

ENTREPRENEURIAL POTENTIAL PROFILE MEASUREMENT AND IT'S IMPACT ON SMALL BUSINESS PERFORMANCE

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Abstract

The entrepreneurship issue has been widely broadcasted among both academic and business environment by means of publications, practical cases and examples from entrepreneurs who are well succeeded in their business career. Small companies are considered to be one of the main agents of development and economic growth of a country. Considering this scenario, the present research aims to build an instrument to identify which are the main factors that form the entrepreneur's profile. In order to achieve that objective, 965 questionnaires were collected. According to the research's results, the EPP- Entrepreneur Potential Profile is composed by eight factors: strategic competence, risk, innovation, formal planning, relationship, analytical thinking, dedication and challenge. Through Structural Equation Modeling, it was verified that the EPP (Entrepreneur Potential Profile) could explain for 25% of the performance in a small business.

Key words: entrepreneurship, small business, performance

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1. INTRODUCTION

In an undertaking society that has been constantly stimulating the entrepreneur's spirit, individuals considered entrepreneurs face great challenges that need to be seen as opportunities, transforming the enterprise learning into an art of creating actual results, with a lot of discipline and perseverance. It is those individuals that boast economy, supplying new consumer's goods and groundbreaking production methods. (Drucker, 2003; Schumpeter, 1982; Timmons, 1989).

A significant portion of scientific studies on the subject seek to analyze entrepreneurial behaviour, actions and postures that differ it from a "regular" human being, structuring personal features of success that direct those who want to work on their own account. Each day the number of studies and researches carried out in an attempt to understand psychological and sociological powers that move the successful entrepreneur is increasing. Each researcher, using logic and a methodology established in their own field of study, has directed a significant effort in the process of establishing the entrepreneur's identity characteristics. The main the authors that carried out the first researches about entrepreneurial behavior are: McClelland (1961); who developed an applied

research and identified several characteristics of the entrepreneurial behavior, common in successful people; Schumpeter (1982), who emphasizes the entrepreneur's figure associated to risk, innovation and profit and; Mintzberg (2001), that suggests a relationship between entrepreneurship and business strategy process. In this scenario, Freire (2005) reasons that there are two crucial questions that direct the entrepreneurship studies:

- What is it to be an entrepreneur?
- On what does entrepreneurship consist in?

The aggregation of approaches of different authors about the entrepreneurship theme has not been able to form an integrated understanding with regards to the plausible meaning of who actually is the entrepreneur. It is difficult to distinguish their different characteristics, the perception of opportunities and risks related to it; the strategic choices and the manner of how to allocate resource to create the enterprise. The lack of agreement has also been hindering researchers' progress in constructing a solid theory in this field, as well as the impact that the entrepreneur attitude exerts upon the organizational performance (Dolabela, 2004).

Timmons (2004), reasons that knowing the entrepreneur's mind, how he thinks, acts, executes and

transforms his abstract history into a real fact, it will be possible to create attributes that will allow to identify similarities and differences among the entrepreneurs that were researched, establishing indexes that, when analyzed, will contribute to the creation of analysis parameters and the interpretation of the potential entrepreneurial (Timmons, 2004).

Considering this whole scenario and the importance of entrepreneurship's contribution to the economic growth of a country, the present research is directed in investigating how the entrepreneurial potential influences the result of small businesses, through building and validating the entrepreneur's attributes and application of a survey with small businesses entrepreneurs.

2. LITERATURE REVIEW

2.1. Small Companies

Small companies are considered to be one of the main agents of development and economic growth of a country, for they bring two great contributions to this result: the creation of more stable and long lasting jobs and of technological innovations. According to the author, since Second World War, 50% of the technological innovations and 95% of radical innovations, aimed in rupturing with the traditional established processes, were originated in small companies, showing that, in those small companies, flexibility, creativity and opportunities are essential elements to innovation. (Timmons, 2004).

In Brazil, according to the data based on researches carried out in 2004 by SEBRAE (Brazilian Service for Supporting Micro and Small Companies), the small companies represent 98% of the total existing companies in the country and 59% of the total workforce, being responsible for 48% of the national production and 21% of the GDP, reinforcing the idea that small companies are directly responsible for employment rates and national production, contributing in a very significant way to the country's economical growth and development.

2.2. The Entrepreneurial Potential

The economist Schumpeter (1982) was one of the first thinkers in the early 20th century, was one of the first researchers that tried to translate the meaning of the entrepreneurship, when he described the entrepreneur's contribution to the wealth generation as a process of creative destruction. The author affirms that the entrepreneurship's essence lies within the perception and exploration of new opportunities in the business scope, using resources in an innovative manner. For the author, there are no entrepreneurs without innovation; there is no capital return without investments and capitalism does not propel itself. From this analysis, economists started seeing the entrepreneurs as detectors of business opportunity, creators of company and risk takers.

There are countless studies aiming to identify the entrepreneur's profile. It was objectified, through the classical authors and empirical researches, to make a summary. In 1961, McClelland (1961) started his studies about entrepreneurship theme that were broaden in 1982 through a survey with entrepreneurs from 32 countries and corroborated by several researches and further experiments. A motivational evaluative test was used, the TAT (Thematic Apperception Test) and problem solving tests, which results showed that the individual entrepreneur has a motivational structure differentiated by the remarkable presence of a specific necessity: the necessity of accomplishment (McClelland, 1961). According to the researcher, the accomplishment motivation and behavioral characteristics are essential factors to explain for the apparent indifference of a lot of people and the insensibility of another few to economic opportunities of the environment. (McClelland, 1961).

Carland (1996) and his team of researchers identified three of the main characteristics in the entrepreneur's personality: the tendency of taking risks, the preference for innovation and for creativity and the necessity of accomplishment. These three integrating factors, identified by the CEI – Carland Entrepreneurship Index, compose the entrepreneur's profile by his point of view. His understanding has substantiated the construction of new researches about the entrepreneur's potential. (Carland, 1996)

Drucker (2002) observed that entrepreneurs look for changes. They look at every window and ask themselves: "could that be an opportunity?" An entrepreneur does not lose something only because it is not part of his planning. For the author, the unexpected is frequently the best source of information. Ideas are born small, immature and unshaped. It is more about promises than accomplishments. It is necessary to transform them into opportunities, take risks and convert a small idea into a great innovation.

In 1982, the USAID - U.S. Agency for International Development - and MSI - Management Systems International - and McBeer & Company, McClelland's consulting company, started a project for deeper studies about the entrepreneur's behaviour. The project started with a study in 34 countries, identifying several entrepreneurial behaviour characteristics - EBC - common to the successful entrepreneurs, that were grouped into four categories of personal competence. These characteristics, which a successful entrepreneur should have, need to develop or only improve them (SEBRAE, 1995).

Carland, Carland and Hoy (1992) developed a device to measure the entrepreneurial potential of an individual, measured by CEI - Carland Entrepreneurship Index - that has been improved and applied in other research groups. The authors concluded that entrepreneurship is an integration of five elements: necessity of accomplishment, creativity, tendency to innovate, to risk and to have a

strategic posture, related by the authors as a search for opportunities. According to Carland, Carland and Hoy (1992) the stronger or weaker presence of those characteristics in an individual define his potential, in accordance with the CEI scale, which ranks the interviewees with scores from zero to thirty-three points, contained into three zones: micro-entrepreneur, entrepreneur and macro-entrepreneur. CEI is a self-answering questionnaire with thirty-three affirmative sentences combined in pairs, in such a manner that the interviewees are forced to choose one single question. Its main goal is to identify the entrepreneur's entrepreneurial potential that answers the questions.

3. HYPOTHETICAL MODEL

By observing the Carland and Carland's proposal (1996) on the entrepreneurial potential, as well as other researched authors such as McClelland, Schumpeter, Timmons, Filion, Mintzberg, Dornelas, the following hypothetical model had been proposed.

 Insert Figure A1 about here

It is then described the null hypothesis and the alternative model:

Hypothesis 0.1: There is no positive linear relation between the entrepreneurial potential and small businesses performance (the path between both variables equals ZERO).

Hypothesis 1.1: There is a positive linear relation between the entrepreneurial potential and small businesses performance.

4. METHOD

4.1. Methodology

The research was organized in two distinctive phases. The first one, with an exploratory character, was aimed to go develop a deeper study of the entrepreneurial phenomenon, getting familiarized with the issue so it would become more explicit, helping in the identification of variables to arrange the research's questionnaire. This phase used a qualitative approach, deeply applying literature revision and interviews with entrepreneurs, specialists, scholars of the subject (12 interviews). The second phase focused on the research's development through a (quantitative) survey.

4.2. Sample and Data Collection

The population that was researched consisted of 965 entrepreneurs from small businesses legally formed in the State of Minas Gerais, Brazil, aiming to include all the main areas of the State. Data collection made use of three distinct modalities: a) mail; b) SEBRAE's attending points and; c) Internet.

4.3. Research Instrument

The questionnaire was developed following a number of steps. Initially, we conducted a revision of accepted authors' literature, such as McClelland (1961), Schumpeter (1982), Timmons (1989), Carland (1996), Filion (1999), Mintzberg (2001), Dornelas (2001), Drucker (2003); and previous researches with businessmen and entrepreneurs conducted by SEBRAE and GEM - Global Entrepreneurship Monitor.

Following, a group of entrepreneurial specialists studied a list of variables and items that contributed to improve the research instrument. After a content analysis, a pre-test was conducted with 35 interviewees (small companies' businessmen).

The scales used in the questionnaire are of eleven-points, for they are continuous. The scales were developed as follows:

a) Entrepreneurial potential: the scales were basically obtained from Carland and Carland (1989), McClelland (1961), Sebrae (2004) and from the panel of entrepreneurial specialists' contribution.

b) Business performance (result): the scales were obtained from Jaworski, and Kohli A (1993) and Narver e Slater (1990).

Oliveira and Moraes (2006) observe that several authors demonstrate the capacity of measuring the subjective performance indicators, quoting among them: DESHPANDÉ, FARLEY, WEBSTER (1993), PELHAM, WILSON (1996), NARVER, SLATER (1990), KAHN (1998), HULLAND (1995), CONANT, MOKWA, VARADARAJAN (1989). In this sense, they choose to use the subjective performance indicators, pointing out that there is strong experimental evidence of high positive correlation between measures and objective performance (DESS, ROBINSON, 1984; VENKATRAMAN. RAMANUJAM, 1987; SAMPAIO, 1999).

5. RESULTS

5.1. Data Analysis

5.1.1. Sample description

According to the data collected, 67% of the entrepreneurs are men and 33% women; 70% are aged between 21 and 40 years old. Around 75% are married and 57% have children. It was verified that 37% invested up to US\$ 2,000 in business and 14% of them invested over US\$ 25,000, being that 30% used their own resources and 13% family resources. The majority has developed partnerships (37%) in the service sector (51%), being that 75% have up to 5 employees. Analyzing the reason of opening the business, it was observed that 53% started their own business by observing new opportunities and 37% by necessity.

5.1.2 Absent data analysis

In the present study, the missing data appeared in an irregular and diffused way: actually, only 84 cases had data in all scale variables that were studied, which represents less than 0.09% of all the base of 85.885 cells (89x965).

5.1.3 Outliers' analysis

They were analyzed according to Kline (1998) and Tabachnick and Fidel (2001) recommendations. The offensive values were replaced by the next valid value in the scale that denoted an unvaried outlier. In sequence, the multi-varied outliers were identified, applying the Mahalanobis distance rules (D2).

5.1.4. Normality analysis

For this analysis, LISREL's 'normal scores' were chosen. Although the score normalization brought significant changes in the distribution, as demonstrated above, these improvements were not enough to guarantee the multivariate normality at level of 5% ($P < 0.001$). On the other hand, Mardia's statistic, designated PK induced the acceptance of the hypothesis that the multi-varied normality was reached (Garson, 2001; Hattie, 1997). This implied that the data presented a moderate degree of distance from the multi-varied normality.

5.1.5. Linearity analysis

The correlation matrix totalizing 89 variables were analyzed, composed of 3,916 non-redundant correlations (89x88/2), among which 2922 correlations (75%) were significant in significance level of 5%, according to two-tailed tests. Thus, we understand that the correlation between the variables present evidences of linear adjustments among the variables, consequently answering the presupposed of linearity among variables.

5.2. EVALUATION OF THE RESEARCH INSTRUMENT'S TRUSTWORTHINESS

5.2.1. Measurement dimensionality analysis

According to Netemeyer et al. (2003), the first phase in an instrument's trustworthiness evaluation, is the measure dimensionality verification. One should find in the bulk of the analyzed data, which are the subjacent constructs. Carland and Carland (1996) suggested that the constructed reverse items were basically consisted of five distinct dimensions, presented in the theoretical referential. However, in this study the option was not to use the original typologies suggested by the authors, due to some basic considerations. Some of the items, originally suggested by the authors, in the forced choice form, apparently do not have the basic properties for this type of scale, that is, they do not seem to address to antagonic aspects of the analyzed features (McDaniel and Gates, 2003). Furthermore, the use of the forced scale, limited by the variation of the available data,

implies in a basic contradiction with the idea that entrepreneurship stretches out in a continuum (Júnior, 2002). The suggested items in dichotomic scales were hereby converted into the likert type scales, in order to make it possible to obtain a larger data variability and also to verify to which extend the measurings comprised the different aspects of the present phenomenon being studied. This change alone would mean that the original suggested factor's structure by the authors could be, and probably is, diverse from the obtained in this study. By this manner, in the theoretical development of this study, several items were found in the literature as a reference to the entrepreneurial behaviour. Once more, it is important to emphasize that, by putting those items in the entrepreneurial behavior group, a change in the latent factors' structure may occur as originally suggested in the CEI. And more, in this study a different population from the one which the original instrument had been evaluated is being focused, so crucial differences may emerge in the factor's structure as in the proper number of the relevant factors (Netemeyer et al., 2003).

Finally, it is believed that in the original instrument proposed by Carland and Carland (1996) there were not sample conditions that could guarantee the analytical procedure that were used. As the study was validated with a sample of 73 individuals for a bulk of 33 items, there is the rate of 2.21 elements in the sample for each applied variable in the exploratory factor analysis, which is a limit bellow of what is considered adequate when applying this technique (Hair et al., 1998; Tabachnick e Fidel, 2003). Thus, the use of the customary procedures was chosen to explore the measurements' dimensionality.

The conditions for applying the factor analysis were adequate were observed, by means of a significant result, in Bartlett's esfericity test and a KMO measure higher than 0.07 (Tabachnick e Fidel, 2001). Stating from the premise that the subjacent factors represent the different aspects of the entrepreneurial behaviour, an oblique rotation was applied in the data interpretation (direct oblimin), aiming to simplify the factorial structure and to make it possible to interpret the data (Hair et al, 1998). Finally, having in mind that many items inserted in the analysis, were inverted indicators of the different semantic scale used by Carland and Carland (1996), the researchers tried to minimize the redundancy by excluding those that, clearly, did not add to the face validity and the measurement's content, since they were antonymous indicators that carried the same factors. After the exclusion of the less significant items and those that did not presented significant weight (superior to 0.25) it was possible to find an eight-dimension factorial solution, as shown in table B1.

Insert Table B1 about here

Insert Table B1.1 about here

It is clear that a total of eight factors were extracted from the EFA (Exploratory Factor Analysis) in this study, which is contrasted with results obtained by Carland and Carland (1996) and Junior (2002). Some of the extracted factors combined with the originals obtained by the authors, such as the *risk* factor (second factor extracted in the EFA), *innovation* (third factor extracted in the EFA), but the factors, *personality* and *strategic posture* have crucial differences compared with the items that form those constructs, as well as the way that these factors were divided into more dimensions.

 Insert Table B2 about here

In table B2, the first factor indicates the pro-active posture, self esteem in the entrepreneur's strategies, and was identified as *strategic competence*. The factor here demonstrated, is notably different for the *strategic posture* obtained by Carland and Carland (1996), the reason being that it is formed by indicators extracted from other literature sources other than CEI. The second factor indicates the degree of formalization of procedures and plans by the entrepreneur, named as *formal planning*. The third factor, *innovation*, is also similar to the one obtained by Carland and Carland (1996) and Junior (2002). The fourth extracted factor corresponds to the degree in which business represents a fundamental aspect in the entrepreneur's life, in detriment to their families and other extra work activities, being therefore named *dedication*. The fifth extracted factor represents those disposition facets and business risks acceptance, considered to be the *risk factor*, found by the authors in their original studies. The sixth extracted factor corresponds to the degree in which the entrepreneur finds it easy to relate with their staff and other members of their professional surroundings, named here *relationship*. The seventh factor indicates the affinity of the entrepreneur towards formal planning process and the business analytical thinking, named as *analytical thinking*. Last, the eighth factor indicates the degree in which the entrepreneur sees a challenge in the success of his business, such as a goal for personal accomplishment, named as *challenge*.

The factors found for that scale differ significantly from those found in the original validity study by CEI. However, it is important to remember that Carland and Carland (1996) found moderate evidences in the validity of its original structure of four factors for the items that form the CEI. The authors themselves recommend that further studies should evaluate the adequacy of the applied factorial structure, despite the high primitive validity or the obtained scales. Thus, it is believed that this study found evidences of a stronger dimensionality, from a statistic and conceptual point of view of the proposed scales. Further validity steps will be taken in order to verify further psychometrics scale properties. From this point on, the dimensionality of the business

performance scale was explored, as defined in table B3.

 Insert Table B3 about here

It can be noticed that a unidimensional was obtained for the performance scale, showing that this scale can be considered as a unique factor of the company performance. Indeed, this demonstrates that the entrepreneurs considered all the items that were defined as facets of business performance. To verify the possible impact of the influential observations about the EFA, an analysis was made considering the exclusion of the cases that were considered aberrant. This analysis, showed that the factors formed for the Entrepreneurs Potential Profile scale as well as for the organizational performance scale maintained stable in the solution without the outliers, having as the exception the *innovation* factor that had a load crossed of some of the indicators with the *formal planning* factor. In fact, this change can be considered trivial and, in a way not to harm the generalization of the results, it was preferred to analyze the results considering these extremes of the results considering these extremes. Summing up, it is possible in this topic, to present evidences about the dimensionality of the scales that were used.

5.2.2 Reliability analysis of the measures

A scale's reliability is understood as the degree, in which the measuring is free from random mistakes that can be expressed by the degree in which the indicators are correlated with the true variable values (Netemeyer et al., 2003). All Alphas had values above 0.6, acceptable for exploratory studies (Netemeyer et al., 2003), except for two factors: dedication and challenge, with 0.5 values. Such a fact suggests that more studies can improve the measuring of those two factors, with a possible inclusion of new items. The logic of measures' adaptation evaluation was applied on the performance constructs as well, obtaining a Cronbach's Alpha of 0.8891.

5.2.3 Convergent validity analysis

Regarding the entrepreneur's profile scale, it is possible to noticed that all the indicators concerning the respective scales presented convergent validity, according to the significance of the factor loads' criteria proposed by Bagozzi et al. (1991). Still, by the same criteria one can say that the constructs related to the Entrepreneurial Profile, present convergent validity, as their loads present significant values with that scale dimension. One can say that such variables present convergent validity, according to the suggested criteria. The following diagram represents the tested factorial model, taking into account only its latent structure, in other words, the indicators are omitted to simplify the graphic representation in the figure A2:

 Insert Figure A2 about here

Observing the model's adjustment index demonstrated in the last figure, it presents a moderate adjustment, according to Hair et al. (1998) suggestions. The GFI's measure (Goodness of Fit Index) can be interpreted as a percentage measure of the entry matrix correlations that are explained by the proposed model (Tabachnick and Fidel, 2003). In this study, the value was of 0.89, indicating that the model can explain, approximately, 89% of the original correlations. This shows that, at least for these dimensions of the Entrepreneurial Potential Profile, the factorial structure finds reasonable backup inside the proposed limits (Kline, 1998).

5.3 Considerations about EPP's measurability – Entrepreneurial Potential Profile

In order to analyze initially the results, the table B4 and graphic C1 is presented, with the EPP's average factors and of the EPP.

 Insert Table B4 about here

 Insert Graphic C1 about here

It was observed that constructs such as *risk, strategic competence, analytical thinking, empathy, formal planning, challenge and innovation* demonstrate higher averages. That may mean that the entrepreneurs tend towards having a greater influence of those traits, which can indicate the basic profile of those businessmen.

The low average of the construct dedication may indicate that, at least for those businessmen, giving up family and other goals is not a common fact, in other words, these businessmen have other activities and interests that go beyond the success of their business. As a matter of fact, this may indicate that the search for the balance between work and family, profession and leisure are relatively common among them. Besides that, the study tried to identify which were the determinant factors of entrepreneur's profile, as well as their particular dimensions. To do this, the study backed on, in the cases that are presented as followed, the nonparametric spearman correlation, because of its strength when the extreme cases in the variables were analyzed, and also because some of the variables are clearly ordinary, such as the company's gross billing (Pestana and Gageiro, 2003). Using this perspective, it was possible to make the evaluation among the companies' factors and variables that were studied and analyzed (table 31).

5.4 The relation evaluation between Entrepreneurial Potential Profile and the Business Performance

Structural Equation Modeling was used to evaluate the research model because the technique has the capacity of dealing with measurability errors and the relations between constructs in the same analysis. In order to test the global model, an aggregated sample was obtained of 965 cases in a total of 97 free parameters which indicates a total of 9.94 observations in the sample for each estimated parameter in the model. The tested model using only the factorial structures can be represented in the Figure A3.

 Insert Figure A3 about here

Considering the variables that form the Entrepreneurial Potential Profile, it is possible to say that this construct has a reasonable impact over business performance. Indeed, the EPP construct was able to explain approximately 25% of the business and companies' performance variance. Thus, the model has obtained satisfactory results, reaching moderate levels of adjustment in the indexes that were explained and presented previously in Figure A3.

5.5 Considerations about the Entrepreneurial Potential Profile

One important point of this study is the proposal of presenting a valid and reduced scale that is capable of measuring the entrepreneur's profile's dimensions with relative reliability. At this point, the final retained items are presented in the scale, as well as the individual weights of each question and facet in the elaboration of the Entrepreneurial Potential Profile. It also presents the individual weights; each question has to be multiplied before it is added to form Entrepreneurial Potential Profile total score. Following, in table 5, the indicators, their dimensions and respective weights are presented.

 Insert Table B5 about here

By applying the obtained weights in the previous table, it is possible to establish the weight of each dimension and calculate the total Entrepreneurial Potential Profile (EPP). We also present the *percentiles* of each dimension and of the global EPP for the figures 20, 40, 60, 80 and 100 as a way of dividing the entrepreneurs into groups, in each of the dimensions, being respectively: Very Low, Low, Medium, High and Very High. These cutting points can be used for entrepreneurs that have undergone the Entrepreneurial Potential Profile's test and can be used to classify such groups in the proposed dimensions and in the EPP as a whole. The dimensions' weights for the formation of EPP and their *percentiles* can be analyzed in table 6:

 Insert Table B6 about here

5.6 Proposition of an index that can measure the Entrepreneur Potential Profile in Brazil

Starting from the results' analyzes, it was possible to observe forms of establishing and calculating of the entrepreneurial potential profile. This index will allow a wider evaluation of the theme and it will make it

possible to make direct comparisons among the entrepreneur's potential and the different reference levels.

According to Fornell, Johnson, Anderson, Cha and Bryant (1996), the applicability of indexes which uses models of structural validity are evidence of better precision and of measuring power than the indexes that are created through regression or isolated indicators. The applied formula that follows the standard recommended by Fornell et. al. (1996) is:

$$EPP = \frac{\sum_{i=1}^n W_i * X_i - \sum_{i=1}^n W_i * \text{Min} (X_i)}{(\sum_{i=1}^n W_i * \text{Max} (X_i) - \sum_{i=1}^n W_i * \text{Min} (X_i))} * 100$$

Caption:

- **EPP – Entrepreneurial Potential Profile Index**
- W_i – weight non standardized of the attribute i (obtained from structural equations) - importance
- X_i – entrepreneur's attribute i's average
- n - attribute numbers (factors) – in the case 8
- **Min (Xi)** – Minimum value of X (scale, here 0)
- **Max (Xi)** – Maximum value of X (scale, here 10)

$$EPP = \frac{\sum_{i=1}^n W_i * X_i}{\sum_{i=1}^n W_i} * 10$$

Caption:

- **EPP = Entrepreneur Potential Profile Index**
- W_i – weight non standardized of the attribute i (obtained from structural equations) - importance
- X_i – entrepreneur's attribute i's average
- n - attribute numbers (factors) – in the case 8

We can observe in table B7 the regression's weight factors of Entrepreneurial Potential Profile (EPP) which indicates its weight in the formula:

 Insert Table B7 about here

The items which share more variation with their constructs receive a bigger weight in the calculation of these averages, in a manner that it reflects a greater

importance of the proposed variable measurability. In this result, it was possible to identify which of the dimensions weight more for this construct, as well as reporting the global EPP average, that identified the percentage of **8.130** for the **Entrepreneurial Potential Profile**, among the defined constructs, which presented individually the following result, shown in Table B8:

 Insert Table B8 about here

The constructs such as *risk, strategic competence, analytical thinking, relationship, formal planning, challenge and innovation* demonstrated the biggest averages among the interviewed businessmen. That may mean that the interviewed entrepreneurs tend towards having a greater influence of these traits, which can demonstrate the businessmen group's profile, forming the EPP's index and causing effect in the business performance.

The low average attributed to the construct dedication may indicate that for the greatest part of these businessmen, giving up family and associated and affiliated activities on behalf of the objectives related to the enterprise, is not a common fact, demonstrating that these businessmen have other interests or other objectives, which go beyond the unceasing search for the business success. Another attributed analyses factor in the business context, is associated to the fact that the businessmen that have been working longer in the entrepreneurship's management, presented an entrepreneur's profile less affluent than those who have been working for a shorter period, for, in the companies which the entrepreneurs are more creative, the amount of initial resources invested for the business opening was smaller.

In this analysis, what stands out are the observed Entrepreneurial Potential Profile (EPP) queries which can contribute to classify the entrepreneurs, in groups, with affinity related to the EPP, as well as to make them conscious of their individual EPP's level; as found in Table 9.

 Insert Table B9 about here

6. FINAL CONSIDERATIONS

To compare the results of this research about the entrepreneurship theme with previous works and studies, we elaborated a comparative table between the identified Entrepreneurial Potential Profile's factors and the factors defined by the reference authors, as displayed in table B10.

 Insert Table B10 about here

It can be observed that the main limitations of the paper, is that it is a sample of a single transverse cut. Also, it can be observed that, the refine of the subsequent scales and researches are strongly recommended.

Some contributions created by this study might be significant in the improvement of undertaking management, since the entrepreneurs will be able to evaluate their profiles, skills and deficiency. Another possibility refers to the use of the individual result of Entrepreneurial Potential Profile (EPP) as a way to demonstrate the capability that such entrepreneur or

businessman can contribute to the success of the business. It could be used, for instance in a process of negotiating with financing agents who can support the resources release related to the necessary capital in order to start or expand a business. The companies in general, could apply the EPP in the process of selecting new collaborators aiming to attract professionals with more of a entrepreneurship behavior, emphasizing some factors of business interest.

It was observed that a significant number of studies are carried out with the purpose of identifying the aspects that are antecedents of companies' performance in the management context. However, a few in basis that associate the entrepreneur's profile potential with the business performance, searching for explanation of how this element has an impact on the success and results of an organization. This study also contributes to small firms, as it proposes an instrument to measure the entrepreneur profile before opening the business, and enables a diagnosis of strong and weak points of the businessman. As small business firms are an important basis to support jobs, workforces and economies of a wide range of countries and societies, this research add significant knowledge that could improve the results of these important institutions and contribute to the social stability and life quality of human societies.

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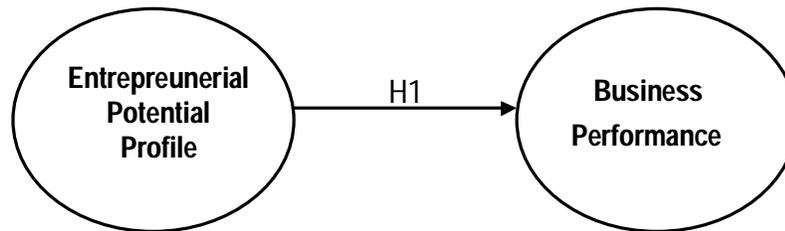
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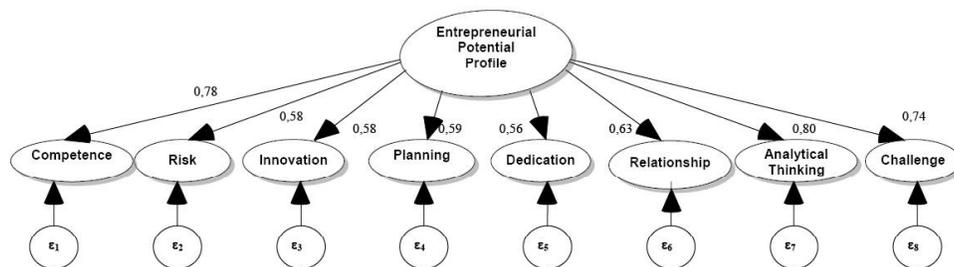
APPENDIX A – FIGURES

Figure A1
Hypothetical Model of Research



Source: the authors

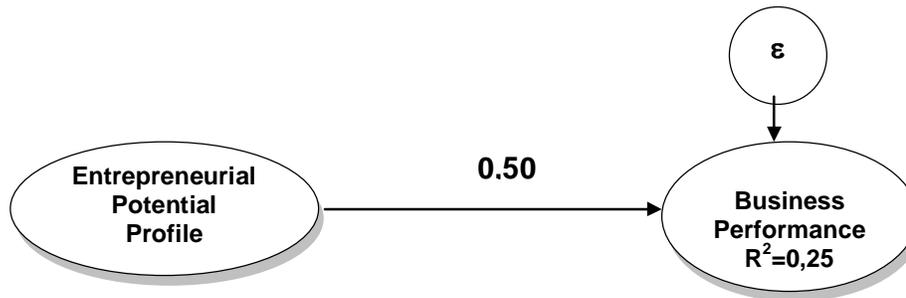
Figure A2
Results of Exploratory Factor Analysis of Entrepreneurial Potential Profile Scale



Source: Research data

OBS: all the standardized loads are significant at the level of 0.01%

Figure A3
Entrepreneurial Potential Profile and Business Performance



| INDEX | VALUE | INDEX | VALUE |
|--------------|---------|---------|-------|
| χ^2 | 3135.24 | IFI | 0.83 |
| g.l | 893 | TLI | 0.82 |
| Sig. | 0.00 | CFI | 0.83 |
| $\chi^2/g.l$ | 3.51 | RMSEA | 0.05 |
| GFI | 0.87 | RMSEALO | 0.05 |
| AGFI | 0.85 | RMSEAH1 | 0.05 |
| PGFI | 0.78 | PCLOSE | 0.19 |
| NFI | 0.78 | HFIVE | 297 |
| RFI | 0.77 | HONE | 306 |

Source: research data

OBS: all the standardized loads are significant at the level of 0.01%

APPENDIX B - TABLES OF CONTENTS

Table B1

Exploratory Factor Analysis: Entrepreneurial Potential Profile

| INDICATORS | FACTOR | | | | | | | |
|---|--------|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| v77) I trust in my ability to face and overcome challenges and obstacles. | 0.71 | | | | | | | |
| v72) I am able to deal with uncertainties and risks. | 0.70 | | | | | | | |
| v71) I trust in my competence of undertaking as a source of success for this business. | 0.64 | | | | | | | |
| v80) I work tirelessly to make my dream of undertaking my entrepreneurial ideas come true | 0.53 | | | | | | | |
| v75) I search for new solutions and innovations to satisfy my clients' needs. | 0.52 | | | | | | | |
| v79) I keep my goals focused even when the first results are not satisfying. | 0.49 | | | | | | | |
| v69) I use my personal networking to reach my goals. | 0.48 | | | | | | | |
| v70) I am responsible within established goals and deadlines. | 0.46 | | | | | | | |

| | | |
|--|------|-------|
| v68) I act pro-actively before being put under pressure by the circumstances and threats. | 0.43 | |
| v74) I take the responsibility for the resolution of problems which can damage the performance of this business. | 0.42 | |
| v76) I work as a team with my employees to meet the deadlines. | 0.42 | -0.33 |

Source: Research data. OBS: KMO Measure= 0,884; Bartlett esfericity test significant (p<0,001). In the table only the loads with values greater than 0,25 are presented. The factors explain 46% of the total variant of the data.

Table B1.1

Exploratory Factor Analysis: Entrepreneurial Potential Profile

| INDICATORS | FACTORS | | | | | | | |
|--|---------|-------|------|------|------|------|---|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| v37) I think that standard operational procedures are crucial. (I) | | 0.73 | | | | | | |
| v1) Having written goals of this business is crucial (N) | | -0.47 | | | | | | |
| v67) Being systematic in the definition of procedures is crucial to improve business. | | -0.44 | | | | | | |
| v15) A plan must be written in order to be effective. (N) | | -0.28 | | | | | | |
| v30) I think that I am an imaginative person. (N) | | | 0.79 | | | | | |
| v44) I prefer people who are imaginative. (N) | | | 0.49 | | | | | |
| v4) I like thinking that I am a creative person. (N) | | | 0.41 | | | | | |
| v38) I appreciate the challenging of inventing new things more than anything else. (N) | | | 0.29 | | | | | 0.26 |
| v48) My real life is out of this business, with my family and friends. (I) | | | | 0.53 | | | | |
| v21) My priorities include a lot of things out of this business. (I) | | | | 0.45 | | | | |
| v47) My personal reasons have to do with business. (N) | | | | 0.41 | | | | |
| v22) One of the most important things in my life is this business. (N) | | | | 0.40 | | | | |
| v52) If you want to exceed the competitors, you must take risks. (N) | | | | | 0.81 | | | |
| v60) If I want this business to grow I need to take some risks. (N) | | | | | 0.68 | | | |
| v26) People who work for me, like me. (I) | | | | | | 0.71 | | |
| v58) People think of me as an easy person to deal with. | | | | | | 0.53 | | |
| v64) I worry about the feelings of those who work for me. (I) | | | | | | 0.44 | | |
| v23) I am a kind of person who likes thinking and planning. (N) | | | | | | | | 0.59 |

| | | |
|---|------|-------|
| v12) I like approaching situations in an analytical perspective. (N) | | 0.54 |
| v9) The most important thing I do for this business is planning. (N) | | 0.43 |
| v34) I try to establish standard procedures in order to have things done correctly. (I) | 0.29 | -0.38 |
| v36) I think that it is important to be logical. (N) | | 0.35 |
| v14) I will not rest until we are the best. (N) | | 0.42 |
| v49) I love the idea of trying to be smarter than my competitors. (N) | | 0.39 |
| v31) The challenge of having success is as important as earning money. (N) | | 0.25 |

Source: Research data.

OBS: KMO Measure= 0,895; Bartlett esfericity test significant ($p < 0,001$). In the table only the loads with values greater than 0.25 are presented. The factors explain 51% of the total variant of the data. (I) checked items were inverted and (N) checked ones have kept their usual direction.

TABLE B2
Factors which compose the EPP – Entrepreneurial Potential Profile

| Order | EPP FACTORS |
|-------|----------------------|
| 01 | Strategic Competence |
| 02 | Formal Planning |
| 03 | Innovation |
| 04 | Dedication |
| 05 | Risk |
| 06 | Relationship |
| 07 | Analytical Thinking |
| 08 | Challenge |

Source: Research data.

TABLE B3
Exploratory Factor Analysis: Business Performance

| INDICATORS | FACTOR |
|---|-------------|
| | 1 |
| The company has presented growth in the market participation. | 0.86 |
| The company has reached a competitive position towards the competition. | 0.83 |
| The company has reached profit increase in the last period of time. | 0.82 |
| The company has obtained profits over the invested capital and resources in the business. | 0.76 |
| The company has demonstrated the capacity of keeping loyal clients. | 0.67 |
| The company can attract new clients in the market. | 0.63 |
| The company has been investing in innovation e technology in the development of new products and products | 0.60 |
| The company has information/researches about similar products and services in the market. | 0.53 |

Source: Research data.

OBS: KMO Measure= 0,872; Bartlett esfericity test significant (p<0,001). In the table only the loads with values greater than 0.25 are presented. The factors explain 57% of the total variant of the data.

TABLE B4

Entrepreneurial Potential Profile Average of Variable

| VARIABLES | N | Minimum | Maximum | Average | Deviation |
|--|------------|-------------|-------------|-------------|-------------|
| Strategic Competence | 965 | 4.38 | 10.00 | 8.76 | 1.01 |
| Risk | 965 | 5.00 | 10.00 | 8.93 | 1.17 |
| Innovation | 965 | 1.04 | 10.00 | 7.41 | 1.63 |
| Formal Planning | 965 | 1.45 | 10.00 | 7.99 | 1.54 |
| Dedication | 965 | 1.11 | 10.00 | 6.85 | 1.65 |
| Relationship | 965 | 3.73 | 10.00 | 8.38 | 1.35 |
| Analytical Thinking | 965 | 3.28 | 10.00 | 8.43 | 1.20 |
| Challenge | 965 | 1.65 | 10.00 | 7.93 | 1.72 |
| EPP | | | | | |
| Entrepreneurial Potential Profile | 965 | 5.14 | 9.98 | 8.13 | 0.86 |

Source: Research data

TABLE B5

Dimensions' Indicators of Entrepreneurial Potential Profile

| INDICATORS | DIM | WEI |
|--|-----|------|
| Having written goals of this business is crucial | PF | 0.24 |
| I like approaching situations in an analytical perspective | PA | 0.22 |
| I will not rest until we are the best | DS | 0.32 |
| A plan must be written in order to be effective | PF | 0.21 |
| My priorities include a lot of things out of this business. | DE | 0.13 |
| One of the most important things in my life is this business. | DE | 0.37 |
| I am a kind of person who likes thinking and planning. | PA | 0.21 |
| People who work for me, like me. | E | 0.39 |
| I think that I am an imaginative person. | I | 0.28 |
| The challenge of having success is as important as earning money. | DS | 0.33 |
| I try to establish standard procedures in order to have things done correctly. | PA | 0.20 |
| I think that it is important to be logical. | PA | 0.16 |
| I think that standard operational procedures are crucial. | PF | 0.30 |
| I appreciate the challenging of inventing new things more than anything else. | I | 0.23 |
| I like thinking that I am a creative person. | I | 0.21 |
| I prefer people who are imaginative. | I | 0.28 |
| My personal reasons have to do with business. | DE | 0.34 |
| My real life is out of this business, with my family and friends. | DE | 0.16 |
| I love the idea of trying to be smarter than my competitors. | CH | 0.35 |
| If you want to exceed the competitors, you must take risks. | R | 0.49 |
| People think of me as an easy person to deal with. | E | 0.39 |
| If I want this business to grow I need to take some risks. | R | 0.51 |
| I worry about the feelings of those who work for me. | E | 0.22 |
| Being systematic in the definition of procedures is crucial to improve business. | FP | 0.25 |

| | | |
|---|----|------|
| I act proactively before being put under pressure by the circumstances and threats. | SC | 0.10 |
| I use my personal networking to reach my goals. | SC | 0.11 |
| I am responsible within established goals and deadlines. | SC | 0.08 |
| I trust in my competence to undertake as a source of success for this business. | SC | 0.09 |
| I am able to deal with uncertainties and risks. | SC | 0.11 |
| I take the responsibility for the resolution of problems which can damage the performance of this business. | SC | 0.08 |
| I search for new solutions and innovations to satisfy my clients' needs. | SC | 0.07 |
| I work as a team with my employees to meet the deadlines. | SC | 0.07 |
| I trust in my ability to face and overcome challenges and obstacles. | SC | 0.08 |
| I keep my goals focused even when the first results are not satisfying. | SC | 0.10 |
| I work tirelessly to make my dream of undertaking my entrepreneurial ideas come true | SC | 0.10 |
| The most important thing I do for this business is planning. | AT | 0.21 |

Source: Research data

OBS: DIM indicates the dimension of EPP which the indicator belongs to. WEI is the weight of the indicator for the dimension. The acronyms for the dimensions are: SC – Strategic Competence, R – Risk, I – Innovation, FP - Formal Planning, DE – Dedication, E – Empathy, CH – Challenge and AT – Analytical Thinking

TABLE B6
Weights, order and percentiles' dimensions of Entrepreneurial Potential Profile

| FACTORS | ORD | Dimension | Weight | Percentiles | | | |
|--|------------|-------------|------------|-------------|-------------|-------------|-------------|
| | | | | 20 | 40 | 60 | 80 |
| Formal Planning | 1 | FP | 0.15 | 6.75 | 7.80 | 8.61 | 9.45 |
| Challenge | 2 | AT | 0.15 | 6.51 | 7.68 | 8.65 | 9.65 |
| Analytical thinking | 3 | E | 0.15 | 7.52 | 8.32 | 8.94 | 9.57 |
| Innovation | 4 | CH | 0.15 | 6.08 | 7.13 | 7.93 | 8.87 |
| Strategic Competence | 5 | FP | 0.14 | 7.97 | 8.74 | 9.16 | 9.65 |
| Risk | 6 | AT | 0.11 | 8.00 | 9.00 | 9.51 | 10.00 |
| Relationship | 7 | DE | 0.08 | 7.28 | 8.22 | 9.00 | 9.61 |
| Dedication | 8 | DE | 0.06 | 5.48 | 6.54 | 7.35 | 8.32 |
| Entrepreneurial Potential Profile | EPP | ---- | --- | 7.46 | 8.02 | 8.43 | 8.87 |

Source: Research data

OBS: ORD. is the order of importance of the dimension for EPP. DIM indicates the dimension of EPP. WEI is the weight of the indicator for the dimension. The acronyms for the dimensions are: SC – Strategic Competence, R – Risk, I – Innovation, FP - Formal Planning, DE – Dedication, E – Empathy, CH – Challenge and AT – Analytical Thinking. The values 20, 40, 60 and 80 indicate the *percentiles* which divide the entrepreneurs into five groups.

TABLE B7
Entrepreneurial Potential Profile Factors and Regression Weigh

| FACTORS | REGRESSION WEIGHT |
|----------------------|-------------------|
| Strategic Competence | 0.76 |
| Risk | 0.60 |
| Innovation | 0.82 |
| Formal Planning | 0.84 |
| Dedication | 0.35 |
| Empathy | 0.43 |
| Challenge | 0.83 |
| Analytical Thinking | 0.84 |

Source: Research data

TABLE B8
Entrepreneurial Potential Profile Factors Average

| EPP Factors | Average |
|----------------------|---------|
| Risk | 8.93 |
| Strategic Competence | 8.76 |
| Analytical Thinking | 8.43 |
| Relationship | 8.38 |
| Formal Planning | 7.99 |
| Challenge | 7.93 |
| Innovation | 7.41 |
| Dedication | 6.85 |

Source: Research data

TABLE B9
Entrepreneurial Potential Profile *percentiles* in the population

| EPP | Index |
|-----------|------------------------|
| Very high | $EPP > 8.87$ |
| High | $8.43 < EPP \leq 8.87$ |
| Medium | $8.02 < EPP \leq 8.43$ |
| Low | $7.46 < EPP \leq 8.02$ |
| Very Low | $EPP \leq 7.46$ |

Source: Research data

TABLE B10
Comparison between Entrepreneurial Potential Profile factors

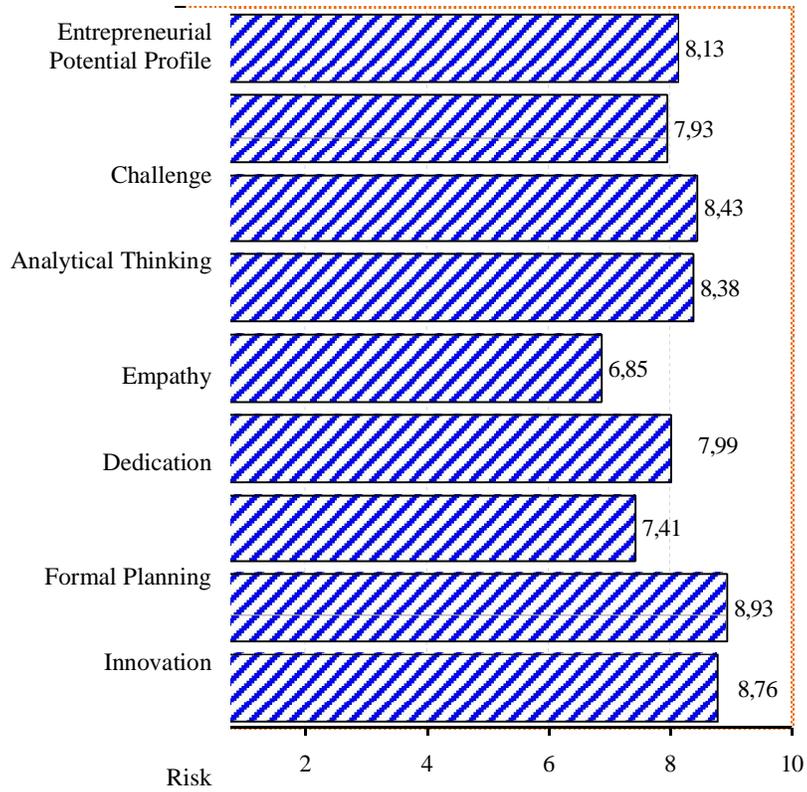
| PPE | McClelland 1961 CCE's | Schumpeter 1982 | Carland 1996 CEI | Timmons 1998 | Filion 1999 | Mintzberg 2001 | Dornelas 2001 | Drucker 1992/2003 | Bygrave 2003 GEM |
|----------------------|-----------------------------|--------------------|------------------------|-----------------|----------------|-------------------|------------------|----------------------|------------------------|
| Strategic Competence | | | Energetic Posture | | | Strategy | | | Strategy |
| Risk | Calculated Risk taking | Risk | Risk propensity | Uncertainty | | Uncertainty | Risk | Risk | Risk taking |
| Innovation | | Innovation | Innovation | Creativity | Imagination | | Take Risks | Innovation | Creativity |
| Formal Planning | Planning | Profitability | | Business Plan | Vision | | Business Plan | | |
| Dedication | Persistence | | | | Persistence | | | | Personal Values |
| Relationship | Commitment | | | Charisma | | | | | Relationship |
| Analytical thinking | Information | | | Knowledge | | Opportunities | | Opportunities | |
| Challenge | Realizations | | Realizations | Motivation | | | | Accomplished Purpose | Realizations |

Source: the author

APPENDIX C - GRAPHICS

GRAPHIC C1

Sample distribution according to Entrepreneurial Potential Profile



Strategic Competence

Source: Research data