as someone who is trying to become the "me that I should be" – fulfilling my tasks, responsibilities, and obligations.	

Note: Elaborated by the authors.

## RESULTS

The final sample consisted of 217 respondents. As it was not a mandatory activity, 723 students viewed the data collection instrument, but only 439 (60.7%) began to fill it out, and 217 (30%) completed it. The characteristics of the respondents are shown in [Table 2](#).

**Table 2***Description of the Sample*

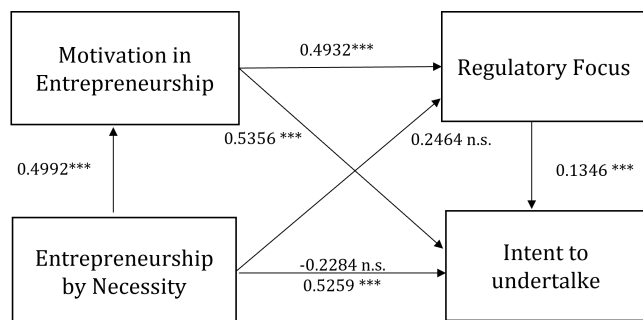
Variables		n	%
Gender	Men	129	59.40%
	Women	88	40.60%
Schooling	High School	168	77.40%
	College education	40	18.40%
	Post-graduation	4	1.80%
Family income*	Up to R\$ 1,100.00	17	7.80%
	Between R\$ 1,100.00 and R\$ 1,819.00	67	30.90%
	Between R\$ 1,820.00 and R\$ 7,278.00	111	51.20%
	Between R\$ 7,279.00 and R\$ 11,000.00	15	6.90%
	Over R\$ 11,000.00	4	1.80%
Age	Would rather not say	30	13.80%
	Between 18 and 25 years old	131	60.30%
	Between 26 and 30 years old	30	13.80%
	Over 31 years old	13	5.90%
Work with paid activity	Yes	137	63.10%
	No	76	35.0%

Note: 1 US\$ = R\$5.60. Elaborated by the authors.

The aim of Hypothesis 1<sup>st</sup> was to identify whether there is a positive relationship between the need for security and the entrepreneurial motivation of university students. As expected, the results identified the direct and positive effect of the need for security on entrepreneurial motivation ( $\beta=.4392$ ;  $SE=.0996$ ;  $CI95\% [.2429; .6355]$ ;  $p<.01$ ;  $R^2=.083$ ). However, there was no effect of the need for the security of individuals on the regulatory focus ( $\alpha=.2464$ ;  $SE=.3279$ ;  $CI95\% [-.3999; .8927]$ ;  $p>.10$ ) and individuals' intention to undertake ( $\beta=-.2284$ ;  $SE=.1927$ ;  $CI95\% [-.1515; .6083]$ ;  $p>.10$ ).

Regarding the direct effects of the model, the data identified a statistically significant effect on the relationship between entrepreneurial motivation and the regulatory focus ( $\beta=.4932$ ;  $SE=.2150$ ;  $CI95\% [.0693; .9171]$ ;  $p<.01$ ;  $R^2=.033$ ) of students. In addition, we found a direct and positive effect on the relationship between entrepreneurial motivation and the individuals' intention to undertake ( $\beta=.5356$ ;  $SE=.1278$ ;  $CI95\% [.2837; .7875]$ ;  $p<.01$ ;  $R^2=.165$ ). Furthermore, the regulatory focus showed a positive and direct relationship with the university students' intention to undertake ( $\beta=.1346$ ;  $SE=.0401$ ;  $CI95\% [.0555; .2137]$ ;  $p<.01$ ). However, the data revealed no statistically significant effect between the need for security and the students' intention to undertake.

Finally, there was a mediating effect of entrepreneurial motivation in the relationship between the need for security and the intention to undertake ( $\beta=.2952$ ;  $SE=.858$ ;  $CI95\% [.1103; .3833]$ ), confirming H2a. However, the data refuted H2b, as there was no statistically significant effect ( $\beta=.0332$ ;  $SE=.0473$ ;  $CI95\% [-.0589; .1358]$ ). The total direct effect was not statistically significant ( $\beta=.2284$ ;  $SE=.1927$ ;  $CI95\% [-.1515; .6083]$ ;  $p<.10$ ). However, this confirmed the main effect, supporting H2c. In this respect, entrepreneurial motivation and promotional focus sequentially mediate the relationship between the need for security and entrepreneurial intention ( $\beta=.5259$ ;  $SE=.1976$ ;  $CI95\% [.1365; .9153]$ ;  $p<.01$ ;  $R^2=.197$ ). The conceptual model and the results are shown in [Figure 2](#).

**Figure 2***Presents the proposed conceptual model*

Note: \*\*\*  $p < .01$  and n.s. = not significant. Elaborated by the authors.

## DISCUSSIONS

In this study, we investigated the effect of the need for security on the intention to undertake among university students, mediated by entrepreneurial motivation and regulatory focus. The results showed that the need for security has an impact on the individual's motivation to undertake. However, we noted that the individual's need for security does not directly affect the regulatory focus and intention to undertake.

To justify this first result, we argue that almost all the literature on entrepreneurship is centered on an approach in which incentives to start a business are, directly or indirectly, driven by the desire to increase the founder's wealth, also known as opportunity entrepreneurship. (Horta et al., 2016). When the beginning of the entrepreneur's journey is motivated by the need to meet their basic needs (such as security) rather than higher-level needs (such as recognition and self-fulfillment), we call it entrepreneurship by necessity (Dencker et al., 2021).

These results corroborate recent studies conducted in China (e.g., Voigt, 2018; Xiong et al., 2021), where meeting basic needs (e.g., need for security) is a factor that influences an individual's motivation to undertake. To gain a thorough understanding of the aspects that motivate entrepreneurship by necessity, it is necessary to consider individual and contextual differences (Dencker et al., 2021), which leads us to think that the economic crisis driven by the COVID-19 pandemic may be related to the intention to undertake. Moreover, this result reinforces the perspective of Yin (2022), showing that the entrepreneurship behavior found in his study is similar to the scenario found in Brazil.

In addition to being greater due to the lower entry barriers, entrepreneurship in developing countries is an option to make up for the lack of employment. In addition to the serious health consequences, the COVID-19 pandemic also created economic and social crises in Brazil, leading the labor market to a state of vulnerability (Prates & Barbosa, 2020) and, therefore, potentially leading many people to opt for entrepreneurship to survive this scenario. College students are increasingly looking to start their own businesses, given the pressure they are under due to a lack of jobs (Miao et al., 2021; Yin, 2022), and in response to the need for security during the crisis.

The data identified the direct and positive effect of motivation on individuals' regulatory focus. The possibility of manipulating the regulatory focus, also known as regulatory adjustment (Aaker & Lee, 2006; Cesario et al., 2004), is viewed as a way to change an individual regulatory profile, albeit temporarily, and this may help explain the findings of this research. Thus, we understand that the lack of a job, the imminent probability of losing a job, and, as a major aggravating factor, the possibility of losing a loved one and/or their own life, could place students in a condition of preventive

regulatory focus. However, the need for security motivates the student to undertake, given the circumstances and, consequently, this motivation positively affects the regulatory focus, even though the literature provides no evidence that a stimulus can last so long.

The literature establishes that individuals with a preventive focus seek to meet their security needs and avoid loss (Higgins, 1997). We argue that, in this case, the need for security is the extrinsic motivational factor, and being motivated to leave the status quo, the student tends to be conditioned to the promotion focus (Kim et al., 2021; Pham & Avnet, 2004). In this respect, we believe that the circumstances aggravated by the COVID-19 pandemic may have played a role, even if indirectly, in the students' regulatory system. From this same perspective, the results also showed that the regulatory focus has a positive effect on the students' intention to undertake.

Finally, our research showed that although there was no direct effect of the need for security on the students' intention to undertake, mediation was absolute. Our results pointed to two paths. The first is sequential mediation, going through all the elements that the research provides. In other words, the need for security, extrinsically to the individual, generates a motivation that conditions the student to focus on promotion, which might partially account for the intention to undertake. The other path is the need for security as a generator of the students' motivation, which generates a strong intention to undertake.

Thus, considering that students with a preventive regulatory focus have a self-regulation process focused on non-loss (Higgins, 1997), and this could be related to a block to leaving the status quo, our research suggests an explanation. In this respect, current conditions can generate an increase in entrepreneurship even if only out of necessity (Li & Alvarenga, 2021) to make up for the lack of security, such as financial security. This effect is already evident, with almost 15% of the population unemployed. According to the 2020 GEM (Global Entrepreneurship Monitor), entrepreneurship by necessity in Brazil jumped from 20.3% (2019) to 53.4% (2020) (Oliveira & Businari, 2021).

## Theoretical and practical implications

This study has theoretical and practical implications. It is known that individuals with a preventive focus tend to prefer to maintain the status quo (Higgins & Pinelli, 2020; Higgins & Silberman, 1998). Our findings are in keeping with this premise. University students with a preventive regulatory focus showed less intention to undertake, that is, they sought to avoid loss (Higgins & Pinelli, 2020; Higgins & Silberman, 1998). Meanwhile, university students with a regulatory promotional focus had a greater intention to become an entrepreneur, that is, they sought a positive result or gain (Higgins & Pinelli, 2020; Higgins & Silberman, 1998). However, there are no records in the literature of the need for safety as a trigger for the motivation to undertake and that this conditions the individual in the focus of promotion (Kim et al., 2021; Pham & Avnet, 2004).

It can be said that entrepreneurial education should address different types of communication to encourage future entrepreneurs, as the literature indicates that stimuli with positive and negative perspectives tend to affect the objectives of both groups (promotion and prevention) differently (Lopes & Veiga, 2019). In other words, communication through clarification on the gain is commonly applied in classrooms. However, our research indicates that professors of disciplines focused on entrepreneurial teaching must also address the communication of non-loss. In this way, both groups (promotion and prevention) can be stimulated. Furthermore, it has been stated that the different regulatory focuses (promotion/prevention) of the individual can be important in different tasks and moments of the entrepreneurial cycle (Simmons et al., 2016).

Our research demonstrates that providing a motivating environment can condition students to focus on promotion and this can affect their intention to undertake (Kim et al., 2021). It is also common that universities for students with lower purchasing power tend to focus on teaching aimed at improving skills and knowledge from the perspective of employees (Ezeh et al., 2020). Thus, students must be prepared not only for the job market as employees but as potential entrepreneurs. Considering this objective, HEIs can benefit from the results of this study by outlining strategic measures that strengthen their position to prepare individuals to meet market needs in different economic conditions. In addition, they can consider the different regulatory focuses as a way to review the way teaching has been directed, leading to a more effective way of communicating with students.

The findings of this study also make practical contributions that can help governments formulate targeted employment and entrepreneurship policies for university students. The policy for necessity entrepreneurship should emphasize active support for entrepreneurs, supporting their objective of meeting their security needs. Meanwhile, opportunity entrepreneurship policies should encourage and support innovative and even risky entrepreneurial projects. In addition to supporting student entrepreneurs, these policies must address their resources, whether in terms of information, technology, or programs, considering the regulatory focus of each audience. This could effectively solve the practical problems of college students regardless of their motivations. It is equally important that higher education institutions should strengthen their teaching programs by thinking about the behavior of university students in adverse economic situations, helping them to consider entrepreneurship in times of crisis and continue to support their families.

## CONCLUSIONS

This study analyzed the effect of the need for security on the intention to undertake among university students, mediated by entrepreneurial motivation and regulatory focus. Our findings demonstrate that the need for security has a positive effect on the motivation to undertake among university students. Although the need for security does not have a direct effect on the regulatory focus, we found that the regulatory focus explains part of the relationship between students' motivation and intention to start a new business. In addition, students with a promotional regulatory focus showed a greater intention to undertake than those with a regulatory focus on prevention, an effect that corroborates what is advocated by the theory.

This study has limitations that can be addressed in future research. Our research sample was limited to the responses of students from only two HEIs, and when analyzing the respondents' demographic data, it is possible to see that most students belong to a low-income social class. Other studies could collect responses from students from other regions of Brazil and, perhaps, other countries in Latin America, considering the influence of income and context on the intention to undertake. Therefore, regional aspects, student motivations and characteristics of HEIs (e.g., public versus private) are some of the opportunities to be explored in future research.

The theory of entrepreneurship by necessity appears to explain a large part of our findings regarding how a changing context can influence entrepreneurial dynamics. However, new perspectives may emerge regarding the in-depth study of motivation as a dynamic construct that can be influenced by the context and characteristics of individuals. Other theories that have been developed in other fields can contribute to studies of entrepreneurial behavior and the possible effects of the environment on this behavior.

## Conflit of interest statement

The authors declare that there is no conflict of interest.

## Authors' statement of individual contributions

Roles	Contributions		
	Mesquita E.	Townsend T.	Lopes E. L.
Conceptualization	■		■
Methodology	■		
Software	■		
Validation	■		
Formal analysis	■		
Investigation	■		
Resources	■	■	
Data Curation	■		
Writing - Original Draft	■	■	
Writing - Review & Editing	■	■	
Visualization		■	
Supervision	■		■
Project administration	■		
Funding acquisition	■	■	■

Note: Acc. CRediT (Contributor Roles Taxonomy): <https://credit.niso.org/>

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**AUTHORS BIOGRAPHIES**

**Eduardo Mesquita** has a PhD from the Postgraduate Program in Administration (PPGA-Consumption and digital transformation) at Universidade Nove de Julho (2020). Master in Administration (Marketing) from the Postgraduate Program in Administration (PPGA) at Universidade Nove de Julho (2019). Bachelor's degree in Administration (2017), postgraduate degree in People Management (2016) and degree in Marketing (2015) from Universidade Nove de Julho. He is currently a Professor at USP / ESALQ, Senac-SP and PUC-Campinas. He also serves as Brand Research Business Unit Leader at Ilumeo – Data Science Company. Areas of interest in research in Consumer Behavior with an emphasis on: Fake News, Review (false and genuine), Regulatory focus and brand transgression.

E-mail: [du.mesq@uni9.edu.br](mailto:du.mesq@uni9.edu.br)

**Tainá Townsend** has a PhD from the Postgraduate Program in Administration at Universidade Nove de Julho (2022). Master from the Professional Master's Program in Administration - Project Management at Universidade Nove de Julho (2018). Specialization in Project Management and bachelor's degree in Business Administration from Universidade Nove de Julho (2016). Degree in Human Resources Administration from Universidade Nove de Julho (2012). She has experience in the Administration area, working mainly on the following topics: individual skills, industry 4.0, project management, innovation projects and CRM (Customer Relationship Management). Areas of research interest: social comparison and influence, pro-social consumption, consumer decision making, and consumer-brand relationships.

E-mail: [taina.alves06@gmail.com](mailto:taina.alves06@gmail.com)

**Evandro Luiz Lopes** is a Full Professor in Marketing at the Federal University of São Paulo, Post-doctorate in Administration (Marketing) at the Center for Postgraduate Studies and Research in Administration (CEPEAD) at the Federal University of Minas Gerais (2016). He holds a PhD in Administration (Marketing) from the Postgraduate Program in Administration (PPGA) at Universidade Nove de Julho (2010) and a Master's in Administration (Marketing) from the same institution (2007). Between 2012 and 2019 he was Scientific Editor of the Revista Brasileira de Marketing (ReMark) / Brazilian Journal of Marketing (BJM). He is currently a Full Professor at ESPM-Escola Superior de Propaganda e Marketing working in the PPGA-Postgraduate Program in Administration and in the MPCC-Professional Master's Degree in Consumer Behavior, teaching the subjects of Quantitative Methods and Design and Analysis of Experiments. He also works as Adjunct Professor at EPPEN-Escola Paulista de Política, Economia e Negócios at the Federal University of São Paulo, teaching the subjects of Consumer Behavior and Marketing Research. He coordinates research projects funded by CNPq, for which he is also a Research Productivity Fellow (PQ2 / CNPq), in addition to acting as a reviewer for renowned academic journals. His research interests focus on the purchasing decision process and brand evaluation in the context of consumer behavior.

E-mail: [elldijo@uol.com.br](mailto:elldijo@uol.com.br)