Revista de Educação e Pesquisa em Contabilidade
Journal of Education and Research in Accounting

Periódico Trimestral, digital e gratuito publicado pela Academia Brasileira de Ciências Contábeis | Available online at www.repec.org.br

REPeC, Brasília, v. 14, n. 3, art. 7, p. 391-414, Jul./Sep. 2020 | DOI: http://dx.doi.org/10.17524/repec.v14i3.2677 | ISSN 1981-8610

The mediating effect of management control proxies on the relationship between characteristics of the entrepreneur and organizational performance

Rosilei de Fátima Martins de Souza Fonseca
https://orcid.org/0000-0002-4947-2653 | *E-mail: rosilei.martins@yahoo.com*

Márcia Maria dos Santos Bortolocci Espejo
https://orcid.org/0000-0002-9081-781X | *E-mail: marcia.bortolocci@ufms.br*

André Felipe Queiroz
https://orcid.org/0000-0001-8395-8035 | *E-mail: andre.queiroz@ifms.edu.br*

Abstract

Objective: In order to understand the influences of the entrepreneur's characteristics on the financial and non-financial organizational performance, in this study, we aim to evaluate the mediating effect of management control proxies in this relationship.

Method: The sample consisted of fish farmers assisted by a Brazilian technical support program. The data were collected through a questionnaire, applied between October and November 2018, and analyzed using structural equation modeling (SEM), with the help of SmartPLS®software.

Results: The mediation of the management control proxies, in the established relationship, occurs in a partial and concurrent way. The initial model had to be respecified in accordance with the indications of the analyses. The final model indicated that the characteristics of the entrepreneur have a direct and negative influence on the organizational performance by 36.4%, while, and through the management control proxies, the effect was positive by 41.3%.

Contributions: The presence of entrepreneurial characteristics alone does not generate as many expected positive effects on organizational performance as when combining them with the use of management controls. Management control proxies contribute significantly to the performance of fish farms. The research also meets the demand for management accounting studies in small organizations and for accounting research that uses PLS-SEM.

Key words: Characteristics of the entrepreneur; Management accounting proxies; Performance: Fish farming; Agribusiness.

Published in Portuguese and English. Original Version in Portuguese.

Received in 6/15/2020. Ask to Revise on 6/30/2020. Resubmitted on 8/4/2020. Accepted on 8/6/2020 by Dr. Andson Braga de Aguiar (Assistant Editor) and by Dr. Gerlando Augusto Sampaio Franco de Lima (Editor). Published on 9/30/2020. Organization responsible for the journal: Abracicon.

1. Introduction

Entrepreneurship as a scientific research area received greater attention since the 1970s (Cooper, 2003), gaining a multifaceted aspect (Low & Macmillan, 1988). Considering that both entrepreneurial actions and their characteristics are important for the entrepreneurial process (Silva, Gomes & Correa, 2009), the analysis of the entrepreneur's personal characteristics and how they are interrelated with organizational performance shows a plausible line of studies. For the sake of a better understanding of the entrepreneurial process and adjacent themes, it is necessary to consider the individual entrepreneur as a key agent (Obschonka & Stuetzer, 2017).

The literature recommends the existence of mediating variables in the relationship entrepreneur *versus* performance (Rauch, Wiklund, Lumpkin & Frese, 2009). Spillecke and Brettell (2013) demonstrated that entrepreneurial characteristics, when connected to management control, are significantly related with performance. Similarly, Daciê (2016) identified that the mediation of the use of management control proxies potentiated the positive effect between entrepreneurial orientation and organizational performance.

It is continuously appointed in the literature that management control plays a relevant role in supporting organizational management (Otley, 1994; Padoveze, 1999; Frezatti, Carter & Barroso, 2014). This conjuncture stimulates the interest in gaining a better understanding of the relationship between management control and other factors that permeate organizations and that can trigger better results.

Thus, if management control truly acts positively on the relationship between the characteristics of the entrepreneur and performance, the question that arises is: **What is the mediating effect of management control proxies on the relationship between the characteristics of the entrepreneur and the organizational performance of fish farms in the state of Mato Grosso do Sul?**

Concerning the research population, aquaculture and fish farming have represented an important economic sector. Estimates demonstrated that aquaculture will continue being the fastest growing food production sector (IPEA, 2017). With regard to Brazilian fish farming production, the state of Mato Grosso do Sul (MS) ranks 17th, with production figures well below those of its neighboring states. Data presented by IBGE (2015) expose the need to develop the activity in the state of MS, as well as in most Brazilian states.

Therefore, in view of the research question, the general objective of this study is to evaluate the mediating effect of management control proxies on the relationship between the characteristics of the entrepreneur and organizational performance of fish farms in the state of Mato Grosso do Sul. The justification focuses on its contribution to the theoretical area that aims to search for entrepreneurial characteristics related to the success or performance of enterprises, so that these characteristics are sometimes pointed out as elements that influence the performance (Man, Lau & Chan, 2002; Mitchelmore & Rowley, 2010). Likewise, it also aims to explain the role of management accounting proxies in an agribusiness activity, being an important sector of the Brazilian economy.

In addition, research on the role of management accounting in micro and small companies (SMEs) is in demand, as most of the existing research in the area considered the environment of large companies (Mitchell & Reid, 2000; Ahmad & Zabri, 2016). Accounting research that uses structural equation modelling with Partial Least Squares estimation - PLS/SEM - is also in demand (Nascimento & Macedo, 2016). The next sections consist of the theoretical framework, the methodological procedures, the analysis and discussion of the results, and the final considerations.

2. Theoretical Framework

The theoretical support of the research was obtained by means of exploratory bibliographic survey (first stage) and systematically, using the software Start® (second stage). At the end of the systematic review, we identified two articles that discuss the relationship between the characteristics of the entrepreneur and performance; one article that addresses the relationship between the characteristics of the entrepreneur and management control practices; and two articles that deal with management control practices and performance - according to the established protocol. These returns indicate the lack of studies on the relationship between these constructs. Based on these surveys, in the following topics, the relationships between the constructs are discussed and the research hypotheses are presented.

2.1 Characteristics of the Entrepreneur and Performance

The literature on entrepreneurialism includes two main research areas: economics and psychology. In the contemporary economic area, Joseph Schumpeter, one of its primary authors, presents the entrepreneur as an agent of innovation, considering this attribute as the basis for economic development (Fillion, 1999). In the psychological area, David McClelland (1972) argues that, besides the rational form implied in human decisions, there are other psychological and sociological factors that can justify the economic growth.

In an attempt to characterize the entrepreneur, McClelland (1987) – primary author of the psychological area of entrepreneurship – presented, in the report of his study on the characteristics of the successful entrepreneur, a list with nine most significant skills that characterized these entrepreneurs. Based on McClelland's studies, a model was developed in which ten entrepreneurial skills were classified, grouped into three distinct sets: accomplishment; planning; and power (Lenzi, 2008; Zampier & Takahashi, 2011).

Some authors criticized studies relating to traits of entrepreneurial personality (Gartner, 1989), questioning the multiple definitions of entrepreneurship and the use of research methods to distinguish a sublime personality related to performance (Kerr, Kerr & Xu, 2018). Others cited the weak relationship between characteristics of the founders of the business and the performance of the enterprise, triggered by heterogeneous results (Chandler & Jansen, 1992; Herron & Robson Jr., 1993; Masakure, Cranfield & Henson, 2008). According to Fillion (1999), however, discussions regarding small businesses are intrinsically linked to the figure of the entrepreneur.

In some of the studies related to the performance analysis of new enterprises, such as Sandberg (1986), McDougall (1987) and McDougall, Robinson, and Denisi (1992), the entrepreneur was absent, and returned through the hands of researchers whose results have shown the effect of the entrepreneur's characteristics on this performance, rather than only elements such as structure and strategy (Carland & Carland, 1996).

Entrepreneurial characteristics such as goal setting, planning, and systematic monitoring, independence and self-confidence, commitment, and demand for quality and efficiency were associated with higher organizational performance (Fontenelle & Hoeltgebaum, 2006). Performance was also explained by factors in the entrepreneurial profile, constituted based on the competencies found in the literature (Man, Lau & Snape, 2008; Veit & Gonçalves Filho, 2008; Lizote & Verdinelli, 2014; Lizote & Verdinelli, 2015; Eravia, Handayani & Julina, 2015; Daciê, Espejo, Gimenez & Camacho, 2017).

Although the presence of entrepreneurial characteristics does not guarantee the success in a business, they certainly contribute to organizational performance (Bomfim & Torkomian, 2017). Moreover, the absence of characteristics such as leadership and the ability to take risks may represent barriers to the development of entrepreneurship in family farming, in line with Schumpeter's perspective of innovation (Tomei & Souza, 2014).

Given this heterogeneity of results, the question arises whether entrepreneurial characteristics are truly important for organizational performance and, thus, provoke the awakening to this relationship in little-explored environments such as rural production. Despite the lack of a certain convergence in the literature on entrepreneurialism (Grégoire, Noel, Déry & Béchard, 2006), the declaration of the hypothesis took on a posture and a signal, considering the perspective that is expected to derive from a logical and possibly applicable sense (Gil, 2002). Based on the above, the following research hypothesis was established:

- **Hypothesis 1: The characteristics of the entrepreneur positively influence the performance of the enterprise.**

2.2 Characteristics of the entrepreneur and the proxies of management control

As the world becomes less predictable, control becomes more complex (Otley, 1994), so that management control figures as support for change management in this dynamic and unpredictable environment (Lima, Espejo, Pereira & Frezatti, 2011). Although authors such as Johnson and Kaplan (1987) have questioned the relevance of management control, others have indicated the evolution of its models (Lima et al., 2011), so that the management control system, also considering external information, broadens the support for decision making (Mia, Chenhall, 1994; Chenhall, 2003). Management information is as important for micro and small businesses as it is for large companies (Santos, Dorow & Beuren, 2016).

Considering that entrepreneurs do not only establish but also manage a business, with profit and growth as the main objective (Carland, Hoy, Boulton & Carland, 1984), the way they make decisions is what sets them apart from managers. These decisions can be classified as critical and non-critical, that is, strategic and tactical decisions (Hartman, 1954), as managers act objectively while the entrepreneur processes more subjective measures that are strongly linked to their perception (Fillion, 2000).

In the environment of the SME's, however, the entrepreneur and the manager are frequently the same person, whose decision making involves less formal elements, evidencing greater complexity, but also greater agility (Lobontiu & Lobontiu, 2014). Therefore, the characteristics of both are not exclusive and still necessary for the opposite group (Fillion, 2000). In short, entrepreneurs need to adopt more objective administrative practices, aimed at efficiency and effectiveness.

On the other hand, the absence of management accounting artifacts, which traditionally act as precedents of organizational discourse, generates, in organizations, the need for informational proxies that can management accounting information (Frezatti, Carter & Barroso, 2014), called management control proxies. In this sense, it follows that the existence of informal tools that assist the management processes (Daciê, 2016) cooperates with the idea of "Accounting without Accounting" Frezatti, Carter, and Barroso (2014) present.

Thus, the management and control initiative is substantially determined by the characteristics of the entrepreneur (Roper, 1998), and strategic management practices are in line with the entrepreneur (Carland et al., 1984). Based on a systematic review, Daciê et al. (2017) showed that the characteristics of the entrepreneurial orientation positively influence the use of management control proxies.

There are few studies that address the use of management control proxies in SME's, especially in agribusiness and connected to entrepreneurial characteristics, as is the proposal of this research. Therefore, the second research hypothesis was outlined:

- **Hypothesis 2: the characteristics of the entrepreneur influence the use of management control proxies positively.**

2.3 Proxies of managerial control and performance

The classical literature on managerial control sought to understand the relationship of management control systems, mostly with the assessment of the subordinates' performance. For example, Hopwood (1972) investigated the impact of the evaluation style on management performance, while Otley (1978) measured this impact not only on management performance but also on organizational performance. Govindarajan (1984), in turn, analyzed the role of environmental uncertainty in the performance assessment style.

In another dimension of performance, Reid and Smith (2002) found that the quality of management accounting information in small companies is directly related with their performance. Kallunki, Laitinen, and Silvola (2011) identified that formal controls mediate the effect of the enterprise's resource planning system and non-financial performance.

At the same time, management control practices, associated with the differentiation strategy, result in a superior performance (Junqueira, Dutra, Zanquetto Filho & Gonzaga, 2016). Lima et al. (2011) agree that the achievement of a better performance is related to systematized management processes, in which the maximization of return is one of the main objectives of the business (Garg, Joubert & Pellissier, 2004).

As announced in Leite (2016), other studies addressed the positive relationship between management control and performance, such as Mizumoto et al. (2010) and Raifur (2013). The implementation of management controls has shown to be able to influence the objective and subjective performance in small and medium-sized agricultural family businesses, according to Peake and Marshall (2017). This inflow was also verified by Maziriri and Mapuranga (2017), while Macinati and Anessi-Pessina (2014) verified a weak positive relationship between management accounting and financial performance.

Based on the above and considering that the search to understand organizational performance, connecting management accounting to constructs from other spheres of knowledge, is a developmental trend in this field of studies (Oyadomari, Frezatti, Mendonça Neto, Cardoso & Bido, 2011), the third hypothesis emerged:

- **Hypothesis 3: The use of management control proxies influences the performance positively.**

Thus, the management control proxies can act as interlocutors between the characteristics of the entrepreneur and organizational performance, in view of the support offered for decision-making (Oyadomari *et al.*, 2011). Based on the studies presented earlier (Rauch et al., 2009; Spillecke & Bretell, 2013; Daciê, 2016; Leite, 2016) and supporting the general objective of this research, we formulated hypothesis 4:

- **Hypothesis 4: The management control *proxies* act as positive mediators in the relationship between characteristics of the entrepreneur and organizational performance.**

Concerning the four hypotheses raised, it is considered that, although their relationships are neither logical nor simplistic, the proposal of the research is precisely to verify them, by means of a model not yet used in previous research.

2.4 Fish farming

Fish farming is a form of agribusiness, based on the breeding of fish and other aquatic organisms for trade and, according to the Brazilian Ministry of Agriculture, Livestock and Supplies, these activities belong to aquaculture, which is the breeding of fish in fresh water (Eggers et al., 2016). This zootechnical activity is aimed at the rational cultivation of fish, exercising particular control over the growth, reproduction, and feeding of these animals (Galli & Torloni, 1999).

According to Galli and Torloni (1999), the history of fish farming in Brazil begins with Rodolfo Von Ihering, in 1912, who believed that the potential of fish farming would be comparable in the future even with the productivity of chicken farming. Fish farming in Brazil can be developed predominantly in two ways: (1) in farms built for the creation of a single species, usually using artificial feeding aimed at high production, or (2) in farms with several species together and using feeding that is considered not entirely artificial, aiming at efficiency in the combination of different species (Furtado, 1995; Eggers et al., 2016). Thus, in Brazil, fish farming is a comprehensive activity, found both in micro and small enterprises and in family farming or large rural producers.

3. Methodological Procedures

Epistemologically, the research is based on the positivist theoretical perspective, according to Crotty's categorization (1998). The study was developed through an empirical investigation, characterized as applied and descriptive research (Cooper & Schindler, 2016). The approach to the problem contemplates the use of the method whose nature of the data is quantitative.

The research was developed by means of a survey (Martins & Theóphilo, 2016), in a cross-sectional dimension of time (Hair Jr. et al., 2009). The hypotheses raised in the course of the theoretical framework aim to test the relationship between the constructs, finally meeting the general objective of the research, as indicated in the conceptual model (Figure 1).

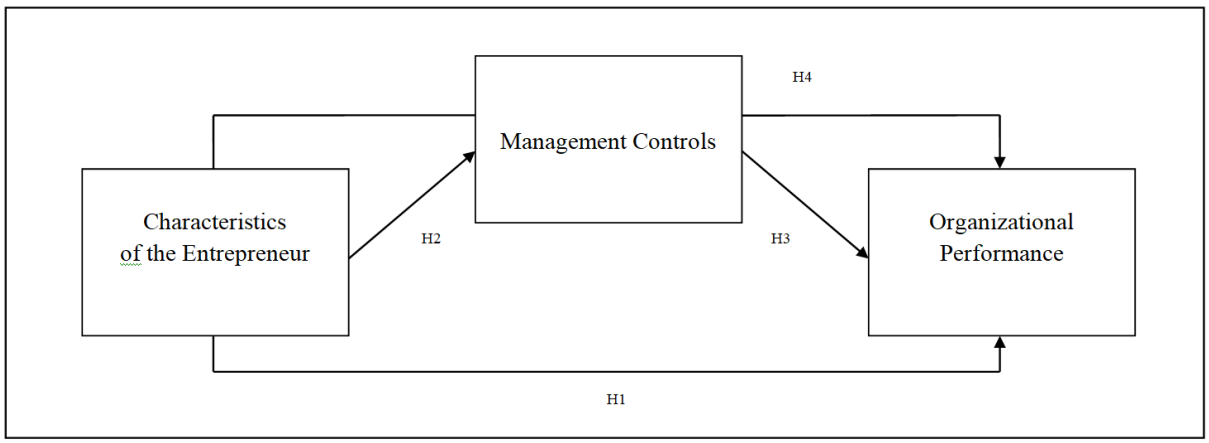

Figure 1. Research design

Source: the authors (2019).

The second-order theoretical constructs were: characteristics of the entrepreneur, management control proxies and financial and non-financial organizational performance. The construct "characteristics of the entrepreneur" includes ten explanatory variables, distributed in three first-order constructs (accomplishment, planning and power). This model is widely used by the Brazilian Support Service for Micro and Small Companies (Sebrae) to develop entrepreneurs through its program in partnership with the United Nations Conference on Trade and Development (Unctad) and the United Nations Development Program (UNDP), called Empretec, deriving from the study by McClelland (1987).

The construct management controls was captured by means of informational proxies, based on the study by Frezatti, Carter, and Barroso (2014), due to the absence of more robust management control systems in micro and small companies. Therefore, this second-order construct was constituted based on four first-order constructs (business plan; financial controls; marketing factors; and personnel control) and 12 indicators. The model was adapted with support from Leite (2016) and similarly employed by Daciê et al. (2017). It is noted that the four first-order constructs match some controls announced in the models by Merchant & Van Der Stede (2003) and Malmi & Brown (2008).

The construct "performance" was measured by self-assessment and subjectively (Govindarajan, 1984), considering that micro and small companies have limitations regarding the use of objective measures (Leite, 2016). Regarding the types of performance, financial and non-financial performance were used (Venkatraman & Ramanujam, 1986; Brush & Vanderwerf, 1992), through four indicators: sales growth; profit growth; increase in the number of employees; and increase in customer satisfaction.

In cases where there is a limitation of the data source on the organizational performance, where the only possibility is the owner and/or manager's self-report, growth and turnover are the dimensions they know best (Chandler & Hanks, 1993). Regarding the growth measures, Wiklund (1999) considered them more suitable to portray the performance of small businesses, with sales growth being the best measure of growth, and employment growth an important measure, while the growth in asset investments seems to be problematic.

It should also be considered that the explanatory variables corresponding to the construction characteristics of the entrepreneur were captured in relation to the attitudes of the rural producer throughout life and through other businesses. This is due to the understanding that, because they are competencies intrinsic to the individual, they are independent of specific actions that can be performed at that moment. On the other hand, the constructs *Proxies* of Management Control and Performance are related to fish farming activities, as indicated at the beginning of each section of the questionnaire.

Data collection took place through a questionnaire, applied between October and November 2018. The instrument (structure shown in Figure 2) initially contains 11 questions to characterize fish farmers and their fish farms. The questions corresponding to the explanatory variables totaled 26, which used a five-point *Likert* scale for the answers. In order to evaluate whether the questionnaire fulfilled its objective, a pre-test was performed with two rural producers.

Part	Specific Objectives	Second-order constructs	First-order constructs	Explanatory Variables	Questions/ Codes	References
1	-	-	-	-	11	-
2	I) Identify the fish farmers' predominant entrepreneurial characteristics	Entrepreneur characteristics	Accomplishment	Search for opportunities and initiative	CE1 a CE5	McClelland (1987); Lenzi (2008); Schimidt and Dreher (2008); Schimidt and Bohnenberger (2009); Vilas Boas (2015).
				Persistence		
				Commitment		
				Quality and efficiency requirement		
				Taking calculated risks		
			Planning	Search for information	CE6 a CE8	
				Goal setting		
				Planning and systematic monitoring		
			Power	Independence and self-confidence	CE9 a CE10	
				Persuasion and networking		
3	II) Characterize management control proxies used as management control tools by the fish farmers;	Management Control Proxies	Planning (business plan)	Accomplishment of business plan	MCP1 to MCP3	Mehralizadeh and Sajady (2006); Sebrae (2008); Mizumoto et al. (2010); Schaefer (2012); Raifur (2013); Leite (2016); Daciê et al. (2017).
				Accomplishment of action plan		
				Use of business plan		
			Financial controls	Knowledge of cash flow	MCP4 to MCP6	
				Use of cash flow		
				Recording of production spending		
			Marketing factors	Market research	MCP7 to MCP9	
				Contact with suppliers		
				Environmental analysis		
			Personnel control	Action control	MCP10 to MCP12	
				Recruitment and selection		
				Training		
4	III) Identify the fish farmers' performance in the course of the activities	-	Performance	Sales growth	ID1	Chandler and Hanks (1993); Wiklund (1999); Haber and Reichel (2005); Brackburn and Hart (2013); Vilas Boas (2015) Leite (2016); Daciê et al. (2017).
				Profit growth	ID2	
				Increase in the number of staff	ID3	
				Increase in client satisfaction	ID4	

Figure 2. Structuring of the data collection instrument

Source: the authors (2019).

The population was determined in a non-probabilistic manner and by convenience (Cooper & Schindler, 2016), corresponding to 98 fish farmers, assisted by a technical support program in the state of Mato Grosso do Sul. This program supports rural producers from various agricultural production chains, whose method includes technical support related to the activity and management support to rural businesses.

The partnership between the researchers and the institution led to the application of the questionnaire and the achievement of a 70.4% response rate. The final sample resulted in 69 fish farms, including small producers and family fish farmers, distributed in twelve cities of that state. The questionnaires were applied presentially.

As for the representativeness of the sample, we adopted the analysis of statistical power, indicated by Cohen (1988) as "the probability of producing statistically significant results". For the calculation, the software G*Power 3.1.9 was used, employing the following parameters: effect size = 0.15; Type I error = 0.05; test power = 0.80, and highest number of predictors = 2 (latent performance variables receives two arrows in the path model), resulting in the need for 68 samples.

According to Ringle, Silva and Bido (2014), the number of predictors defines the minimum sample required in Structural Equation Modeling (SEM), with adjustments by partial least squares (PLS), used in this study.

Besides support from the analysis of statistical power, Hair Jr. et al. (2009) point out that the smallest sample size for factor analysis, a technique that in the confirmatory category is the first step of SEM, should be 50 observations. Hair Jr. et al. (2016) report that the sample size may be equal to or greater than ten times the largest number of predictors of a latent variable of the model, but they recommend that the model and data characteristics be considered.

The data were analyzed using multivariate analysis, with the structural equations modeling (SEM) technique, indicated to verify the consistency of the data *a priori* with the established constructs (Mingoti, 2005), and when the intention is to verify simultaneous relationships between different constructs (Hair Jr. et al., 2016). The software SmartPLS® (version 3.2.8) was used for this purpose. The use of SEM, with adjustments using *partial least squares*, is less sensitive to considerations about sample size and relieves the need for data normality, being more suitable for small samples in the analysis of SEM (Hair Jr. et al., 2009; Kallunli, Laitinen & Silvola, 2011).

In addition, this research focused on the mediation of constructs. According to Hair Jr. et al. (2016), the use of SEM permits the investigation of mediation and moderation, where moderation is indicated for cases in which the relationship between the exogenous and endogenous variables of the model is inconstant and depends on a third variable. Mediation is the analysis that verifies the influence of a third variable on the linear relationship between two constructs. This work verifies the influence of the variable "proxies of management control" in the linear relationship between "characteristics of the entrepreneur" and "performance", thus, the mediation was verified. Next, the results are analyzed and discussed.

4. Analysis and Discussion of Results

The data surveyed in the first part of the questionnaire, aiming to characterize fish farms and fish farmers, show that there is a predominance of male producers, that 56.5% are over 45 years old, and that the predominant education level is high school. Of the total sample, 26.1% claimed to have already been responsible for opening two other businesses and 26.1% for four or more businesses, which suggests a certain persistence of the producers in undertaking and diversifying their activities.

As for the fish farming activity, 94.2% have small production units (between 1 and 3 ha of water line) and 5.8% medium-sized (from 3.1 ha to 20 ha of water slide), none of which are large. This categorization follows Law 1.653, of January 10, 1996, which defines and regulates fish farming in the state of Mato Grosso do Sul. Regarding the production system, 81.2% use the semi-intensive system, signaling commercial production with the search for greater productivity.

In contrast, the mode and median of the management control *proxies* were mostly between 1 and 3, and the mean above 3 in only two variables (of the total of 12), indicating low presence in the sample. In the construct "performance "(with 4 variables), one variable generated a mean value superior to 3, and the frequent mode and median were equal to one, indicating that the performance of these enterprises has been low. Next, the multivariate statistical analyses will be carried out.

Before starting the SEM process, the necessary data checks were undertaken, such as the verification that there were no missing data and the normality test of the data, using the software Minitab®, attesting the non-normality of the data. The degrees of freedom were not analyzed because they are not significant in PLS (SEM, using partial least squares) as they are in SEM by maximum likelihood (Hair Jr. et al., 2009).

After estimating the model, with a standard analysis configuration in *SmartPLS*®, the analyses are arranged in two stages: first, the measurement model was examined, in which the reliability, variance extracted and discriminant validity are evaluated. The second stage is the analysis of the structural model, with the verification of the determination coefficient (R2), the predictive relevance (Q2), the effect size (f2) and the size and significance of the path coefficients, in accordance with Nascimento and Macedo (2016).

In the analysis of the measurement model (Model 1), Cronbach's alpha of the accomplishment construct was below the recommended limit (<0.7), but within the acceptable limits for exploratory research (between 0.6 and 0.7). Hair Jr. et al. (2016) mention that PLS-SEM is characterized as exploratory research, mainly used to develop theories.

As Cronbach's alpha and the composite reliability aim to verify if the sample is free from bias and if the responses are reliable on the whole, the model coefficients show this confidence. As for convergent validity, the average variance extracted (AVE) of the accomplishment (0.435) and performance (0.483) constructs were below the recommended (0.5). These coefficients are shown in Table 1 below.

Table 1

Reliability indicators and AVE

Latent Variables	*Cronbach's Alpha*	Composite reliability	Average Variance Extracted (AVE)
Accomplishment	**0.661**	0.786	**0.435**
Planning	0.743	0.855	0.664
Power	0.716	0.876	0.779
Planning (Business Plan)	0.912	0.945	0.851
Financial Controls	0.864	0.917	0.786
Marketing Factors	0.872	0.922	0.798
Personnel Control	0.974	0.983	0.950
Performance	0.762	0.783	**0.483**

Source: survey data (2019).

Also concerning the convergent validity, the factor loading of the CE2 variable (0.390) did not meet the minimum limit (> 0.5) to be considered significant (Ringle, Silva & Bido, 2014). Through these factors, also associated with the AVE coefficient of the accomplishment construct, it was decided to exclude this variable, as suggested by Ringle, Silva, and Bido (2014). The model was again estimated (Model 2) and, with the exclusion of CE2, the AVE coefficient of the accomplishment construct was 0.520; the *Cronbach's alpha* of the construct was 0.683; and the AVE coefficient of the performance construct was also high (0.491).

In Model 2, the discriminant validity by *Fornell Larcker* (1981) was demonstrated in the horizontal model. Based on the cross loadings criterion, the variable CE5 presented a higher factor loading in another construct (planning) than in the construct it corresponds to (accomplishment). All other variables present higher loadings in their respective constructs (horizontal analysis), in line with Chin (1998, apud Hair Jr. et al., 2009) and Ringle, Silva, and Bido (2014). In Table 2, the discriminant validity by cross loadings is shown.

Table 2
Discriminant validity by cross loadings – *Chin* (1998)

Explanatory Variables	Accomplishment	Planning	Power	Planning (Business Plan)	Financial Controls	Marketing Factors	Personnel Control	Performance
CE1	**0.733**	0.475	0.483	0.441	0.345	0.267	0.265	0.262
CE3	**0.806**	0.432	0.459	0.268	0.313	0.246	0.033	0.036
CE4	**0.750**	0.263	0.460	0.281	0.397	0.205	0.055	-0.022
CE5	**0.573**	0.663	0.477	0.344	0.389	0.376	0.059	-0.068
CE6	0.624	**0.832**	0.540	0.463	0.430	0.522	0.111	-0.109
CE7	0.566	**0.887**	0.509	0.510	0.499	0.564	0.233	0.016
CE8	0.384	**0.716**	0.527	0.522	0.396	0.261	0.229	0.067
CE9	0.601	0.529	**0.880**	0.419	0.467	0.190	0.092	0.109
CE10	0.562	0.604	**0.885**	0.458	0.482	0.383	0.140	-0.032
PCG1	0.383	0.520	0.437	**0.933**	0.468	0.184	0.204	-0.066
PCG2	0.504	0.553	0.491	**0.884**	0.563	0.261	0.356	0.128
PCG3	0.404	0.602	0.443	**0.950**	0.502	0.241	0.260	-0.017
PCG4	0.548	0.574	0.587	0.572	**0.914**	0.259	0.373	0.376
PCG5	0.367	0.462	0.478	0.536	**0.890**	-0.040	0.266	0.212
PCG6	0.404	0.389	0.339	0.353	**0.855**	0.138	0.305	0.263
PCG7	0.421	0.553	0.363	0.226	0.122	**0.836**	0.193	-0.011
PCG8	0.297	0.485	0.279	0.200	0.156	**0.908**	0.320	0.048
PCG9	0.330	0.480	0.239	0.246	0.109	**0.933**	0.229	0.001
PCG10	0.154	0.243	0.142	0.268	0.360	0.282	**0.991**	0.560
PCG11	0.126	0.205	0.104	0.281	0.289	0.253	**0.964**	0.582
PCG12	0.146	0.225	0.137	0.327	0.395	0.283	**0.969**	0.555
ID1	-0.011	-0.138	0.028	-0.060	0.261	-0.250	0.026	**0.578**
ID2	0.069	0.026	0.112	0.091	0.350	-0.116	0.188	**0.710**
ID3	0.077	-0.002	0.023	0.029	0.249	0.090	0.696	**0.873**
ID4	0.011	-0.050	-0.061	-0.113	0.102	0.070	0.172	**0.603**

Source: survey data (2019).

In the analysis of the structural model, the coefficients of Q^2 and f^2 were obtained in the *Blindfolding* module in SmartPLS® (Ringle, Silva & Bido, 2014), using the omission distance of 7 points. The results showed that the Q^2 of all constructs > 0 (hair Jr. et al., 2016), with a medium-high effect (f^2) of the constructs in the model (Ringle, Silva & Bido, 2014).

The R^2 coefficients appoint large effects of the structural model in all constructs, except in the "performance " construct, for which the effect is average, that is, 20% of the performance variation is triggered by characteristics of the entrepreneur and by the management control proxies. The characteristics of the entrepreneur do not foresee explanatory power (R^2), as it is the exogenous construct and precedes the other VLs in the structural model.

To analyze the size and significance of the path coefficients between the constructs, the complete model (Figure 3) is shown with the factor loadings of the measurement model and with the path coefficients of the structural model. Using the *bootstrapping* technique, it was found that all relationships between latent variables were significant, with p-values < 0.05, that is, the constructs used in the model affect one another, as previously expected and established by the hypotheses, regardless of the signal of this effect.

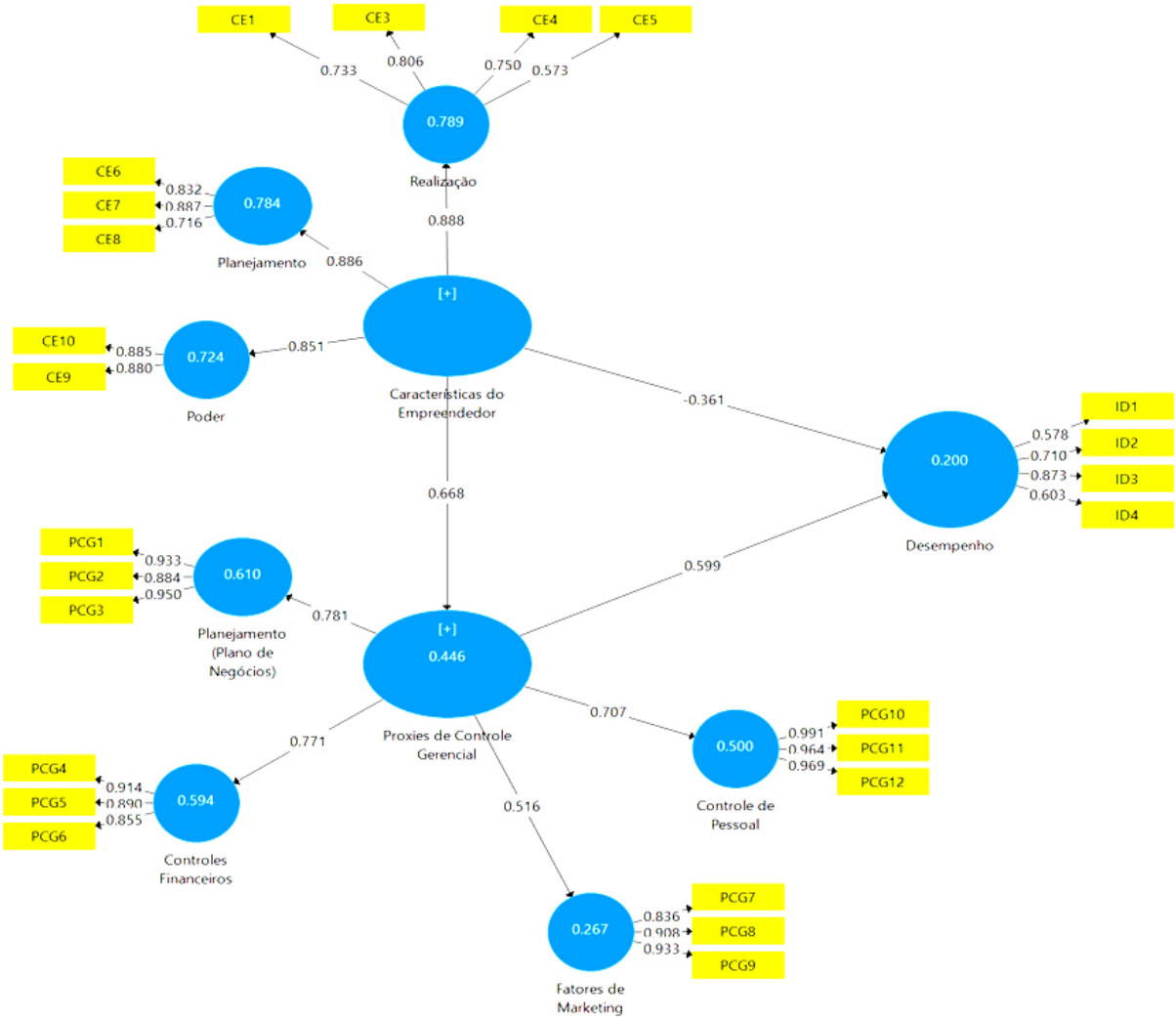

Figure 3. Model with path coefficients

Source: survey data (2019).

As the AVE indicator of the performance construct remained below the minimum limit of 0.5; the variable CE5, in the discriminant validity, presents a stronger relationship with the planning construct; and the indicator ID1 is not significant at 0.05, the model was modified, despite considering that the scope of the study is to verify the mediating effect of the management control *proxies*. The model development strategy supports this action. SEM is not only applied to test a model empirically, but also offers ideas on its respecification (Hair Jr. et al., 2009).

Theoretically, this respecification rests on the heterogeneity of the results presented in the literature, concerning entrepreneur characteristics and performance (Chandler & Jansen, 1992; Herron & Robson Jr., 1993; Carland & Carland, 1996; Lizote & Verdinelli, 2014) , and on the discussion around objective *versus* subjective, financial *versus* non-financial performance measures (Venkatraman & Ramanujam, 1986; Murphy, Trailer & Hill, 1996; Richard et al., 2009; Brito & Brito, 2012).

The alternative model (Model 3) did not only exclude the variable ID1, but also allocated the variable CE5 from the accomplishment construct to the planning construct (indicated in the cross loading criterion), in order to verify if this change would produce a better fit. The exclusion of CE2, already performed in the analysis of measurement model 1, was also maintained. The reliability and convergent validity results are presented in Table 3.

Table 3
Reliability indicators and AVE after the respecification of the model

Latent Variables	Cronbach's Alpha	Composite reliability	Average Variance Extracted (AVE)
Accomplishment	0.752	0.858	0.669
Planning	0.807	0.875	0.639
Power	0.716	0.876	0.779
Planning (Business Plan)	0.912	0.945	0.851
Financial Controls	0.864	0.917	0.786
Marketing Factors	0.872	0.922	0.798
Personnel Control	0.974	0.983	0.950
Performance	**0.640**	0.766	0.531

Source: survey data (2019).

After the exclusion of the variable ID1, the performance construct led to a reduction from 0.762 to 0.640 in the *Cronbach's alpha* coefficient, still acceptable for exploratory research. The coefficient of 0.766 for the composite reliability of the "performance " construct reinforces that these indicators are reliable. Based on all AVE coefficients and factor loadings > 0.5, the convergent validity was certified. The discriminant validity of the respecified model was expressed by the two criteria. In addition, the discriminant validity was certified by the HTMT criterion proposed by Henseler et al. (2015 apud Hair Jr. et al., 2016), for which the confidence interval should not include 1 in the combination of the construct, a fact evidenced by *bootstrapping*, as presented in Table 4.

Table 4

***Bootstrapping* after the respecification of the model**

Relationships between Latent Variables	Original Sample	Sample Average	Standard Deviation	T-statistics	P-values
Entrepreneur characteristics -> Accomplishment	0.772	0.768	0.074	10.381	0.000
Entrepreneur characteristics -> Planning	0.879	0.884	0.028	31.012	0.000
Entrepreneur characteristics -> Power	0.853	0.853	0.033	25.890	0.000
Entrepreneur Characteristics -> Management Control Proxies	0.665	0.668	0.057	11.627	0.000
Entrepreneur Characteristics -> Performance	-0.364	-0.390	0.130	2.797	0.005
Management Control Proxies -> Planning (Business Plan)	0.779	0.778	0.063	12.447	0.000
Management Control Proxies -> Financial Controls	0.769	0.775	0.055	14.003	0.000
Management Control Proxies -> Marketing Factors	0.517	0.511	0.147	3.512	0.000
Management Control Proxies -> Personnel Control	0.710	0.699	0.103	6.890	0.000
Management Control Proxies -> Performance	0.621	0.669	0.136	4.571	0.000

Source: survey data (2019).

The significance of the relationships, analyzing using the *t*-test in the Structural and Measurement model, were significant at 5% with a *p-value* < 0.05. Still comparing models 2 and 3, in the analysis of the structural model, the results (Table 5) point to a reduction in relation to model 2, in the R^2 in the constructs "accomplishment", "planning", "management control proxies", "planning"(business plan) and "financial controls". Except for accomplishment, the changes in the other constructs were very small. The R^2 of the constructs "power", "marketing factors", "personnel control" and performance" increased, that is, the structural model now represents 21.7% of the performance variation.

Table 5

Determination coefficients, predictive relevance and effect size after the respecification

Latent Variables	R^2	Q^2	f^2
Entrepreneur characteristics	-	-	0.329
Accomplishment	0.596	0.368	0.332
Planning	0.773	0.454	0.394
Power	0.727	0.540	0.308
Management Control Proxies	0.443	0.160	0.294
Planning (Business Plan)	0.607	0.479	0.610
Financial Controls	0.592	0.432	0.512
Marketing Factors	0.268	0.187	0.531
Personnel Control	0.504	0.446	0.760
Performance	0.217	0.079	0.159

Source: survey data (2019).

Table 6 shows the direct, indirect and total effects of the respecified model. For the direct and indirect relationships, the variation was inexpressive, so that the total effect of entrepreneur characteristics on performance corresponds to 4.9% (direct -36.4% and indirect 41.3%), a variation of 1% in relation to model 2. The direct effect of entrepreneur characteristics on the use of management control proxies was 66.5%. On the other hand, the effect of management control proxies on performance was 62.1%.

Table 6

Direct, indirect and total effects of the respecified model

Relationships between Latent Variables	Direct Effects	Indirect Effects	Total Effects
Entrepreneur characteristics -> Accomplishment	0.772	0.000	0.772
Entrepreneur characteristics -> Planning	0.879	0.000	0.879
Entrepreneur characteristics -> Power	0.853	0.000	0.853
Entrepreneur Characteristics -> Management Control Proxies	0.665	0.000	0.665
Entrepreneur Characteristics -> Planning (Business Plan)	0.000	0.519	0.519
Entrepreneur Characteristics -> Financial Controls	0.000	0.512	0.512
Entrepreneur Characteristics -> Marketing Factors	0.000	0.344	0.344
Entrepreneur Characteristics -> Personnel Control	0.000	0.472	0.472
Entrepreneur Characteristics -> Performance	-0.364	0.413	0.049
Management Control Proxies -> Planning (Business Plan)	0.779	0.000	0.779
Management Control Proxies -> Financial Controls	0.769	0.000	0.769
Management Control Proxies -> Marketing Factors	0.517	0.000	0.517
Management Control Proxies -> Personnel Control	0.710	0.000	0.710
Management Control Proxies -> Performance	0.621	0.000	0.621

Source: survey data (2019).

Some considerations deriving from these effects will be taken up later. As the respecified model met the adjustment problems indicated earlier, it was used in the subsequent analysis in order to achieve the overall objective of the research.

4.1 Mediation Analysis of Management Control Proxies

To verify the mediation, Hair Jr. et al. (2016) point out that a series of analyses are necessary. The first step is to verify whether the indirect effect between the independent variable *(IV)* and the dependent variable *(DV)* is significant through another construct (mediator variable - *MV*). Another step is to evaluate the direct effect: if it is not significant through a significant indirect effect, it indicates that the mediation is indirect. If the direct effect is significant as well as the indirect effect, one can distinguish between complementary mediation (significant direct and indirect effect with the same direction) or competitive (significant direct and indirect effect with opposite directions).

Thus, the authors explain, based on Zhao, Lynch and Chen (2010), that a non-mediation is postulated when, in the model in which all constructs are present, the direct effect between the latent exogenous and endogenous variable is significant, but the indirect effect is not, or when neither the direct nor the indirect effect are significant. In the model of this research, both the direct (t = 2.797) and the indirect effect (t = 4.288) are significant.

Proceeding with the analyses, Hair Jr. et al. (2009) describe a series of four steps to conduct a mediation analysis. The steps will be described, using the constructs of this research (Figure 4) and, then, the analyses are discussed.

Check:	
1st	a) If entrepreneur characteristics are related to performance (significant correlation); b) If entrepreneur characteristics are related to management control proxies (significant correlation); c) If management control proxies are related to performance (significant correlation);
2nd	If the relationship between entrepreneur characteristics and performance remains significant and unchanged when the construct of proxies is included in the model, then the **mediation is not sustained**;
3rd	If the relationship between entrepreneur characteristics and performance remains significance, but its effect decreases when the construct of proxies is included in the model, then the **mediation is partial**;
4th	If the effect between entrepreneur characteristics and performance is small, so that it is not significantly different from zero, then the **mediation is complete**.

Figure 4. Mediation analysis stages

Source: the authors (2019).

For the mediation analyses, as displayed in Figure 4, the verification tests were applied. To perform the proposed test, the data need to be run in pairs of constructs, as the second stage of the analysis suggests observing the significance of the relationship between the two constructs when the supposed "mediator" construct is inserted in the model. Figure 5 shows the results of this round using the *bootstrapping* technique, which performed 1000 resamplings of the initial sample. The coefficients of the test figures are the results of the *t*-test in order to verify the significance of the relationships (using the reference value of $t = 2{,}000$, from 60 to 120 degrees of freedom, according to distribution table *t*).

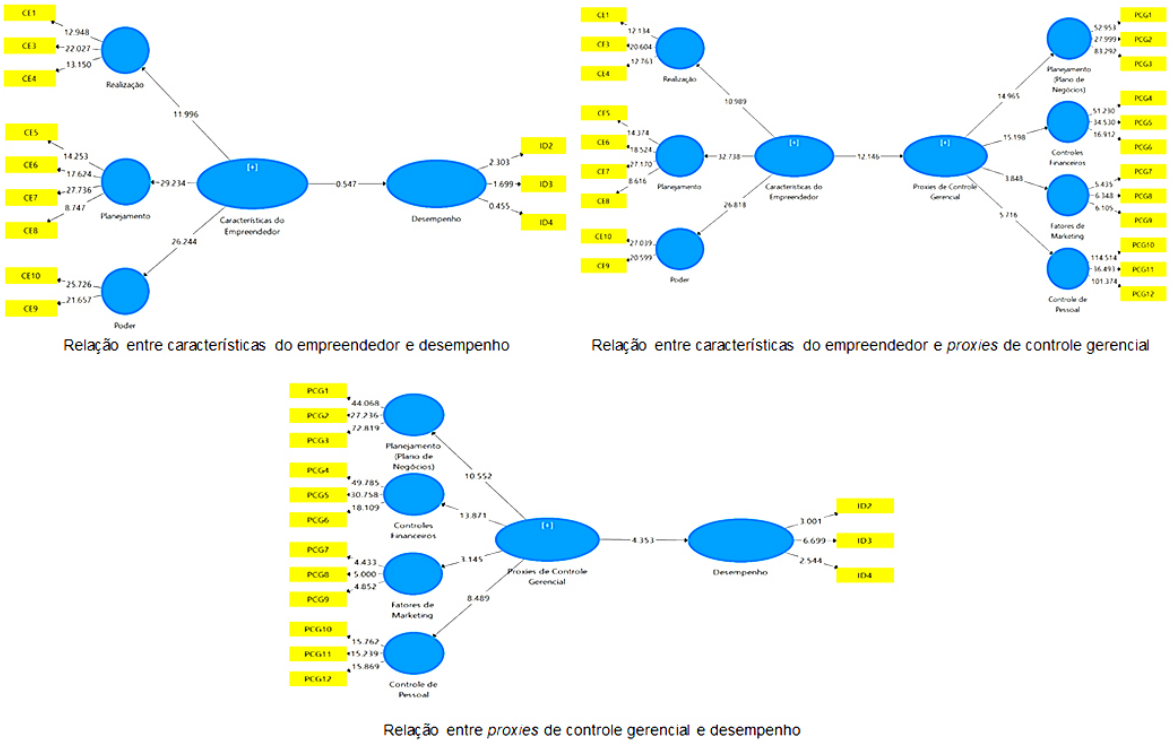

Figure 5. Test in alternative models without mediation.

Source: survey data (2019).

The illustration indicates that the direct relationship between entrepreneur characteristics and performance showed not to be significantly correlated (t=0.547). In the analysis of the other two relationships (entrepreneur characteristics X management control proxies; management control proxies X performance), both were significant at 5%. The path coefficient signaled the influence of proxies on the performance in 40.9% without the presence of entrepreneurial characteristics.

Based on the four steps presented by Hair Jr. et al. (2009), it is observed that: the relationship between *IV* and *DV* changes when *MV* is present, becoming significant. If it remained without a direct correlation, but with an indirect correlation, the mediation would be complete as indicated in the fourth step of Figure 4. Hair Jr. et al. (2016) mention that the classification of indirect mediation by Zhao, Lynch and Chen (2010) is similar to the concept of complete mediation by Baron and Kenny (1986). Complementary mediation and concurrent mediation coincide with partial mediation, also according to Baron and Kenny (1986).

The path coefficients between the constructs in the complete model demonstrate that the direct effect of *IV* on *DV* is negative (- 0.364) and that the indirect effect is positive (0.413), indicating concurrent mediation. Based on these results, it can be concluded that the management control proxies construct acts as a partial and concurrent mediator in the relationship between characteristics of the entrepreneur and performance, as its presence in the relationship not only generates direct significance between them but also produces a greater and positive effect, albeit indirectly (Table 6).

Therefore, in order to discuss the results of the study, the hypotheses raised are verified, exposed in Figure 6 below.

	Hypotheses	Result
H1	The characteristics of the entrepreneur influence the performance positively.	Rejected
H2	The characteristics of the entrepreneur influence the use of management control proxies positively.	Not Rejected
H3	The use of management control proxies influences the performance positively.	Not Rejected
H4	The management control proxies act as positive mediators in the relationship between characteristics of the entrepreneur and organizational performance.	Not Rejected

Figure 6. Results of research hypotheses

Source: the authors (2019).

When investigating the relationship between accomplishment, planning, power and performance, Lizote and Verdinelli (2014) found a significant relationship with performance of only six of the ten characteristics addressed in Empretec. Among these, "search for opportunities and initiative" and "demand for quality and efficiency" were negatively related to performance. Thus, the direct negative relationship between entrepreneur characteristics and the performance of the enterprises, with the rejection of H1, corroborates some results found in Lizote and Verdinelli (2014).

On the other hand, it goes against other studies such as Fontenelle & Hoeltgebaum (2006); Man, Lau & Snape (2008); Veit & Gonçalves Filho (2008); Eravia, Handayani & Julina (2015); Lizote and Verdinelli (2015); Daciê et al. (2017). This rejection of H1 is related to a significant presence in the sample of entrepreneurial characteristics and low performance (identified by the central trend measures), evidencing that other factors influence this relationship, as weighted by Rauch et al. (2009) and Spillecke and Brettell (2013).

As appointed by Herron and Robson Jr. (1993), some studies have obtained significant associations between the two constructs, but not in others, also alerting about the consideration of the entrepreneur characteristics, more than any other factor, on the success of an enterprise. These differences may be related to the research samples and to the questioning of whether in fact there is a sublime personality that relates to performance (Gartner, 1989; Kerr, Kerr & Xu, 2018).

Regarding H2, H3 and H4, the results are in line with Leite (2016) and Daciê et al. (2017), where they identified what characteristics of the entrepreneur positively influence the use of management control proxies. Similarly, these proxies generate a positive influence on performance, and management controls enhance the effect of entrepreneurial characteristics on performance.

Although these entrepreneur characteristics (accomplishment, planning, and power) did not have a direct positive relationship with performance, they demonstrated a positive influence through the use of management controls, indicating its contribution to organizational performance (Bomfim & Torkomian, 2017).

The fact that management controls explain 62.1% of the performance reinforces the conception that these are important for micro and small companies (Santos, Dorow & Beuren, 2016), indicating the need to be applied with greater commitment and evidencing that entrepreneurs also need to act objectively (Fillion, 2000). The relationship between the entrepreneur characteristics and the management control proxies agree with the mention in Roper (1998) that control and management are substantially related with these characteristics.

5. Final Considerations

The relevance of the management controls for organizations and their role in their performance are represented by a homogeneous area in the literature. The relationship between entrepreneurial characteristics and performance also present heterogeneous results in research that investigated it though, and the literature on entrepreneurialism is multifaceted. This arouses the question whether these characteristics are truly valuable to the enterprises.

The objective of the empirical contribution is to show the role of entrepreneurial characteristics (not addressed thus far by the technical support) and their relationship with the other constructs proposed, in order to support the development for fish farming in the state of Mato Grosso do Sul, where the production still meets many obstacles. The negative direct influence of entrepreneur characteristics on the performance of the business arouses questions though.

This research confirmed that the use of management control proxies is another determining factor in the development of fish farming, just like it is for companies from other economic sectors. This situation is due to the fact that these proxies directly and positively influence the performance of these organizations in 62.1%, in the presence of entrepreneurial characteristics, and also act as mediators in this relationship.

The respecification of the model, through the model development strategy: excluded the persistence variable, allocated the variable taking calculated risks to the latent variable planning and excluded the performance indicator sales growth. For the sake of future research, this new model could be applied in other samples, as recommended by Hair Jr. et al. (2009), arousing a reflection on the entrepreneurial characteristics model used in Empretec: should it be reconsidered?

Given the relationship between the constructs of the model, these variables should be addressed with greater effort in other small fish farms, as is the case of the research sample, and it is also interesting to include other variables that can explain this performance. In this study, the qualitative aspects of these interactions were not explored. Future studies could investigate the reasons why these entrepreneurial characteristics of the fish farmers negatively influence the performance of the fish farming activity.

The study came with some limitations, such as the size of the sample and its non-probabilistic and convenience-based characteristic, which makes generalizations impossible. Another limitation is due to the fact that the construct **entrepreneur characteristics** was obtained through a pre-existing model, Empretec, so no hypotheses and analyses on the subconstructs accomplishment, planning, and power were formulated. In time, a simplified research report was provided to the technical support company.

References

Ahmad, K., & Zabri, S.M. (2015). *Factors explaining the use of management accounting practices in Malaysian medium-sized firms*. *Journal of Small Business and Enterprise Development*, 22(4), pp. 762-781. Doi: https://doi.org/10.1108/JSBED-04-2012-0057

Bomfim, E.M.C., & Torkomian, A.L.V. (2017). Características empreendedoras associadas ao desempenho de micro, pequenas e médias EBTs do setor de TIC em Ribeirão Preto. GEPROS. Gestão da Produção, Operações e Sistemas, v. 12(4), pp. 128-158. Doi: https://doi.org/10.15675/gepros.v12i4.1751

Brito, R.P. de, & Brito, L.A.L. (2012). Vantagem competitiva, criação de valor e seus efeitos sobre o desempenho. Revista de Administração de Empresas, 52(1), pp.70-84. Doi: https://doi.org/10.1590/S0034-75902012000100006

Brush, C.G., Vanderwerf, P.A. (1992). A comparison methods and sources for obtaining estimates of new venture performance. *Journal of Business Venturing*, 7 (2), pp. 157-170. Doi: https://doi.org/10.1016/0883-9026(92)90010-O

Carland, J.W., Hoy, F., Boulton, W.R., Carland, J.C. (1984). Differentiating Entrepreneurs from Small Business Owners: A Conceptualization. *The Academy of Management Review*, 9(2), pp. 354-359. Doi: https://doi.org/10.2307/258448

Carland, J.C., & Carland, J.W. (1996). The theoretical bases and dimensionality of the Carland Entrepreneurship Index. Presented to the RISE conference, and published in the Proceedings of the RISE ' 96 Conference, University of Jyväskylä, Finland, pp 1-24.

Chandler, G.N., & Jansen, E. (1992). The founder's self-assessed competence and venture performance. *Journal of Business Venturing*, 7 (3), pp. 223-236. Doi: https://doi.org/10.1016/0883-9026(92)90028-P

Chandler, G.N. & Hanks, S.H. (1993). Measuring the performance of emerging business: a validation study. *Journal of Business Venturing*, 8 (5), pp. 391-408. Doi: https://doi.org/10.1016/0883-9026(93)90021-V

Chenhall, R.H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting Organizations and Society*, 28 (2-3), pp. 127-168. Doi: https://doi.org/10.1016/S0361-3682(01)00027-7

Cohen, J. (1988) Statistical Power Analysis for the Behavioral Sciences. (2a ed.) New York: Psychology Press.

Cooper, A. (2003). Entrepreneurship: the past, the present, the future. *Handbook of Entrepreneurship Research*, pp. 21-34. Doi: https://doi.org/10.1007/0-387-24519-7_2

Cooper, D.R., & Schindler, P.S. (2016). Métodos de Pesquisa em Administração. (12a. ed.) Porto Alegre: Bookman.

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*. London: SAGE publications.

Daciê, F. do P. (2016). Os iguais se diferem? Características determinantes do uso de proxies de controle gerencial em empresas do ambiente institucional APL de confecção.. Master's Thesis in Accountancy, Federal University of Paraná. Retrieved from https://acervodigital.ufpr.br/handle/1884/42716

Daciê, F. do P., Espejo, M.M. dos S.B., Gimenez, F.A.P., & Camacho, R.R. (2017). Are similar ones different? Determinant characteristics of management toolusage within companies sharing the same institutional environment. *Rausp Management Journal*, 52 (3), pp. 341-352. Doi: http://dx.doi.org/10.1016/j.rausp.2017.05.006

Eggers, K. F., Guth, S. C., da Motta, M. E. V., Camargo, M. E., Fernandes, A. M., Prusch, R. V. F., & Tondolo, V. A. G. (2016). Empresa rural de piscicultura: criação de tilápias. *Custos e agronegócio online*, 12(4), pp. 295-309. Retrieved from http://www.custoseagronegocioonline.com.br/numero4v12/OK%2014%20tilapia.pdf

Eravia, D., Handayani, T., & Julina. (2015). The opportunities and Threats of small and médium enterprises in Pekanbaru: comparison between SMEs in food and restaurant industries. *Procedia Social and Behavioral Sciences*, 169 (20), pp. 88-97. Doi: http://dx.doi.org/10.1016/j.sbspro.2015.01.289

Fillion, L.J. (1999). Empreendedorismo: empreendedores e proprietários-gerentes de pequenos negócios**.** Tradução de Maria Letícia Galizzi e Paulo Luz Moreira. *Revista de Administração*, 34(2), pp. 5-28. Retrieved from https://www.academia.edu/1168821/Empreendedorismo_empreendedores_e_propriet%C3%A1rios_gerentes_de_pequenos_neg%C3%B3cios

Fillion, L.J. (2000). Empreendedorismo e gerenciamento: processos distintos, porém complementares. Revista de Administração de Empresas, 7(3), pp. 2-7. Retrieved from https://www.scielo.br/pdf/rae/v40n3/v40n3a13.pdf

Furtado, J. F. R. (1995). Piscicultura: uma alternativa rentável. Guaíba, RS: Agropecuária.

Fontenelle, C.J.S., & Hoeltgebaum, M. (2006). A influência do perfil empreendedor no desempenho do negócio em um rede de franquia de confecção infantil. Revista de Negócios, 11(4), pp.131-149. Doi: http://dx.doi.org/10.7867/1980-4431.2006v11n4p131-149

Frezatti, F., Carter, D.B., & Barroso, M.F.G. (2014). Accounting without accounting: Informational proxies and the construction of organisational discourses. *Accounting, Auditing & Accountability Journal*, 27(3), pp. 426-464. Doi: http://dx.doi.org/10.1108/AAAJ-01-2012-00927

Galli, L. F., & Torloni, C. E. C. (1999). *Criação de peixes*. São Paulo: Nobel.

Garg, A.K., Joubert, R.J.O., & Pellissier, R. (2004). Measuring business performance: a case study. *Southern African Business Review*,.8(1), pp.7-21. Retrieved from https://hdl.handle.net/10520/EJC91239

Gartner, W.B. (1989) "Who is an entrepreneur?" Is the wrong question. *Entrepreneurship Theory and Practice*, v. 13(2), pp. 47-68. Doi: http://dx.doi.org/10.1177/104225878801200401

Gil, A.C. (2002). Como elaborar projetos de pesquisa. (4a ed.) São Paulo: Atlas.

Govindarajan, V. (1984).Appropriateness of accounting data in performance evaluation: an empirical examination of environmental uncertainty as an intervening variable. *Accounting Organizations and Society*, 9(2), pp. 125-135. Doi: https://doi.org/10.1016/0361-3682(84)90002-3

Grégoire, D.A., Noel, M.X., Déry, R., & Béchard, J.-P. (2006). Is There Conceptual Convergence in Entrepreneurship Research? A Co-Citation Analysis of Frontiers of Entrepreneurship Research, 1981–2004. *Entrepreneurship Theory and Practice*, v. 30(3), p. 333-373. Doi: https://doi.org/10.1111/j.1540-6520.2006.00124.x

Hair Jr., J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2009). Análise multivariada de dados. (6a ed.) Porto Alegre: Bookman.

Hair Jr., J.F., Hult, D.G.T.M., Ringle, C.M., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. (2a ed.) SAGE publications.

Hartman, H. (1954). Managers and entrepreneurs: a useful distinction?. *Administrative Science Quaterly*, 3 (4) pp. 429-451. Doi: https://doi.org/10.2307/2390809

Herron, L., & Robinson Jr., R.B. (1993). A structural model of the effects of entrepreneurial characteristics on venture performance. *Journal of Business Venturing*, 8 (3), pp. 281-294. https://doi.org/10.1016/0883-9026(93)90032-Z

Hopwood, A.G. (1972). The relationship between accounting and personnel management - past conflicts and future potential. *Personnel Review*, 1(2), pp. 40-47. Doi: https://doi.org/10.1108/eb055199

IPEA. (2017). Evolução da Piscicultura no Brasil: diagnóstico e desenvolvimento da cadeia produtiva da Tilápia. Retrieved from http://repositorio.ipea.gov.br/bitstream/11058/8043/1/td_2328.pdf Junqueira, E., Dutra, E.V., Zanquetto Filho, H., & Gonzaga, R.P. (2016). O efeito das escolhas estratégicas e dos sistemas de controle gerencial no desempenho organizacional. Revista Contabilidade & Finanças, 27(72), pp. 334-348. Doi: https://doi.org/10.1590/1808-057x201601890

Kallunki, J.P., Laitinen, E.K., & Silvola, H. (2011). Impact of enterprise resource planning systems on management control systems and firm performance. *International Journal of Accounting Information Systems*, 12 (1), pp. 20-39. Doi: https://doi.org/10.1016/j.accinf.2010.02.001

Kerr, S.P., Kerr, W.R., & Xu, T. (2018). *Personality traits of entrepreneurs: a review of recent literature. Harvard Business School Working Paper*, No. 18-047. Retrieved from https://www.hbs.edu/faculty/Pages/item.aspx?num=53601.

Leite, H. de O. (2016). Desempenho de micro e pequenas empresas: um estudo a luz das características do empreendedor-gestor e do controle gerencial. Master's Thesis, Federal University of Paraná, Curitiba, PR, Brazil. Retrieved from https://acervodigital.ufpr.br/bitstream/handle/1884/42435/R%20-%20D%20-%20HELENA%20DE%20OLIVEIRA%20LEITE%20FEUSER.pdf?sequence=1

Lenzi, F. C. (2008). Os empreendedores corporativos nas empresas de grande porte dos setores mecânico, metalúrgico e de material elétrico/comunicação em Santa Catarina: um estudo da associação entre os tipos psicológicos e competências empreendedoras reconhecidas. Doctoral Dissertation, University of São Paulo, São Paulo, SP, Brazil. Doi: https://doi.org/10.11606/T.12.2008.tde-15012009-105920

Lima, E.M., Espejo, M.M. dos S.B., Pereira, C.A., & Frezatti, F. (2011). As respostas do GECON às críticas do Relevance Lost. *Revista Contabilidade Vista & Revista*,22(1), pp. 177-200. Recuperado de https://revistas.face.ufmg.br/index.php/contabilidadevistaerevista/article/view/832

Lizote, S.A., & Verdinelli, M.A. (2014). Relação entre competências empreendedoras e desempenho: um estudo em empresas prestadoras de serviços contábeis. Revista de Contabilidade e Organizações, 8(22), pp. 49-59. Doi: https://doi.org/10.11606/rco.v8i22.55605

Lizote, S.A., & Verdinelli, M.A. (2015). Relação entre competências empreendedoras e desempenho: um estudo em meios de hospedagem do ambiente rural. Desenvolvimento em Questão, 13(29), pp. 90-124. Doi: https://doi.org/10.21527/2237-6453.2015.29.90-124

Lobontiu, G., & Lobontiu, M. (2014). The owner-manager and the functional management of a small firm. *Procedia Social and Behavioral Sciences*, 124(20), pp. 552-561. Doi: https://doi.org/10.1016/j.sbspro.2014.02.519

Low, M.B., & Macmillan, I.C. (1988). Entrepreneurship: past research and future challenges. *Journal of Management*, 14(2), pp. 139-161. DOIDoi: https://doi.org/10.1177/014920638801400202

Macinati, M.S., & Anessi-Pessina, E. (2014). Management accounting use and financial performance in public health-care organisations: evidence from the Italian National health servisse. *Health Policy*, 117(1), pp. 98-111. Doi: https://doi.org/10.1016/j.healthpol.2014.03.011

Malmi, T., & Brown, D.A., (2008). Management control Systems as a package – Opportunities, challenges and research directions. *Management Accounting Research,* vol.19(4) , p. 287-300. Doi: https://doi.org/10.1016/j.mar.2008.09.003

Man, T.W.Y., Lau, T., & Chan, K.F. (2002). The competitiveness of small and medium enterprises: conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing*, 17 (2), pp. 123-142. Doi: https://doi.org/10.1016/S0883-9026(00)00058-6

Man, T.W.Y., Lau, T., & Snape, E. (2008). Entrepreneurial competencies and the performance of Small and Medium Enterprises: an investigation through a framework of competitiveness. *Journal of Small Business and Entrepreneurship*, 21(3), pp. 257-276. Doi: https://doi.org/10.1080/08276331.2008.10593424

Martins, G. de A., & Theophilo, C.R. (2016). Metodologia da investigação científica para ciências sociais aplicadas. (3a. ed.) São Paulo: Atlas.

Masakure, O., Cranfield, J., & Henson, S. (2008). The financial performance of non-farm microenterprises in Gana. *World Development*,36(12), pp. 2733-2762. Doi: https://doi.org/10.1016/j.worlddev.2007.12.005

Maziriri, E.T., & Mapuranga, M. (2017). The impact of management accounting practices (Maps) on the business performance of small and medium enterprises within the gauteng province of South Africa. *Journal of Accounting and Management*,.7(2). Retrieved from http://journals.univ-danubius.ro/index.php/jam/article/view/4018/4183

McClelland, David C. (1972). *A sociedade competitiva: realização e progresso social*. Rio de Janeiro: Expressão e Cultura.

McClelland, David C. (1987). Characteristics of successful entrepreneurs. *The Journal of Creative Behavior*, Buffalo, 21(3), pp. 219-233. Doi: https://doi.org/10.1002/j.2162-6057.1987.tb00479.x

Merchant, K.A., & Van der Stede, W.A. (2003). *Management control systems*, Edinburgh Gate: Pearson Education.

Mia, L., & Chenhall, R.H. (1994). The usefulness of management accounting systems, functional differentiation and managerial effectiveness. *Accounting Organizations and Society*, 19(1), pp. 1-13. https://doi.org/10.1016/0361-3682(94)90010-8

Mingoti, S.A. (2005). Análise de dados através de métodos de estatística multivariada: uma abordagem aplicada. Belo Horizonte: Editora UFMG.

Mitchell, F., & Reid, G.C. (2000). Editorial. Problems, challenges and opportunities: the small business as a setting for management accounting research. *Management Accounting Research*, 11(4), pp. 385-390. Doi: https://doi.org/10.1006/mare.2000.0152

Mitchelmore, S., & Rowley, J. (2010). Entrepreneurial competencies: a literature review and development agenda. *International Journal of Entrepreneurial Behavior & Research*, 16(2), pp. 92-111. Doi: https://doi.org/10.1108/13552551011026995

Mizumoto, F.M., Artes, R., Lazzarini, S.G., Hashimoto, M., & Bedê, M.A. (2010). A sobrevivência de empresas nascentes no estado de São Paulo: um estudo sobre capital humano, capital social e práticas gerenciais. Revista de Administração. São Paulo, 45(4), pp. 343-355. Doi: https://doi.org/10.1016/S0080-2107(16)30466-6

Murphy, G.B., Trailer, J.W., & Hill, R.C. (1996). Measuring performance in entrepreneurship research. *Journal of Business Research*, 36 (1), pp. 15-23. https://doi.org/10.1016/0148-2963(95)00159-X

Nascimento, J.C.H.B. do, & Macedo, M.A. da S. (2016). Modelagem de equações estruturais com mínimos quadrados parciais: um exemplo de aplicação do SmartPLS em pesquisas em contabilidade. REPEC, 10(3), pp. 289-313. Doi: https://doi.org/10.17524/repec.v10i3.1376

Obschonka, M., & Stuetzer, M. (2017). Integrating psychological approaches to entrepreneurship: the Entrepreneurial Personality System (EPS). *Small Business Economics*, 49, pp. 203-231Doi: https://doi.org/10.1007/s11187-016-9821-y

Oyadomari, J.C.T., Frezatti, F., Mendonça Neto, O.R. de, Cardoso, R.L., & Bido, D. de S. (2011). Uso do sistema de controle gerencial e desempenho: um estudo em empresas brasileiras sob a perspectiva da *resources-based view*. Revista Eletrônica de Administração, 17(2), pp. 298-329. Retrieved from https://seer.ufrgs.br/read/article/view/38527/24749

Otley, David. (1978). Budget use and managerial performance. *Journal of Accounting Research*, 16(1) pp 122-149. Doi: https://doi.org/10.2307/2490414

Otley, David. (1994). Management Control in contemporany organizations: towards a wider framework. *Management Accounting Research*, 5(3-4), pp. 289-299. https://doi.org/10.1006/mare.1994.1018

Padoveze, C.L. (1999). O papel da contabilidade gerencial no processo empresarial de criação de valor. Cadernos de Estudo USP, 21. DoiI: https://doi.org/10.1590/S1413-92511999000200003

Peake, W., & Marshall, M.I. (2017). Women's management practices and performance in rural female-owned family businesses. *Journal of Family Business Management*, 7(2), pp.134-150. Doi: https://doi.org/10.1108/JFBM-06-2016-0012

Raifur, L. (2013). Fatores determinantes de desempenho de pequenas e médias empresas da região centro-sul do estado do Paraná. Doctoral Dissertation, University of São Paulo, São Paulo, SP, Brazil. Doi: https://doi.org/10.11606/T.12.2013.tde-13032014-164618

Rauch, A., Wiklund, J., Lumpkin, G.T., & Frese, M. (2009). Entrepreneurial orientation and business performance: an assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice*, 33(9), pp. 761-787. Doi: https://doi.org/10.1111/j.1540-6520.2009.00308.x

Reid, G., Smith, J. (2002). Feature information management systems. *Financial Management*, pp.24-26. Retrieved from https://pureportal.strath.ac.uk/en/publications/the-bigger-picture-feature-on-information-management-systems

Richard, P.J., Devinney, T.M., Yip, G.S., & JOHNSON, G. (2009). Measuring organizational performance: towards methodological best practice. *Journal of Management*, 35(3). Doi: https://doi.org/10.1177/0149206308330560

Ringle, C.M., Silva, D. da, & Bido, D. (2014). Modelagem de equações estruturais com utilização do SmartPLS. *Revista Brasileira de Marketing*, 13(2), pp. 54-71. Doi: https://doi.org/ 10.5585/remark.v13i2.2717

Roper, S. (1998). Entrepreneurial Característics, strategic, choice and small business performance. *Small Business Economics,* 11, pp. 11-24. Retrieved from https://www.academia.edu/3230210/Entrepreneurial_Characteristics_Strategic_Choice_and_Small_Business_Performance

Santos, V. dos, Dorow, D.R., & Beuren, I.M. (2016). Práticas gerenciais de micro e pequenas empresas. *Revista Ambiente Contábil*, 8(1), pp. 153-186. Retrieved from https://periodicos.ufrn.br/ambiente/article/view/7271/6032

Silva, M.A.O.M. da, Gomes, L.F.A.M., & Correia, M.F. (2009). Cultura e orientação empreendedora: uma pesquisa comparativa entre empreendedores em incubadoras no Brasil e em Portugal. *Revista de Administração Contemporânea*, 13(1), pp. 57-71. https://doi.org/10.1590/S1415-65552009000100005

Spillecke, S.B., & Brettel, M. (2013). The impact of sales management controls on the entrepreneurial orientation of the sales department. *European Management Journal*, 31(4), pp. 410-422. Doi: https://doi.org/10.1016/j.emj.2012.07.002

Tomei, P.A., & Souza, D.A.A.L.A. (2014). Análise das barreiras que dificultam a transformação do agricultor familiar em empreendedor rural no contexto brasileiro. *Revista Ibero-Americana de Estratégia*, 13(3), pp.107-122. Doi: https://doi.org/10.5585/riae.v13i3.2073

Veit, M.R., & Gonçalves Filho, C. (2008). O perfil do potencial empreendedor e seu impacto na gestão dos pequenos negócios. *Rev. Ciênc. Admin., Fortaleza*, 14(2), pp. 324-337. Retrieved from http://hp.unifor.br/pdfs_notitia/2501.pdf

Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in strategy research: a comparison of approaches. *The Academy of Management Review*, 11(4), pp. 801-814. Doi: https://doi.org 10.5465/AMR.1986.4283976

Zampier, M.A., & Takahashi, A.R.W. (2011). Competências empreendedoras e processos de aprendizagem empreendedora: modelo conceitual de pesquisa. *Ebape*, 9, (ed. esp.), pp.564-585. https://doi.org/10.1590/S1679-39512011000600007

Wiklund, J. (1999). The sustainability of the entrepreneurial orientation—performance relationship. *Entrepreneurship Theory and Practice*,24(1), pp. 37-48. https://doi.org/10.1177%2F104225879902400103