SILVA DE SOUZA, GUSTAVO HENRIQUE; DA CRUZ FREIRE DOS SANTOS, PAULO;
LIMA, NILTON CESAR; TAVARES DA CRUZ, NICHOLAS JOSEPH; ROJAS LEZANA,
ÁLVARO GUILLERMO
Entrepreneurial potential and success in business: a study on elements of convergence
and explanation

Entrepreneurial potential and success in business: a study on elements of convergence and explanation

GUSTAVO HENRIQUE SILVA DE SOUZA

Master's Degree in Psychology from the Psychology Institute at the Universidade Federal de Alagoas (Ufal).
Professor and coordinator of Marketing and Business Programs for the Campus Teófilo Otoni
at the Instituto Federal do Norte de Minas Gerais (IFNMG).
Rua Mocambi, 295, Viriato, Teófilo Otoni – MG – Brasil – CEP 39800-430
E-mail: *gustavo.souza@ifnmg.edu.br*

PAULO DA CRUZ FREIRE DOS SANTOS

Doctor of Philosophy in Production Engineering from the Technological Center
at the Universidade Federal de Santa Catarina (UFSC).
Associate professor for the Faculty of Economics, Business Administration and Accounting
at the Universidade Federal de Alagoas (Ufal).
Avenida Lourival Melo Mota, s/n, Tabuleiro dos Martins, Maceió – AL – Brasil – CEP 57072-970
E-mail: *paulodacruzfreire@gmail.com*

NILTON CESAR LIMA

Doctor of Philosophy in Business Administration from the Faculty of Economics, Business Administration
and Accounting at the Universidade de São Paulo (USP).
Adjunt professor and College Director for the Faculty of Accounting at the Universidade Federal de Uberlândia (UFU).
Avenida João Neves de Ávila, 2.121, Santa Mônica, Uberlândia – MG – Brasil – CEP 38405-356
E-mail: *niltoncesar@facic.ufu.br*

NICHOLAS JOSEPH TAVARES DA CRUZ

Master's Degree in Administration and Rural Development from the Campus Recife
at the Universidade Federal Rural de Pernambuco (UFRPE).
Adjunt professor for the Faculty of Economics, Business Administration and Accounting at the Universidade Federal de Alagoas (Ufal).
Avenida Lourival Melo Mota, s/n, Tabuleiro dos Martins, Maceió – AL – Brasil – CEP 57072-970
E-mail: *admnicholas@gmail.com*

ÁLVARO GUILLERMO ROJAS LEZANA

Doctor in Philosophy Industrial Engineering from the School of Industrial Engineers at the Universidad Politécnica de Madrid (Spain).
Full professor for the Technological Center at the Universidade Federal de Santa Catarina (UFSC).
Campus Universitário Reitor João David F. Lima, Trindade, Florianópolis – SC – Brasil – CEP 88040-900
E-mail: *alvaro.lezana@ufsc.br*

ABSTRACT

Purpose: The study aimed to verify whether there is a difference of entrepreneurial potential between successful entrepreneurs and entrepreneurs who have failed; and whether there are variables that may work as a means of prediction to the success or failure of an entrepreneur.

Originality/gap/relevance/implications: It brings up an innovative approach to the entrepreneurship researches, which main content is in the empirical operationalization of success and failure on business for the testing of specific hypothesis and the identification of the antecedents and consequences of entrepreneurial potential.

Key methodological aspects: The research was conducted on a descriptive and quantitative approach. We applied the scale of entrepreneurial potential in 246 entrepreneurs, which 100 correspond to the analysis criteria, operationally, as successful entrepreneurs (n = 50) and entrepreneurs who failed (n = 50). Data were analysed by statistics techniques of logistic regression and Student's t test.

Summary of key results: Results show that the successful entrepreneur has higher scores in entrepreneur potential scale than the entrepreneur who failed, in which the main convergence between entrepreneurial potential and business success is the setting business goals. In the investigated sample, the gender showed being a strong predictor of business success, indicating that men have 2.8 times greater chance of success in business than women.

Key considerations/conclusions: In our opinion, the results found shed light on crucial elements to the explanation of business success and corroborate recent results brought by research on entrepreneurship and gender.

KEYWORDS

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Entrepreneurship. Entrepreneurial potential. Success. Failure. Gender.

• GUSTAVO HENRIQUE SILVA DE SOUZA • PAULO DA CRUZ FREIRE DOS SANTOS • NILTON CESAR LIMA •
• NICHOLAS JOSEPH TAVARES DA CRUZ • ÁLVARO GUILLERMO ROJAS LEZANA •

1 INTRODUCTION

Recent studies worldwide have treated the entrepreneurial profile under an individual perspective, as a series of behavioural, social and contextual traits from idiosyncratic character intrinsic to the individual which make it an entrepreneur (Van Gelderen, Brand, van Praag, Bodewes, Poutsma, & van Gils, 2008; Schmidt & Bohnenberger, 2009; Obschonka, Silbereisen, & Schmitt-Rodermund, 2010; Barba-Sánchez & Atienza-Sahuquillo, 2012; Cardon, Gregoire, Stevens, & Patel, 2013; Moraes, Hashimoto, & Albertine, 2013; Roxas & Chadee, 2013; Souza, Lopez, Bornia, & Alves, 2013; Tajeddini, Elg, & Trueman, 2013). Schmidt and Bohnenberger (2009), for example, stereotype the entrepreneur as someone who is self-efficient, detects opportunities, plans, takes calculated risks, is sociable, innovative, persistent and naturally a leader.

However, according to Grapeggia, Lezana, Ortigara and Santos (2011), many of these approaches neglect the success and failure factors on business which influence the entrepreneurial behaviour or, conversely, the entrepreneurial characteristics that influence success or failure in business. Studies report (e.g., Minello & Scherer, 2012; Minello, Scherer, & Alves, 2012) the successful entrepreneur tends to endorse values related to personal satisfaction, achievement, triumph and power, i.e., strictly personal objectives. On the other hand, entrepreneurs who failed or former entrepreneurs tend to endorse values related to social interaction, social support, safety and survival.

That behavioural variability, according to Miner (1997a; 1997b), can perform an important role in some types of people, since that, for the author, the individual must have the right personality to become a successful entrepreneur. In this regard, Santos (2008) indicates that the mapping of characteristics and personality traits includes elements that can indicate potential entrepreneur, namely: Entrepreneurial Intention, Control, Efficiency, Information, Goals, Opportunity, Persistence, Persuasion, Planning and Network. These factors seek to identify the behavioural and psychosocial standard level for the individual to become effectively a successful entrepreneur (see Inácio & Gimenez, 2004; Grapeggia et al., 2011; Hsu, Wiklund, & Cotton, 2016).

Whereas the entrepreneurial potential is commonly referred to the successful businessman profile, we ask: Can be the potential entrepreneur a predictor of success in business? Following this line of reasoning, the aim of this study was to identify possible convergence and explanation elements from the entrepreneurial potential in relation to the success in business, taking as theoretical support the Santos' (2008) model. For that, we sought to verify whether there is a difference of entrepreneurial potential between successful entrepreneurs and entrepreneurs who have failed; and whether there are variables that may predict the success or failure in business.

2 THEORETICAL BACKGROUND

2.1 ENTREPRENEURIAL POTENTIAL

The entrepreneurial potential, essentially, links a series of psychological, behavioural and social characteristics commonly found in successful entrepreneurs, considered convergent in explanation of a representative construct for a possible behaviour: to become entrepreneur (Krueger & Brazeal, 1994; Krueger, Reilly, & Carsrud, 2000).

Following this prerogative, Santos (2008) proposed that the potential entrepreneur is a construct subsidized by three dimensions of attributes from the successful entrepreneur – Achievement, Planning and Power – and a complementary dimension related to desirable – Entrepreneurial Intention. While the attributive dimensions refer to the entrepreneurial characteristics (McClelland, 1961), the Entrepreneurial Intention is a criterion of inhibition or activation to the entrepreneurship in favourable conditions, for example, easy access to capital and, therefore, it is considered complementary to the entrepreneurial potential.

Within each dimension there are factors that are established as entrepreneurial attributes. In the dimension of **Achievement**, there are the following attributes: Opportunities Recognition, Persistence and Efficiency. In the dimension of **Planning**, there are the following attributes: Goal Setting, Information Search, Continuous Planning, and Permanent Control. In the dimension of **Power**, there are the following attributes: Capacity to Persuade and Capacity to Build Network of Relationships. Moreover, in the dimension of **Entrepreneurial Intention**, there is the desire to start a business (Santos, 2008). According to that Santos' (2008) model, the entrepreneurial potential must demonstrate specific characteristics in each of the attributes (Chart 1):

CHART 1

ENTREPRENEURIAL POTENTIAL CHARACTERISTICS FOR EACH ATTRIBUTE

ATTRIBUTE	CHARACTERISTICS
Opportunity	Individual must show that he/she has sense of opportunity, i.e., is aware of what happens around him/her and then, when to identify the needs of people or market, be able to take advantage of unusual situations to start new activities or business.

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CHART 1 (CONCLUSION)

ENTREPRENEURIAL POTENTIAL CHARACTERISTICS
FOR EACH ATTRIBUTE

ATTRIBUTE	CHARACTERISTICS
Persistence	Individual's capacity to remain steadfast in the pursuit of success, demonstrating persistence to achieve its objectives and goals, overcoming obstacles along the way. Capacity to distinguish persistence from stubbornness, admit mistakes and know how to redefine goals and strategies.
Efficiency	Individual's capacity to do things on the right way and, if necessary, quickly make changes to adapt itself to changes occurred in the environment. Capacity to find and achieve to operationalize ways of doing things better, faster and cheaper. Capacity to develop or use procedures to ensure that the work is completed on time.
Goals	Individual's capacity to show determination, sense of direction and set objectives and goals, defining clearly where he/she plans to arrive. Capacity to set directions and measurable objectives.
Information	Individual's availability to learn and demonstrate the thirst for knowledge. Interest in finding new information in his area or beyond. Attention with all the internal and external factors related to his organization/company/business. Interest in how manufacture products or provide services. Availability to seek expert help on technical or commercial matters.
Planning	Individual's availability to plan his activities by setting objectives. Capacity to detail the tasks and being able to work with planning, execution, and control.
Control	Individual's capacity to monitor the implementation of the elaborated plans, keep records and use them in the decision making process, check the reach of the results obtained.
Persuasion	Individual's ability to influence people for the execution of tasks or actions that enable the achievement of his/her goal. Capacity to convince and motivate people, lead teams and encourage them using the words and actions appropriated to influence and persuade.
Network	Individual's capacity to establish a good network of relationships with acquaintances, friends and people who may be helpful to him/her, making possible the achievement of his/her objectives.
Entrepreneurial Intention	Foreshadows the individual's intention to have, either by acquiring or from scratch, his/her own business.

Source: Adapted from Santos (2008, pp. 197-198).

We understood that the entrepreneurial potential is a construct that encompasses individual, psychosocial and behavioural aspects making up an entrepreneur (Inácio & Gimenez, 2004; Gonçalves, Veit, & Gonçalves, 2007; Santos, 2008; Alves & Bornia, 2011). Obviously, it is possible for an individual to possess entrepreneurial attributes and do not start a business. This occurs due to the orientation that separates inventors and innovators from those who become entrepreneurs: the firsts are oriented by the "materialization of the idea", while the latter are oriented by the "commercialization/marketing". So, characteristics commonly found in successful entrepreneurs are attributed to the potential entrepreneurs (Santos, 2008; Grapeggia *et al.*, 2011).

2.2 SUCCESS IN BUSINESS

There are many factors related to entrepreneurial success, and some have been empirically tested and others just deducted from the literature. In this respect, researches (e.g., Giovannini & Kruglianskas, 2008; Santos, 2008; Grapeggia *et al.*, 2011; Vasconcelos, Lezana, & Andrade, 2013) have been consensual to establish factors for entrepreneurial success that, in general, are configured in 3 levels: Individual/Entrepreneur (personality and behavioural patterns), Organizational/Internal Factors (capacities, management skills and operational practices) and Marketing/External Factors (field of activity, partners, legal constitution, etc.).

Zhang, Ren, Shen and Xiao (2013) and Frota, Brasil and Fontenele (2014) support the idea that the main yardstick of success in business would be the management capacity. For these authors, strategic decisions, administrative and operational efficiency, performance and organizational culture are indicative elements of entrepreneurial success. Reske, Jacques and Marian (2005) and Manhani and Ferreira (2008) already held this line of thought, highlighting the importance of planning, setting goals and internal control as tools for success in business.

Evangelista (2010) explains that practices of sustainable management and good communication combined with corporate actions increase the chances of success of business but, as Frese and Rauch (2002) – who define entrepreneurial success as the establishment of goals and strategies – the author assumes that the psychological attributes of the entrepreneur demonstrate high influence precisely in management practices.

Indeed, individual factors are those that have attracted the attention of researchers. Greatti (2005) found similarities among successful entrepreneurs regarding the trajectory of life and behavioural aspects. In addition, Akhtar, Ismail, Hussain and Umair-ur-Rehman (2015) report a fundamental relationship between family entrepreneurial culture and success in business, especially regarding posture and everyday behaviour.

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Resmi and Kamalanabhan (2010), investigating the antecedents of entrepreneurial success, understood the impression management – process in which the entrepreneur tries to influence the perceptions of others about a person, event or object in order to control information in social interaction – as a precursor of success factors, attached to variables such as personality, skills and entrepreneurial orientation.

Hsu *et al.* (2016) emphasized specifically the self-efficacy of the entrepreneur, i.e., skills and inherent capabilities, as the major factor of success in business. These authors follow a line that supports the entrepreneur as the central engine of business and largely responsible for the growth of the economy, which dates from the emergence of entrepreneurship theories (see Cantillon, 1755; Say, 2003, originally published in 1834; Weber, 1957).

Nevertheless, according to Santos (2008) and Vasconcelos *et al.* (2013), not only characteristics and attributes of the entrepreneur indicate success, but a stay on the market (see also Maslow, 2001). Data from Serviço Brasileiro de Apoio às Micro e Pequenas Empresas – Sebrae (2008) corroborate this assumption, indicating that 50% of new businesses close before completing two years of existence, 57% do not pass the third year and 60% do not pass the fourth and 75% do not pass the fifth year.

Furthermore, Drucker (1993) supports the proposal that the company is a "Cost Centre". For him, businesses exist only to produce results and profits for the market or the economy, i.e., outside the company. In fact, within the company, there are only costs that the entrepreneur perceives as restrictions and challenges. In that sense, a successful entrepreneur is the one who stands in front of a reality and can convert it into opportunity, getting results and profits.

Getting success is not in the basic ethos of the entrepreneur, limited to one type of behaviour. Success is linked to the development of managerial and strategic actions for a result (Miner, 1997a; 1997b). If, on the one hand, the successful entrepreneur is characterized by personality traits and specific attitudes towards business, including the persistence even on the verge of failure; on the other hand, the maintenance of business in the market is, in economic and financial terms, an indication of success (Santos, Minuzzi, Lezana, & Grzybovski, 2009; Grapeggia *et al.*, 2011; Tajeddini *et al.*, 2013).

3 METHODS

3.1 TYPE OF RESEARCH

In methodological terms, the study is descriptive at research conduction and quantitative in the analysis mode, which aim is to identify possible elements of

convergence and explanation of entrepreneurial potential regarding to the success in business (entrepreneurial success). The descriptive study, according to Malhotra (2011), is delineated by establishing relationships between variables of a population and determines its relationship with the phenomena that surround it, being described to provide a specific view of the problem.

3.2 TOOLS

We used two research tools in order to conduct this study: the entrepreneurial potential scale (Santos, 2008) and a socio-demographic questionnaire.

The entrepreneurial potential scale (Santos, 2008) is a self-report psychometric test, which presents factorial validity and internal consistency – with dimensionality, criterion validity and confirmatory factorial validity measured by Souza, Santos, Lima, Cruz and Lezana (2015). The tool is an 11-points Likert scale continuous ranging from 0 = Strongly Disagree (no chance) to 10 = Strongly Agree (sure absolute)], with 49 items based on *primings* (explanatory vignettes) established among the following latent factors: Entrepreneurial Intention, Control, Efficiency, Information, Goals, Opportunity, Persistence, Persuasion, Planning and Network. Once the test aims to map characteristics that may indicate entrepreneurial potential, the participants were asked to respond items, such as "*Certainly, one day I will have my own business*", "*I am able to identify business opportunities and exit cashing with this*" and "*I know I am able to lead a team and achieve goals*". For the full and unrestricted access to entrepreneurial potential scale, as well as the norms and technical specifications, see Santos (2008, p. 189).

In turn, the socio-demographic questionnaire aimed to understand and characterize the sample, in order to allow the comparison of possible contrasting groups among the participants. This additional questionnaire included the following elements: Gender, Age Group, Education, Region of Actuation, Field of Activity and Age of the Company.

3.3 SAMPLE

We applied the entrepreneurial potential Scale in 246 entrepreneurs, all from the State of Alagoas, North-Eastern Brazil, among which 100 entrepreneurs corresponded to the criteria for participation in the analysis, operationally, as successful entrepreneurs (n = 50) and entrepreneurs who have failed (n = 50).

Whereas only about 25% of new businesses pass of 5 years of operation (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas, 2008), the permanence of a business in the market proves to be one of the indications to empirically establish business success, having the threshold of 5 years a coherent indicative (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas, 2013). In this way,

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the sample definition was operationalized from two criteria: an entrepreneur who closed the company (broke, went bankrupt or did not work) within 5 years, is regarded the entrepreneur who has failed; an entrepreneur who maintains the same active company for over 5 years, is considered the successful entrepreneur. From the 246 participant entrepreneurs, former business (n = 21), entrepreneurs who have broken or closed after 5 years and opened a new company (n = 19), new entrepreneurs with less than 5 years on the market (n = 94) and questionnaires with missing data (n = 12) were eliminated.

From the 100 participants of the analysis performed, 61% were male. The vast majority (69%) declared aged between 26 and 45 years and in this age group 61% were males. Only 8% of respondents have not finished high school and 10% have achieved post-graduation. In Table 1, we can see the sample characteristics together with the socio-demographic data about entrepreneurs and their companies.

SAMPLE CHARACTERIZATION

CHARACTERISTICS	N	%
AGE GROUP		
Until 25 years	5	5
From 25 to 35 years	33	33
From 35 to 45 years	26	26
From 45 to 55 years	21	21
More than 55 years	15	15
EDUCATION		
Middle School - incomplete	1	1
Middle School - complete	5	5
High School - incomplete	2	2
High School - complete	39	39
Undergraduate - incomplete	11	11
Undergraduate - complete	32	32
Specialization (MBA)	8	8

(continue)

TABLE 1 (CONCLUSION)

SAMPLE CHARACTERIZATION

CHARACTERISTICS	N	%
EDUCATION		
Master's	1	1
Doctorate (PhD.)	1	1
REGION OF PERFORMANCE		
Capital City	75	75
Countryside	25	25
FIELD OF ACTIVITY		
Industry	10	10
Commerce	57	57
Services	33	33
AGE OF THE COMPANY		
Failure in less than 5 years	50	50
From 5 to 10 years	30	30
From 10 to 15 years	8	8
From 15 to 20 years	5	5
From 20 to 25 years	3	3
From 25 to 30 years	2	2
More than 30 years	2	2

Note: N = 100.

Source: Elaborated by the authors.

3.4 DATA COLLECTION

The tool application was given in a non-probabilistic sample, by accessibility and individually in 100 entrepreneurs. At first, participants were informed about the anonymity and confidentiality of their answers. The voluntary participation

was guaranteed, as well as the respect for ethical guidelines which govern the researches with human beings. The participants were surveyed in person at their workplace and/or via e-mail.

After that, we seek to check the reliability of data collected. For this, we used the Cronbach's alpha test to verify the internal consistency of the entrepreneurial potential scale. Cronbach's alpha verifies the congruence that each item has with the rest of items from a same test (Pasquali, 2010). It is a measure that ranges from 0 to 1, where the value 0.700 is considered the lower acceptability limit (Hair, Black, Babin, Anderson, & Tatham, 2010). In Table 2, we can view alpha values for the factors of the Entrepreneurial Potential Scale which denote excellent indexes and indicate that participants were very consistent and trusted in their responses.

TABLE 2

ALPHA VALUES FOR THE FACTORS OF THE ENTREPRENEURIAL POTENTIAL SCALE

FACTORS	ITEMS	CRONBACH'S ALPHA
Entrepreneurial intention	4	0.885
Opportunity	5	0.833
Persistence	6	0.893
Efficiency	3	0.871
Information	5	0.907
Planning	4	0.847
Goals	7	0.903
Control	5	0.907
Persuasion	6	0.864
Network	4	0.886
Full scale without entrepreneurial intention	45	0.974
Full scale with entrepreneurial intention	49	0.972

Source: Elaborated by the authors.

3.5 PROCEDURES AND ANALYSIS

The data was processed on IBM/SPSS® 21 software and used for the analysis that follows. The first analysis was the application of Student's t test for independent samples, comparing average scores of successful entrepreneurs and entrepreneurs who have failed for each of factors (sums of items) proposed in the entrepreneurial potential scale, starting from the assumption that successful entrepreneurs have a greater entrepreneurial potential – statistically significant at a probability level associated with $p < 0.05$ (bilateral). The Student's t test is a parametric test and for its use it is necessary to comply with the assumptions that the data have normal distribution in both sets and there is homogeneity in their variances (Barbetta, 2006). The Levene test only detected homogeneity in variances in two items. Therefore, for these items, the data was used in the second option, i.e., without homogeneity of variances for t test in terms of its significance ($p < 0.05$).

Then, we proceeded to the Effect Size (Cohen's d) of t test, following the Cohen's (1992) recommendations, wherein $d = 0.20$ indicates a small effect, $d = 0.50$ indicates a medium effect and $d = 0.80$ indicates a large effect. According to Dancey and Reidy (2006), when evaluating behavioural and psychological constructs between different groups – due to the interference of subjective and contextual elements – small and medium effects are more readily available, as it is the case of constructs disclosed herein. In this case, medium values show a satisfactory t test, while small values (above 0.3) denote a t test only acceptable.

For the second analysis, we sought to verify the influence of variables in the success or failure of entrepreneurs using the logistic regression. Logistic regression is a technique for checking levels of prediction in the using of a categorical variable as dependent (Nunnally & Berstein, 1994). Therefore, the dependent variable can take only two values, i.e., it must be reserved out of a dichotomous or binary type (Hosmer & Lemeshow, 2000), although continuous variables can be converted into reserve (dichotomous or binary) for the use of logistic regression (Tabachnick & Fidell, 2007).

In the specific case of the entrepreneurs surveyed in this study, we have two exclusive categories composing the variable condition: success and failure. This variable, hence, proved to be adequate to the use of logistic regression, due to unsuitability of this for the use of linear regression. This makes it possible to test which degree the variables, among the surveyed ones, may have influenced the success or failure of the entrepreneur – objects of this research.

We tested as predictors the independent variables (co-variables): Gender (X_1), Age (X_2), Score obtained on entrepreneurial potential scale (X_3), Entrepreneurial Intention (X_4), Field of Activity (X_5), Region of Actuation (X_6) e Education (X_7). Since the Wald test results showed that the variables X_4, X_5, X_6 e X_7 aggrieve

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the model, making it not statistically significant ($p \leq 0.05$), we carried out the deletion of this variable and the data was once again processed.

We used the following indexes of the overall model fit to evaluate the logistic model:

- Wald test provides statistical significance for the estimated coefficients in the model, that is, acceptable values are $p \leq 0.05$.
- The Likelihood Value tests the null hypothesis that the model fits well to data. A high result in the difference between the likelihood values, using only the constant model and with the inclusion of all co-variables, indicates that the coefficients have greatest potential to estimate the presence of certain characteristics (Dias & Corrar, 2007).

McFadden's ρ^2 or R^2 logit is a pseudo R^2 used in linear regression analysis. It expresses the ratio between the log likelihood of the final model (LLf) and the model with only the constant (LLc) given by the formula: $1 - (LLf/LLc)$. High values for ρ^2, about 1.0, is unusual to obtain, and often results ranging between 0.3 and 0.5 have been considered excellent (Lattin, Carroll, & Green, 2003). According to Hensher and Johnson (1981), values between 0.20 and 0.40 should be accepted as satisfactory.

- Cox-Snell's R^2 and Nagelkerke's R^2 are also pseudo R^2 and evaluate the model fit, indicating, respectively, the variations in the log odds ratio and variations in dependent variable. Higher values indicate a better fit, however, it cannot achieve the maximum value of 1. These two pseudo R^2 are not easy to interpret and may show lower results, even when the model obtained proves suitable (Hair *et al.*, 2010).
- Hosmer-Lemeshow test is the final adjustment value and measures the correlation between actual values and predicted values of dependent variable. The test is used for evaluating the predictive power of the model, which method is focused on the dependent variable, not in the likelihood value. The test groups the data by comparing them with the calculated value, which makes the test sensitive to the sample size, requiring a minimum sample size of 50 cases (Hosmer & Lemeshow, 2000). A better fit implies a smaller difference between the observed and the expected. A non-significant value indicates a good fit (Hair *et al.*, 2010).

Finally, in order to check the logistic regression quality, we used the ROC curve which determines the best relationship between sensitivity and specificity (Sousa, Duarte, & Pereira, 2006). In binary logistic regression, sensitivity is the percentage of correct predictions of the value 1 or 'success', while specificity

refers to percentage of correct predictions in the opposite category, i.e., the value 0 or 'failure' (Garson, 2012). The ROC curve allows representing the interrelations of sensitivity with specificity in a dimensional plane, which the values in the ordered (sensitivity) show the proportion of true positives and the abscissa (1-specificity) false positives (Van Erkel & Pattynama, 1998). Hosmer and Lemeshow (2000) suggest that an area under the ROC curve with values between ≥ 0.7 and < 0.8 is acceptable to display the discriminating power of the logistic regression. Values equal to or greater than 0.8 can be considered excellent.

4 RESULTS AND DISCUSSION

4.1 SUCCESSFUL ENTREPRENEURS *VERSUS* ENTREPRENEURS WHO HAVE FAILED

By applying Student's t test in the surveyed sample (n = 100), we seek to verify whether there was difference of entrepreneurial potential between the successful entrepreneur with more than 5 years on the market (n = 50) and entrepreneurs who have failed with less than 5 years on the market (n = 50). Thus, we checked that, for each of the established factors, the mean scores of the successful entrepreneurs were higher than the mean scores of entrepreneurs who have failed, with the existence of significant differences ($p \leq 0.05$), except in Entrepreneurial Intention ($p = 0.398$) and Network ($p = 0.099$) factors. Table 3 presents the means and standard deviations (SD), the *t* test values, the degrees of freedom (df), the *p* value of significance, the mean difference associated with a 95% confidence interval and the *d* values for the effect size of the t test.

TABLE 3

STUDENT'S T TEST – SUCCESSFUL ENTREPRENEURS VERSUS ENTREPRENEURS WHO FAILED

FACTORS	SUCCESSFUL ENTREPRENEURS		ENTREPRENEURS WHO FAILED		STATISTICS				
	MEAN	SD	MEAN	SD	*t*	df	*p*	DIFFERENCE OF MEAN (95% CI)	*d*
Opportunity	8.06	1.028	6.93	2.144	3.361	70.415	0.001	1.130 (0.46 – 1.80)	0.67
Persistency	8.91	0.828	8.19	1.706	2.999	68.345	0.004	0.710 (0.26 – 1.33)	0.54

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TABLE 3 (CONCLUSION)

STUDENT'S T TEST – SUCCESSFUL ENTREPRENEURS VERSUS ENTREPRENEURS WHO FAILED

FACTORS	SUCCESSFUL ENTREPRENEURS		ENTREPRENEURS WHO FAILED		STATISTICS				
	MEAN	SD	MEAN	SD	t	df	p	DIFFERENCE OF MEAN (95% CI)	d
Efficiency	9.09	0.863	8.31	1.689	2.840	75.246	0.006	0.715 (0.21 – 1.21)	0.58
Information	8.96	0.791	8.40	1.842	2.083	67.147	0.041	0.571 (0.02 – 1.11)	0.39
Planning	8.24	1.206	7.31	1.991	2.817	80.686	0.006	0.927 (0.27 – 1.58)	0.56
Goals	8.53	0.882	7.36	1.890	3.961	69.377	0.000	1.169 (0.58 – 1.75)	0.79
Control	8.31	1.161	7.51	2.141	2.322	75.518	0.023	0.800 (0.11 – 1.48)	0.46
Persuasion	8.36	0.926	7.76	1.545	2.343	80.160	0.022	0.597 (0.09 – 1.10)	0.46
Network	8.61	1.090	8.16	1.615	1.671	82.115	0.099	0.460 (-0.08 – 1.00)	0.32
Entrepreneurial intention	8.87	1.573	8.57	1.916	0.848	94.425	0.398	0.297 (-0.39 – 0.99)	0.17
Full scale	8.55	0.596	7.74	1.541	3.436	63.534	0.001	0.795 (0.33 – 1.25)	0.69
Full scale + Entrepr. intent.	8.57	0.571	7.81	1.482	3.402	63.348	0.001	0.760 (0.31 – 1.20)	0.68

Source: Elaborated by the authors.

As it can be seen in Table 3, in all factors, the successful entrepreneurs scored higher than the entrepreneurs who have failed. Nevertheless, we noteworthy that the effect size (d) proved to be small only for the factors of Entrepreneurial Intention and Network – difference between groups was non-significant at a p-value ≤ 0.05. On the other hand, the effect size (d) showed medium for the factors: Control, Efficiency, Information, Opportunity, Persistence, Persuasion and Planning. Moreover, a large effect was observed only for the factor 'Goals'.

The large effect for the factor 'Goals' indicates that this may be regarded as the critical and idiosyncratic factor that identifies the successful entrepreneur from those who have failed. According to Frese and Rauch (2002), the definition of goals and strategies is the psychological attribute of greater influence in getting the entrepreneurial success and business results. In addition, Manhani and Ferreira (2008) highlight the technical relevance of planning and setting goals for success in business, given the constant need to anticipate to market events and take advantage of inherent opportunities, idea supported by Santos (2008), who establishes the 'Goals' as the capacity to show determination, sense of direction and establishment of measurable objectives, to achieve a certain result: the success.

Medium effects show that the difference between successful entrepreneurs and entrepreneurs who have failed was relevant, indicating that the successful entrepreneur has greater entrepreneurial potential, whereas small effects denote only the existence of differences, even a weak difference and without statistical significance (> 0.05).

Although we can infer that the t test showed that the entrepreneurial potential scale reliably differentiates the successful entrepreneur from the entrepreneur who have failed, we can discuss and explain the non-significance and low values for the effect size of the factors Entrepreneurial Intention ($d = 0.17$) and Network ($d = 0.32$). Regarding these two factors, Santos (2008) found results showing that to have a good relationships network or desire to have own business are not particular to entrepreneurs.

A possible explanation for the non-difference between the groups in the factor 'Network' can be related to items from this factor which show up a dimension somewhat subjective, since the endorsement of these items can be assigned to any individual not entrepreneur, for example: "*I try to keep constant contact with people in my network of relationships*" or "*I'm keeping easy contact with people of my network of relationships*".

Another explanation for that may be related to social desirability. Gouveia, Guerra, Sousa, Santos and Costa (2009) explain that commonly in self-reported tools there are issues which are influenced by social norms and desirable standards, concealing the real response of the individual. Therefore, the Entrepreneurial Intention and the Network – both found in entrepreneurs and in not entrepreneurs – can be explained by social desirability. For example, the individual can be led to believe that starting a business or becoming an entrepreneur would make a person rich, recognized and inserted among social ambience, in an urge to think that be an entrepreneur is a good thing, when in fact such person does not intend to start a business.

Specifically, on the Entrepreneurial Intention, authors of other tolls linked to entrepreneurial behaviour have treated the Intent as a complementary element

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(Kristiansen & Indarti, 2004) or with low influence (Inácio & Gimenez, 2004; Lopes & Souza, 2005; Gonçalves *et al.*, 2007) towards the entrepreneurial profile. Results have indicated that the Entrepreneurial Intention is a multifaceted issue. As an example, Santos, Dantas and Milito (2010) reported relations between the desire to have a business and factors, such as entrepreneurial familiar culture and local economic dynamics, which would make the entrepreneurial intention a cultural vector in entrepreneurial behaviour and not a guide construct to the entrepreneurial potential.

4.2 PREDICTORS FROM SUCCESS OF FAILURE OF THE ENTREPRENEUR

Since we separate the sample into successful entrepreneurs and entrepreneurs who have failed, and that the criterion indexes (*t* test and Cohen's *d*) (1992) showed that this split is significant, then we used the logistic regression to check whether there are variables that may be considered predictors from success or failure of the entrepreneur.

In this sense, we tested the model proposed, yielding the following parameters of the overall model fit (Table 4):

TABLE 4

OVERALL MODEL FIT

| DISCRIMINATION	RESULTS	
Log Likelihood (-2LL)	-2 log	104.971
	df	91
	p	> 0.05
Hosmer-Lemeshow Test	χ^2	10.520
	df	8
	p	0.230
McFadden's ρ^2		0.202
Cox-Snell's R^2		0.244
Nagelkerke's R^2		0.326

Source: Elaborated by the authors.

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The values of the overall model fit show satisfactory at an acceptable level. The Hosmer-Lemeshow test (2000) evaluates the accuracy or predictive power, which no significant value indicates adequacy of the sample to the predictive model, considering the actual prediction of the dependent variable. The likelihood values confirm the model suitability for a good fit of the data, i.e., non-significant values. As statistics associated with the likelihood value, the McFadden's ρ^2 shows a satisfactory value. In turn, the Cox-Snell's R^2 indicates that 24.4% of the variations in the log odds ratio are due to variations that have happened in co-variables. In addition, Nagelkerke's R^2 indicates that the model explains 32.6% of the variations taken place in dependent variable.

Moreover, aiming to verify the quality of the logistic regression – predictive capacity – we used the ROC curve. The ROC curve shows a value of 0.780, which denotes a good discriminant power (Graph 1).

GRAPH 1

ROC CURVE (*RECEIVER OPERATING CHARACTERISTIC*)
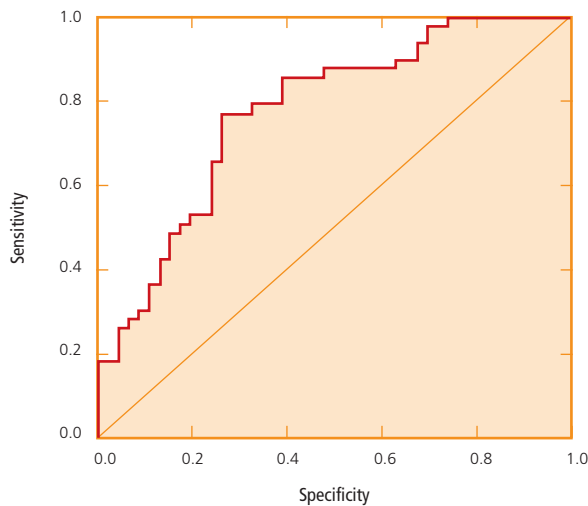
Note: The area under the ROC curve is 0.780.

Source: Elaborated by the authors.

In the model, the overall percentage of hit in the ratings was 73.7%. In case of failure, the model correctly predicted 73.9% (specificity) and, in case of success, the model correctly predicted 73.5% (sensitivity).

After checking the overall model fit, the variables (gender, age and total score in entrepreneurial potential scale) were established in equation (Table 5),

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allowing the estimated coefficients establish the logit model. As shown the Wald statistic, all coefficients were significant. In turn, the Atinkson's R_A, which measures the partial correlation between the co-variables and the dependent variable, showed positive values, meaning that when the co-variable value increases, then the likelihood of success of the independent variable also increases.

VARIABLES IN THE ESTIMATED EQUATION MODEL

DISCRIMINATION	$B^{(1)}$	$S.E.^{(2)}$	WALD	df	SIG.	$R_A^{(3)}$	$EXP(B)^{(4)}$	95% CONFIDENCE INTERVAL FOR EXP(B)	
								LOWER	UPPER
Gender	1.041	0.491	4.487	1	**0.034	0.1375	2.832	1.081	7.418
Age	0.073	0.025	8.444	1	**0.004	0.2213	1.076	1.024	1.131
Total score	0.955	0.324	8.686	1	**0.003	0.2254	2.597	1.377	4.900
Constant	-11.440	3.176	12.978	1	*0.000				

Notes: ** Significant at the 0.05 level; * Significant at the 0.01 level. (1) Estimates of the coefficients. (2) Standard Error. (3) Atinkson's RA (measures the partial correlation between the co-variables and the dependent variable). (4) Odds Ratio.

Source: Elaborated by the authors.

Analysing the values for Exp(B), in Table 5, we find that the variable with the most reason chance of success was 'gender' with a score of 2.832. We interpret this value so that, holding other covariates stable, male entrepreneurs have 2.8 more chances of success than female entrepreneurs have.

For better comprehension, see the model deriving from the results shown in Table 5, having the following configuration by the estimated coefficients:

$$ln\ [p(success)/1\text{-}p(success)] = \text{-}11.440 + 1.041\ X_1 + 0.073\ X_2 + 0.955\ X_3$$

In which: X_1 is the gender of the entrepreneur, X_2 is his age and X_3 is the scores obtained in the entrepreneurial potential scale.

With those results, we can estimate the success probability using the following formula:

$$P\ (success) = 1\ /\ 1 + e^{-\ (\text{-}11.440 + 1.041\ X_1 + 0.073\ X_2 + 0.955\ X_3)}$$

Following a comparison between a male entrepreneur and a female entrepreneur, maintaining stable the other co-variables.

In which: $X_1 = 1$ (male); $X_1 = 0$ (female)

$\qquad$ $X_2 = 25$ years

$\qquad$ $X_3 = 7$ points in the entrepreneurial potential scale

Having:

P (male success) $= 1/1 + e^{-(-11.440 + 1.041 \times 1 + 0.073 \times 25 + 0.955 \times 8)} = 0.131$ (13.1%)

And

P (female success) $= 1/1 + e^{-(-11.440 + 1.041 \times 0 + 0.073 \times 25 + 0.955 \times 8)} = 0.051$ (5.1%)

Some studies which attempt to differentiate women entrepreneurs compared to men entrepreneurs show a panorama inconclusive due to many ambiguous factors that make its interpretation multifaceted, under various points of analysis (e.g., Betiol & Tonelli, 1991; Gomes, 2004; Jonathan, 2005; Lindo, Cardoso, Rodrigues, & Wetzel, 2007; Strobino & Teixeira, 2014). This is because, on the one hand, women show up constantly advancing in the business landscape, becoming as numerically entrepreneurs as men are (Daulerio, 2016).

Nevertheless, there are several indications that this result found here is coherent and suitable with recent researches. Wadhwa, Aggarwal, Holly and Salkever (2009) and Salloum, Azzi, Mercier-Suissa and Khalil (2016), for example, report female entrepreneurs tend to be dependent on men partners or mentors in the management of a business, becoming better managers, however, worse leaders, with low degree of persistence and less willingness to risk. Daulerio (2016), Salloum *et al.* (2016) and Šírec and Močnik (2016) also indicate that companies of women entrepreneurs tend to have worse financial performance than companies of men entrepreneurs, because women in general are more influenced by exogenous factors to the business, prioritizing the resolution of family and emotional problems at the expense of company's problems. Besides that, Lins and Lutz (2016) are resolute in stating that women have less access to capital than men, effect of a more cautious support from the banks and from their own families.

In turn, changing the values attributed to the other co-variables is possible to find other results. For example, keeping constant the values of the entrepreneur and expand to 9 this score on entrepreneurial potential, the success probability will be expanded to 0.265 (26.5%). That is, the higher the score in the entrepreneurial potential scale, the greater the chance of success of the entrepreneur, as previously observed in the application of the *t* test.

This supports the theoretical proposal for the potential entrepreneur. As Krueger and Brazeal (1994) and Krueger, Reilly and Carsrud (2000) argue, the entrepreneurial action – while proactive and planned intention to entrepreneurship – has as predictor the potential of effectuation of the entrepreneurial acti-

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vity, i.e., similar characteristics among individuals who have achieved success in business. In this same line of thinking, many studies attribute the entrepreneurial success to behavioural factors (e.g., Greatti, 2005; Resmi & Kamalanabhan, 2010; Akhtar *et al.*, 2015; Hsu *et al.*, 2016).

5   FINAL REMARKS

The study aimed to identify possible elements of convergence and explanation for the entrepreneurial potential in relation to success in business (entrepreneurial success). The study highlights the predictive efficacy of the entrepreneurial potential scale, since it is able to show the difference of potential between successful entrepreneurs and entrepreneurs who have failed. The cut-off point, defined in 5 years of business operation to discriminate the success and failure of the entrepreneur, proved to be operationally an adequate demarcation approach. That is, we can then use the minimum period of five years to rank an entrepreneur as successful.

Furthermore, we found that the main convergent between entrepreneurial potential and success in business was the establishment of goals. Thus, we infer that this factor can be a crucial element that budding entrepreneurs or entrepreneurs who have failed with less than five years should be alert so that they can ensure better chances of success in the market. As Santos (2008) recommends, the entrepreneur must interpret the entrepreneurial potential scale as an indicator of the ideal model for a successful entrepreneur. Therefore, the entrepreneur should do a self-analysis on its score on the scale and should try to improve precisely the factors that showed low scores, seeking to increase the elements that help to keep the business running.

Logistic regression supports the results obtained using the *t* test. Results show a higher probability of entrepreneurial success with higher scores in entrepreneurial potential scale. On the other hand, regarding the higher probability of failure have been predicted by gender, we argued that this result confirms recent researches (e.g., Anggadwita & Dhewanto, 2016; Daulerio, 2016; Lins & Lutz, 2016; Salloum *et al.*, 2016; Širec & Močnik, 2016).

This study provides advances for research in entrepreneurship, which the main gain is the empirical operationalization of success and failure in business to the specific hypothesis testing and the identification of antecedent and consequent variables of entrepreneurial potential.

Nevertheless, there are limitations due to non-consideration of contextual and socio-economic factors whose relevance is the finding causal effects of moderation and mediation. Thus, even assuming that other variables could have

been tested, the study is fruitful in the investigation and deepening on success in business, under the behavioural bias subjacent to the entrepreneurial potential.

Thereby, we suggest that further studies seek better understanding of the factors related to entrepreneurial success. We intend, with this study, to spread the use of entrepreneurial potential scale that so far has been a reliable and appropriate tool for several uses in empirical research produced in Brazil (see Santos, 2008; Alves & Bornia, 2011; Souza *et al.*, 2015), low cost (pencil and paper) and easy to apply (self-administered and self-reported), with validity and without use restrictions.

For future studies, then, we point out the need for replication of entrepreneurial potential scale in other samples, in order to ratify or refute the results found here. Also, considering the need for investigation about contextual and socio-economic order factors, we report future use of the Inventory of Barriers and Facilitators to Entrepreneurship (Souza, 2014), to determine whether there is difference between successful entrepreneurs and entrepreneurs who have failed in relation to valuation of aspects that stimulate or inhibit the business.

O POTENCIAL EMPREENDEDOR E O SUCESSO EMPRESARIAL: UM ESTUDO SOBRE ELEMENTOS DE CONVERGÊNCIA E EXPLICAÇÃO

RESUMO

Objetivo: O estudo teve por objetivo verificar se há diferença de potencial empreendedor entre Empreendedores de Sucesso e Empreendedores que fracassaram; e se há variáveis que podem ser consideradas preditoras do sucesso ou fracasso do empreendedor.

Originalidade/lacuna/relevância/implicações: Traz-se uma abordagem inovadora para a pesquisa em empreendedorismo, cujo teor principal está na operacionalização empírica do sucesso e do fracasso empresarial para o teste de hipóteses específicas e a identificação dos antecedentes e consequentes do potencial empreendedor.

Principais aspectos metodológicos: A pesquisa foi conduzida em caráter descritivo e de abordagem quantitativa. Aplicou-se a escala de potencial empreendedor em 246 empreendedores, dos quais 100 entraram nos critérios de análise, operacionalmente, como empreendedores de sucesso (n = 50) e empreendedores que fracassaram (n = 50). Os dados foram analisados por meio de técnicas de Regressão Logística e Teste t de Student.

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Síntese dos principais resultados: Os resultados mostram que o empreendedor de sucesso possui maiores escores na escala de potencial empreendedor que o empreendedor que fracassou, sendo o principal convergente entre potencial empreendedor e sucesso empresarial o estabelecimento de metas para o negócio. Na amostra investigada, a variável gênero se mostrou um forte preditor do sucesso empresarial, indicando que homens tem 2,8 vezes maior chance de sucesso nos negócios que mulheres.

Principais considerações/conclusões: Depreende-se que os resultados encontrados lançam luz sobre elementos cruciais para a explicação do sucesso empresarial e corrobora resultados recentes trazidos por pesquisas sobre empreendedorismo e gênero.

PALAVRAS-CHAVE

Empreendedorismo. Potencial empreendedor. Sucesso. Fracasso. Gênero.

EL POTENCIAL EMPRENDEDOR Y EL ÉXITO EMPRESARIAL: UN ESTUDIO SOBRE ELEMENTOS DE CONVERGENCIA Y DE EXPLICACIÓN

RESUMEN

Objetivo: El objetivo del estudio fue verificar si existe diferencia de potencial emprendedor entre emprendedores que tuvieron éxito y emprendedores que han fracasado; y si hay variables que se pueden considerar predictores del éxito o fracaso del emprendedor.

Originalidad/laguna/relevancia/implicaciones: Trazamos un enfoque innovador a la investigación sobre emprendimiento, cuyo contenido principal está en la práctica empírica de éxito y fracaso empresarial para lo teste de hipótesis específicas y la identificación de los antecedentes y consecuentes del potencial emprendedor.

Principales aspectos metodológicos: La investigación se realizó con enfoque descriptivo y cuantitativo. Aplicamos la escala de potencial emprendedor en 246 empresarios, de los cuales 100 entraron en los criterios de análisis como empresarios que tuvieron éxito (n = 50) e empresarios que fracasaron (n = 50). Los datos fueron analizados mediante técnicas de regresión Logística y test t de Student.

Síntesis de los principales resultados: Los resultados muestran que el empresario exitoso tiene puntuaciones más altas en la escala de potencial emprendedor

que el empresario que ha fallado. La principal convergencia entre el potencial empresarial y el éxito empresarial fue el establecimiento de metas para el negocio. En la muestra investigada, el género mostró ser un fuerte predictor de éxito en los negocios, lo que indica que hombres tienen 2,8 veces más posibilidades de éxito en los negocios que mujeres.

Principales consideraciones/conclusiones: Los resultados arrojan luz sobre elementos cruciales para la explicación del éxito empresarial y corrobora los resultados recientes presentados por estudios sobre emprendimiento y género.

PALABRAS CLAVE

Emprendimiento. Potencial emprendedor. Éxito. Fracaso. Género.

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