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The Value-Generating Capabilities of Controllership

ABSTRACT

Objective: To propose controllership as a capability that generates value for organizations, based on the study of the evolution of its organizational functions, bringing them together in the form of capabilities and presenting the impact on organizational performance.

Method: Quantitative, designed in two stages, an exploratory stage that is based on the conceptual model of controllership capabilities, and another of a descriptive nature, based on multivariate statistics and a measurement scale proposing hypotheses of relationship with organizational performance from a sample of 120 companies.

Originality/Relevance: The study brings together two different theoretical bodies in their theme – controllership and strategy – and it proposes in an unprecedented way the analytical, planning, and control capabilities, as controllership capabilities, testing their relationships as organizational performance.

Results: The results of the study support controllership capabilities and demonstrate the value creation of these capabilities through their positive and significant relationship with organizational performance.

Theoretical/Methodological contributions: The expansion of the concept of controllership for strategic management and for the generation of value for organizations, going beyond the contribution restricted to the accounting and financial scope.

Keywords: Controllership; Strategy; Resource-Based View; Capabilities; Performance.

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1 INTRODUCTION

The requirement of the competitive environment has elevated the organizational function of controllership from a medium activity to a spectrum of support for managers in their decision-making and strategies (Färm & Jönsson, 2018; Lindqvist & Matson, 2019). The competitive environment also stimulated the evolution and performance of controllership functions, which emerge from the occupation of an initially tactical space, to a space of strategic support in the organization (Financial Executive Institute [FEI], 2017). These changes lead to the emergence of some gaps in the study of controllership, mainly in relation to its concepts, functions and artifacts (Cavichioli, Santos, Vesco, & Fiirst, 2020) and also on the value of controllership's strategic support, which addresses from accounting management, through planning and impacts on performance (Amorim & Silva, 2019).

Controllership as a "business partner" (Lunkes, Schnorrenberger, Rosa, & Alexandre, 2016), acts in the preparation of planning, organizational control and even in the modeling of the performance information system (Bostan, Bîrcă, Țurcanu & Sandu, 2018; Rikhardsson & Yigitbasioglu, 2018). They are more than functions performed, they are capabilities because they require superior skills to form and manage resources. The capability attributed to controllership is considered by theory as a competence and ability to generate value, from a set of resources, sustainability, and versatility (Mills, Platts, Bourne, & Richards, 2002). The segmentation of some of the controllership functions, gathered in the form of capabilities, can also be understood under the concept of asset co-specialization, in which assets need to be used together with other assets, which already belong to the organization (Teece, 2018) and also generate value. The analysis of the impact of the value of controllership support on organizational performance is now supported in the form of capabilities that bring together the functions of support for strategic movements (Bieńkowska & Tworek, 2021).

In view of these aspects, the following question that guides this article is proposed: How did the controllership functions evolve to strategic support and impact the organization's performance? Therefore, the objective of this study is to analyze how the controllership functions evolved to strategic support and impact the organization's performance. To this end, it is appropriate to resort to an analysis of the different functions of controllership from a strategic focus (Nevries & Paine, 2017; Pinheiro, Vasconcelos, Segura, & Santos, 2020). Thus, the segmentation of controllership functions is proposed, aligned with the theory of capabilities and entering into concepts in strategy that are based on the value that controllership can produce (Färm & Jönsson, 2018; Lindqvist & Matson, 2019). Capabilities theory recognizes that the possession and orchestration of resources can influence a company's routines and, as a result, affect its market position and performance (Wang & Ahmed, 2007).

The relevance of the study to science lies in proposing the grouping of controllership functions in the form of value-generating capabilities. Another point of relevance for science is the result of the analysis of the different functions of controllership that culminate in the proposition of a scale of controllership capabilities and that evaluates the organizational performance. The scale presented and validated to measure these capabilities still has exploratory characteristics and, even with some limitations pointed out in the study, opens a promising field for future research.

The contribution to knowledge reveals an unprecedented study that proposes analytical, planning, and control capabilities, which reinforces the perception of the evolution of controllership's functions towards a more strategic support approach, which, through the tested hypotheses, are present in the results, which, in addition to validating the proposed scale, point to evidence of the impacts of controllership capabilities on the performance of organizations. It



is a quantitative study structured in two distinct phases. In the first phase, of an exploratory nature, based on the literature, the conceptual model is developed through the study of scope and a scale to measure capabilities. The second phase, quantitative and descriptive, assesses the reliability of the controllership capability scale and verifies, through hypothesis testing, its impact on organizational performance.

After gathering the elements that motivated the development of the article, the other chapters contemplate the discussion of the theoretical framework approaching the functions of controllership, controllership as a value-generating capability, and the proposition of the theoretical model. The methodological procedures performed are subsequently presented and the results discussed, ending with final considerations and bibliographic references.

2 THEORETICAL FRAMEWORK

2.1 Controllership functions

The updated literature on controllership functions has progressively evolved from a more tactical or operational approach to a more strategic approach, expressed in strategic support (Färm & Jönsson, 2018; Lindqvist & Matson, 2019) and decision-making support (Lourensi & Beuren, 2011). The conceptual structure of controllership is composed of the functions of informational support, internal control, tax planning, budget preparation, and operational measures, which began to act in support of the formulation of strategies (Lunkes *et al.*, 2016; Bostan *et al.*, 2018).

Although these are functions that refer to different roles that can be assigned to management control, the variations in controllership functions can be explained by variables such as the size of the organization, the uncertainty of the environment (Byrne & Pierce, 2018; Rieg, 2018), the purpose of its constitution and the management bias (Lunkes *et al.*, 2016). Therefore, the study of controllership functions is a non-pacified topic, because there are contrasts between the more repetitive tasks and those with a more strategic content (Rieg, 2018). The debate that refers to the functions of controllership is not yet exhausted, some gaps persist in the research on the functions of controllership, including the positions of controllership in the organizational chart of organizations, resulting from the interpretations of managers about the exercise of these functions (Byrne & Pierce, 2018).

Despite the disagreements regarding the functions of controllership and its position in the organization, in Lunkes *et al.* (2016) and Rieg (2018) there is convergence around the understanding of controllership, by bringing together a spectrum of functions, which they started to subtitle as "bean counter" or "business partner". For Lunkes *et al.* (2016), these two concepts are antagonistic. The assignment of a business partner encompasses planning and control, information system modeling, and people management, and collides with the bean counter, which encompasses traditional controllership functions (Sartoratto, Lunkes, & Rosa, 2016).

The status of business partner attributed to controllership involves the performance of support tasks, with a more strategic and less tactical character, which go beyond traditional functions. These are the functions aimed at supporting decision-making in the company, with a proactive stance and strategic vision of the organization, with the management of the information system, coordination of the preparation of the strategic plan, and support for team management (Lunkes *et al.*, 2016). The results of the studies by Lunkes *et al.* (2016) have been endorsed by institutions such as the FEI (2017), as they demonstrate a common understanding of the various roles that controllership can assume in the organization.



The functions performed by controllership can be grouped into three sets: (i) informational support, (ii) planning, and (iii) control, such as those proposed by Lunkes, Rosa, Gasparetto and Baldoino (2011) and Bostan *et al.* (2018). The position of these authors indicates that there was an evolution of operational and tactical functions to support the more strategic functions. Support for more strategic functions is presented in the form of structured information of value to management. One of the examples of this value support is structured information support (Lunkes *et al.*, 2016). It derives from an organization's need for qualified and reliable information on the maintenance of organizational economic balance, in order to provide better decision-making at a strategic level. The information is substantiated by the transversal and dynamic movement across the departments, which gives one a broad knowledge of the organization, distinguished by the economic bias (Hartmann & Maas, 2011; Schmidt & Santos, 2016).

The subsidy provided by controllership through informational support has evolved to transform descriptive analyses into predictive and prescriptive analyses and consists of support for the formation of the strategy, employing analytical and business capabilities (Pavlatos, 2018). However, to better explain what stimulates the evolution of controllership functions, it is necessary to resort to studies in strategy. According to the theory in strategy, the demands of the environment have compelled changes that have shifted from an emphasis on accumulating resources to an emphasis on strategic and business reconfiguration and on better redirecting these resources to meet the demands of the environment (Teece, 2020). In this way, the evolution of the controllership functions and their variations begins to be clarified. They result from their performance on the organizational structure and require adaptations to better meet, in a more predictable way, the challenges of the external environment (Rouwelaar, Bots, & Loo, 2018).

The following section addresses controllership capabilities in the light of capabilities theory, expands the debate towards studies in strategy, and seeks to connect controllership functions, in order to group them based on the concepts of capabilities and better understand the extent of this evolution that culminates in controllership capabilities capable of generating value.

2.2 Controllership: value-generating capability

Controllership can be considered a peculiar resource of the organization. Inadvertently, controllership can be described as a rare, valuable, and difficult to imitate resource (Barney, 1991), which can also follow the hierarchical structure of resources (Mills *et al.*, 2002; Winter, 2003). However, when updating the evidence from studies on changes in controllership functions, restrictions incompatible with the possibility of considering controllership limited to one resource are perceived. This occurs because in the performance of its functions, the controller combines different existing or accessible resources in the organization to such an extent that they can impact its assets (Franco-Santos & Otley, 2018).

Faced with the possibility that controllership can perform functions that are capable of generating value (Färm & Jönsson, 2018) through its ability to deal with the resources available to it, it is appropriate to seek, from the perspective of the capabilities-based view, an answer to better frame these superior functions. For Mills *et al.* (2002), a resource is understood as that which, in the organization's possession, guarantees profitability, albeit temporarily. However, capability is a competence that is constituted by the ability to form, from a set of resources, value, sustainability and versatility (Mills *et al.*, 2002).

The conjunction of functions gathered in the form of capabilities demonstrates this controllership's ability to articulate other resources and generate superior value. The set of



controls and management systems used by controllership is a mere example of these capabilities, because it combines the structural mechanism of managers organic controls and the interactive control used by accounting (Bedford, Malmi, & Sandelin, 2016). But these are aspects that are the basis for the perception of the expansion of controllership functions beyond a resource. This is because controllership combines functions and resources and can advance the orchestration of assets (Byrne & Pierce, 2018; Karlsson, Kurkkio, & Hersinger, 2019). It means the ability to compose several resources, and therefore, they can be considered attributes inherent to the capabilities.

Capabilities theory deals with the concept of co-specialization among assets. Under this concept, assets need to be used together with other assets, which usually already belong to the organization (Teece, 2018). Under this logic, controllership can be considered a value-generating capability, because it is characterized by taking advantage of assets together with others, generating value. The property of adapting roles and competencies over time is an attribute of capabilities. The capabilities that hold these properties are those that have peculiar and important resources to generate change, to adapt their competencies to the requirements of organizational realities (Mills *et al.*, 2002).

Resources and capabilities are approached from the perspective of the capability-based view that comes from the Resource-Based View (RBV). The origins of the RBV date back to the seminal studies by Penrose (1959), who emphasizes that the resources in possession of the organization, with their characteristics, and their application, result in the main contributions to obtaining competitive advantage. Wernerfelt (1984) applies and extends Penrose's proposals to the field of strategy. The RBV receives the contribution of Barney (1991), who advocates that competitive advantage is obtained by the application of resources and capabilities, through the specific characteristics that are available to the organization.

However, to provide competitive advantage, resources and capabilities need to be valuable, rare, difficult to imitate, and difficult to replace. Having achieved this level, the resource package enables the organization to potentially achieve competitive advantage with superior returns compared to competitors (Peteraf & Barney, 2003). The demand for better performance in the competitive environment contributed to the evolution of controllership functions, which demonstrated its adaptation to meet these needs. This effort in its adaptation required that controllership move from an initial condition that promoted resources to reach the condition in which some of its functions become capabilities. This understanding is shared by the Chartered Institute of Management Accounting (CIMA, 2017), which observed that controllership functions extend to three specific areas of organizational management: (i) strategic, (ii) performance, and (iii) risk management.

There has been a shift from an emphasis on accumulating resources to an emphasis on strategic and business reconfiguration and resource redirection (Teece, 2020). In this way, variations in controllership functions stem from its action on the organizational structure and require adaptations to better meet, in a more predictable way, the challenges of the external environment (Rouwelaar *et al.*, 2018). These are changes in support that expand and range from informational support, to support for planning, to the exercise of controls (Bostan *et al.*, 2018; Lunkes *et al.*, 2011).



Controllership

Functions	Grounding	Capabilities	
Analysis Information	Management systems equipped with formal and informal inputs, which are processed and result in the indicators used by managers to achieve defined organizational strategic objectives (Bostan et al., 2018).	Analysis	
Knowledge	Market analysis, environmental analysis, conjunctural analysis, and scenario projection (Padoveze, 2012).		
	Development of planning and performance management systems, in order to help managers in formulating the organization's strategy (Bostan et al., 2018; Rikhardsson & Yigitbasioglu, 2018).		
Internal control	Direct support for decision-making in the various sectors of the organization		
Management Planning	(Intertionaler Controller Verein [ICV] & International Group of Controlling [IGC], 2013).	. .	
Decision Support	It seeks to make sense of certain project choices or action alternatives and controls the trajectory of the process of new development projects and their impact on organizational strategies (Harris, Northcott, Elmassri & Huikku, 2016).	Planning	
	Management and coordination of strategic capital investment projects, even their work with the management and corporate policies bureau (Karlsson, Kurkkio, & Hersinger, 2019).		
	Control of the budget planning and execution process. Compliance with the organization's standards, policies and procedures (Lunkes et al., 2016).		
Sustainability Asset Control	Systemic view of competence to better analyze the determinants and consequences of managers' operational decisions and improve the understanding of how managerial decisions influence costs (Banker, Byzalov, Fang, & Liang, 2018).	Control	
	Recognition and appropriation of intangibles, even though they may, on occasion, deny the ontology of controllership, based on objectivity, facticity and singular accounting representations of the underlying reality (Franco-Santos & Otley, 2018).		

Figure 1. Controllership Functions, Grounding, and Capabilities

Capabilities theory helps to understand the evolution of controllership functions, as it starts from the premise that some superior functions ascended and met the principles of cospecialization of assets (Teece, 2018) and also the prerogative of Mills *et al.* (2002), in which the capabilities that hold the properties of adapting their functions and competencies over time, to adapt them to the requirements of organizational realities, can be treated as capabilities. In addition to this understanding, when comparing the studies by Lunkes *et al.* (2016), Rieg (2018), and Bostan *et al.* (2018), which refer to functions of a strategic nature, it is possible to gather a set of related functions constituting three controllership capabilities: informational support (adjusted for analysis), planning, and control. In addition to the aforementioned authors, others also addressed evidence of the evolution of controllership functions. Figure 1 seeks to synthetically present the contribution of some of these authors and their rationale, being the results of the scoping study that supports the development of the conceptual model.



Once the functions are gathered around their respective capabilities, it is possible to propose a theoretical measurement model that allows drawing connections with organizational performance.

2.3 The theoretical measurement model

The theoretical basis leads to the development of three hypotheses that seek to support the proposition of the theoretical measurement model.

2.3.1 Hypothesis 1: Relationship between the Controllership Analytical Capability and Performance

The analysis capability consists of grouping controllership activities on the processes of detecting and exploiting opportunities and looking closely at the business model (Karlsson *et al.*, 2019). When interacting with users of managerial accounting information, controllership engages and learns more about various business units (Hartmann & Maas, 2011). This provides the generation of value, translated into a substrate of information that is permanently purified by controllership. It is an activity that originates in the processing of management systems and results in indicators offered to managers to support the achievement of defined strategic objectives (Bostan *et al.*, 2018) that impact on the business model.

The impact on the business model has repercussions on support for the evolution of research and development in the organization, by generating structured information from the monitoring of management accounting systems, which accompany changes in the environment (Rikhardsson & Yigitbasioglu, 2018). Controllership environmental analyses are strategic support tasks that begin with the analysis of forces in the internal environment and include planning, control, performance measurement, transaction processing, and reporting support (Rikhardsson & Yigitbasioglu, 2018). In addition to the structured information that supports the development of the business model through reports, there are impacts on market analysis, environmental analysis, conjunctural analysis, and scenario projection (Padoveze, 2012).

Market analysis with a predictive character of controllership generates value because controllership listens to the environment, and detects and calibrates opportunities and threats. It relies on the use of activity-based costing monitoring instruments (Rikhardsson & Yigitbasioglu, 2018), activity-based management (ABM), balanced scorecard (BSC), benchmarking, target costing (TC), etc. (Rikhardsson & Yigitbasioglu, 2018). Based on statistical data, controllership activities are pragmatically directed towards strategic monitoring and seek to subsidize and identify target market segments, focusing on current and future customer needs and changes in the market (Färm & Jönsson, 2018; Schmidt & Santos, 2016). From these notes stems the first hypothesis of this study:

H1: There is a positive and significant relationship between the Controlling Analytical Capability and Organizational Performance.

2.3.2 Hypothesis 2: Relationship between the Controllership Planning Capability and Performance

Controllership's planning capability consists of the guidance provided for matters related to the contribution of investments capable of enabling strategies related to organizational projects. The planning capability, in addition to guiding the investment, constitutes the embryonic nucleus that will support the formation of organizational projects by helping to set up, analyze, and sustain the business (Harris, Northcott, Elmassri, & Huikku, 2016). They are



complementary functions of controllership that rely on the analysis of the return of these investments, evaluating their profitability (Färm & Jönsson, 2018).

Viability analysis reveals that controllership acts on the foundations of organizational projects. For this, in addition to the financial analysis, they foster integration and synergy between managers, promoting cooperation and unification of efforts seeking to make sense of certain project choices or alternatives of action, aiming at its impact on organizational strategies (Harris *et al.*, 2016). These are activities of the controllership's planning capability carried out through qualified advice to managers (Rieg, 2018). It aims to support profitable strategies, being responsible for the accuracy of financial reports and the integrity of internal controls (Harris *et al.*, 2016; Rouwelaar *et al.*, 2018). In addition to supporting the formation of strategic initiatives, it directs managers by distributing information that has the potential to influence decision-making, through its reports and opinions, delimiting the set of restrictions on managers' decisions (Franco-Santos & Otley, 2018).

Controllership advice to managers is based on cost forecasting (Rieg, 2018), analysis of product profitability, and financial impact in general (Rikhardsson & Yigitbasioglu, 2018). These are contributions that can impact performance through the dissemination of information and alignment between managers and the consequences of their operational decisions (Banker, Byzalov, Fang, & Liang, 2018).

From these notes, the second hypothesis of this study arises:

H2: There is a positive and significant relationship between the Controllership Planning Capability and Organizational Performance.

2.3.3 Hypothesis 3: Relationship between Controllership Control Capability and Performance

Controllership's ability to control has impacts on organizational performance due to its performance of monitoring the routines of organizational reality. Controllership supports the implementation of initiatives by monitoring and supporting change processes (Lunkes *et al.*, 2016) and acts in the management of threats that affect performance by evaluating organizational routines. Performance monitoring follows an accounting model that starts from the identification and evaluation of variables that have an impact on company results, such as the value of products, environmental and systemic factors, work processes, and tangible and mobilized intangibles, illustrated in the strategic maps available to managers (Otley, 2016; Banker *et al.*, 2018).

The accounting-financial model is a factor that favors the formation of a general framework for evaluating performance and allows for the review of results and trajectory, including monitoring the path taken by the organization and its impact on organizational strategies (Harris *et al.*, 2016). These are functions that are also aimed at the gradual formation of knowledge about organizational processes, explicitly, and especially tacitly, when referring to the formation of new knowledge disseminated to favor the work of managers (Hartmann & Maas, 2011; Yigitbasioglu, 2017).

The economic context governed by assets linked to knowledge is strategic for maintaining an organization's growth, profitability, and competitiveness (St-Pierre & Audet, 2011). They involve the ability to control that also acts in determining the stimulus for innovation initiatives, development of patents, brands, and knowledge (Schmidt & Santos, 2016).

From these notes arises the third hypothesis of this study:

H3: There is a positive and significant relationship between Controllership Control Capability and Organizational Performance.



Figure 2 illustratively brings together the hypotheses of this study. It is based on the proposition of hypotheses and on the systematization of controllership functions, now gathered in the form of their capabilities, for analysis of the impact on organizational performance.

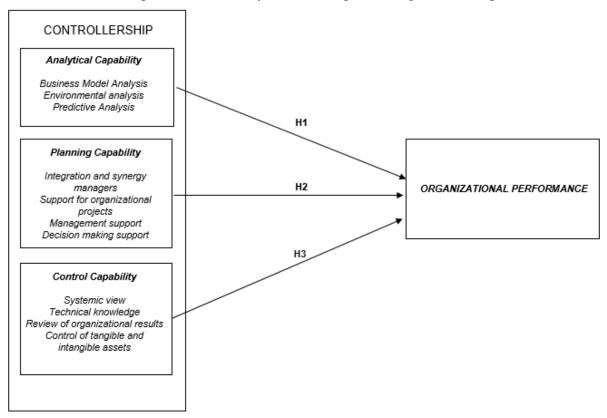


Figure 2. Theoretical model

The following section presents the research method adopted in the study.

3 METHOD

The quantitative study was carried out in two distinct phases. The first, of an exploratory nature (Flick, 2013), is based on a scoping study for the development of the conceptual model and the scale of capabilities. The scale received the contribution of the evaluation of a group of three controllers, culminating in the development of hypotheses, relating controllership capability with organizational performance.

The second descriptive phase evaluated a scale to capture the controllership capabilities, and the hypotheses developed in the theoretical model were tested. For the second phase, a survey was used with a questionnaire that was administered by telephone to a group of 120 companies. The method applied also considered the existence of missing data and outliers, the normality and linearity of the data, then the reliability of the constructs using exploratory factor analysis, confirmatory factor analysis and discriminant validity. To test the hypotheses of the theoretical model, linear regression was applied.

3.1 Data collection and sample

Data were collected between September and December 2020 through a survey. The companies surveyed were selected from the registers of the national confederation of Brazilian industry. The questionnaire was administered by telephone and applied among the controllers



of a sample of 120 companies, with 35 % of them having annual revenues between R\$4.8 million and R\$300 million and 30 % more than R\$300 million. About 70 % of them have been in the market for more than 21 years.

3.2 Measures

3.2.1 Dependent Variable (DV)

The DV is organizational performance. The EXPERF scale by Zou, Taylor and Osland (1998) was used, which stratifies performance in different dimensions. For this study, the dimensions of financial performance (FP) and strategic performance (SP) were used. These are dimensions that best capture the respondents' perception of the impacts of controllership capabilities. Performance is captured on a 5-point Likert-type agreement scale. In the study, the scale was adapted so that respondents focused on the last three years of results as a benchmark for evaluating performance.

3.2.2 Independent Variables (IV)

The IV are composed of the three proposed controllership capability dimensions: Analytical Capability (AC), Planning Capability (PC) and Control Capability (CC). For each of these dimensions, indicators constructed from the theoretical framework were proposed. The scale was initially evaluated by a group of three controllers so that the terms could be adjusted to the operational reality of the companies. Then, a pre-test was carried out with 40 companies for a quantitative validation of the scale. The scale can be found in the Appendix. For measurement, a 5-point Likert scale of agreement was adopted.

3.2.3 Control Variables (CV)

The control variables are the experience and size of the companies. Experience was used as a proxy and may suggest greater learning and accumulated knowledge; and size, measured by revenue (Sebrae, 2021), represents the company's possession of resources and capabilities. The larger the size, the greater access to resources and greater potential for capability development (Musteen, Francis, & Datta, 2010).

4 RESULTS AND DISCUSSION

4.1 Data treatment

The first step was to check the quality of the data collected. The existence of missing data and outliers, the normality, and linearity of the data were evaluated. Only three variables with missing values were found, which as they were random and reduced episodes, were replaced by the average of the variable, complying with the precept of Hair, Black, Babin, Anderson, and Tatham (2009). No outliers were identified. The data showed normality (Kline, 2011) and the dependent and independent variables proved to be linear (verified by graphic inspection).

The reliability of the constructs used was subsequently verified: Analytical Capability, Planning Capability, Control Capability, Financial Performance, and Strategic Performance.



4.2 Reliability of constructs

The development of the controllership capability scale had an exploratory character. Initially, a set of 21 indicators was proposed in a planned way to compose the three dimensions (analytical, planning, and control) defined based on the theoretical framework. After collection, the data were analyzed using Exploratory Factor Analysis. The factors were extracted by the principal components method and the rotation by the Varimax method. Three factors resulted: Analytical Capability (4 indicators); Planning Capability (4 indicators); Control Capability (4 indicators).

Convergence of the constructs was verified through Composite Reliability (CR) and Extracted Variance (EV). CR and EV are precision indicators associated with measurement quality (Hair *et al.*, 2009). Table 1 presents the factor loading of the indicators for each construct, as well as their reliability indicators.

Table 1 Reliability of controllership capability dimensions

Analytical Capability		Planning Capability		Control Capability	
Indicators	FL	Indicators	FL	Indicators	FL
AC01	0.724	PC08	0.703	CR16	0.691
AC04	0.680	PC09	0.618	CR19	0.596
AC05	0.674	PC13	0.613	CR20	0.593
AC06	0.600	PC14	0.606	CR21	0.563
CR EV	0.765 0.450	CR EV	0.730 0.404	CR EV	0.704 0.375

Note: AC – Analytical Capability; CR – Composite Reliability; FL – Factorial Load; PC – Planning Capability; EV – Extracted Variance.

For the dimensions that make up the performance construct, Confirmatory Factor Analysis was used, as it is a scale that has already been validated in several studies. Table 2 presents the obtained reliability data.

Table 2 **Reliability of the Construct Performance**

Financial Performance		Strategic Performance		
Indicators	FL	Indicators	FL	
FP01	0.829	SP01	0.800	
FP02	0.731	SP02	0.647	
FP03	0.733	SP03	0.822	
CR	0.809	CR	0.802	
EV	0.586	EV	0.578	

Note: FL – Factorial Load; CR – Composite Reliability; EV – Extracted Variance; FP – Financial Performance; SP – Strategic Performance.

Based on the understanding that this is an exploratory study, mainly in relation to controllership capabilities, the data indicate that the constructs offer adequate reliability. Composite Reliability is above 0.70 for all constructs, while Extracted Variances are above 0.50 for all performance constructs, as recommended by Hair *et al.* (2009). Only for the controlling capability constructs, the extracted variances were below 0.5, which, despite being a limitation, did not compromise the discrimination between the constructs (Table 3).



4.3 Discriminant validity

Discriminant validity analyzes how each construct is different from the others and represents how different they are. According to Fornell and Larcker (1981), discrimination is identified when the variance extracted from each construct is greater than the shared variances (square correlation) between them. Table 3 presents the results for discriminant validity.

Table 3

Discriminant Validity

	Analytical	Planning	Control
Analytical	0.450		
Planning	0.119	0.404	
Control	0.014	0.045	0.375

The results indicate the discrimination between the constructs. Based on the reliability results of the constructs, the hypotheses proposed in the study were tested.

4.4 Hypotheses test

The hypotheses were tested using linear regression. Observable variables were created for each construct from the average of the indicators that compose them. Six models were tested in order to test the hypotheses, verifying the relationship between controllership capabilities and measures of financial and strategic performance. The size and experience of the companies were controlled for. Table 4 presents the results of the regression analyses.

Table 4 **Hypotheses Test**

Lypotheses 1						
	MODEL IA	MODEL IB	MODEL IIA	MODEL IIB	MODEL IIIA	MODEL IIIB
IV	AC	AC	PC	PC	CC	CC
DV	FP	SP	FP	SP	FP	SP
CONTROL	FAT. EXP.	FAT. EXP.				
r2	0.082***	0.058*	0.091***	0.068**	0.046*	0.060*
Betas AC PC CC	0.287**	0.229***	0.221**	0.250***	0.055ns	0.233**
FAT	-0.213**	-0.037ns	-0.228**	-0.055ns	-0.230**	-0.054ns
EXP	0.096ns	0.120ns	0.106ns	0.131ns	0.081ns	0.129ns
VIF maximum	1.285	2.332	2.044	2.314	2.041	2.199
Durbin Watson	2.105	1.285	1.295	1.295	1.296	1.296

^{***}sig. 0.01. ** sig. 0.05. * sig. 0.10.

Note. AC – Analysis Capability; CC – Control Capability; PC – Planning Capability; DV – Dependent Variables; IV – Independent Variables; FP – Financial Performance; SP – Strategic Performance; FAT – Income; EXP – Experience; VIF – Variance Inflation Factor.

It should be noted that all the assumptions of the regression analysis were met. The absence of missing data and outliers was verified, the independent variables have a linear relationship with the dependent variable, the residuals are independent, there were no multicollinearity problems, and the data present normality.



4.5 Analysis of the results

The results of Models IA and IB support H1 by demonstrating that analytical capability has a positive and significant relationship with financial (0.287**) and strategic (0.229***) organizational performance. These are results linked to the analysis of the business model (Karlsson *et al.*, 2019) which, when detecting opportunities and threats (Färm & Jönsson, 2018), favors environmental analysis that monitors internal and external environments and evaluates organizational routines, based on the original controllership model, which is an accounting process by nature. The variables that have an impact on the companies' results are evaluated, such as the value of the products and the environmental and systemic factors. Environmental analysis extends to the work processes illustrated in the strategic maps (derived from the BSC) available to managers (Chenhall & Moers, 2015; Otley, 2016).

Controllership support in this capability extends to and impacts organizational results through predictive analysis. It is an analysis focused on cost estimates, with the increase of information technology (IT) tools and contributes to support the notion of complementarity between budget and controllership (Hartmann & Maas, 2011). Based on the results found in Model I, it can be said that there is a direct and significant relationship between controllership's analytical capability and organizational performance.

The results of Models IIA and IIB support H2 by showing that planning capability has a positive and significant relationship with financial (0.221**) and strategic (0.250***) organizational performance. The controllership's planning capability articulates with managers at different levels of the organization, monitoring and reporting on the performance of investment projects in higher-level management (Karlsson *et al.*, 2019). It influences the formation of strategy, because by synchronizing vital functions of the organization, it integrates strategic planning and control, aligning coordination with objectives and goals, propagating structured information and management systems, culminating in support for the decision making of the various sectors of the organization (ICV & IGC, 2013).

The exercise of management support translates into influences on the formation of organizational strategy. This happens, for example, when controllership deals with the asymmetry of information between managers. Sometimes, the CFO (Chief Financial Officer) themself is not always aware of the asymmetry in the possible projects discussed at an early stage by division managers (Harris *et al.*, 2016); however, it does not go unnoticed by the controller, which acquires a commitment with obtaining a competitive advantage.

Obtaining a competitive advantage is also associated with support for organizational projects, which refers to organizational tasks capable of leveraging assets. Controllership participates as responsible for the scrutiny and subsequent analysis about the feasibility, or not, of the investment projects. Working together with managers at different levels of the organization, controllership monitors and reports on the performance of investment projects in top-level management (Karlsson *et al.*, 2019). Support for organizational projects that include investment projects (Lunkes *et al.*, 2016) involves controllership with its studies and directed projects (Pletsch, Silva, & Lavarda, 2016). The results obtained allow us to affirm that Hypothesis 2 is supported, so that there is a direct and significant relationship between controllership's planning capability and organizational performance.

The results of Models IIIA and IIIB partially support H3, since the ability to control has a positive and significant relationship only with strategic organizational performance (0.233**), but does not show a significant relationship with financial performance. This can be explained because controllership's ability to control goes through the review of organizational results and its impact has a more direct impact on processes (Hartmann & Maas, 2011; Yigitbasioglu, 2017) and on managerial performance, rather than on indicators of financial performance measures,



proposed in the scale of Zou *et al.* (1998). The impact on the performance of control capability can possibly be better understood by reviewing organizational routines and trajectory, arising from organizational controls. This implies considering the reality and the path taken by the organization, through performance management systems, in which there is a confrontation between the assumed reality and the real state of the organization (Franco-Santos & Otley, 2018). It is the systemic view of controllership by detecting organizational anomalies, improved to monitor risks and to traverse the organization, by incorporating broader and more systemic functions, focused on the future of the organization (Vogt, Degenhardt, & Lavarda, 2017). Thus, based on the results found, it can be affirmed that Hypothesis 3 is supported. There is a direct and significant relationship between the controllership's ability to control and organizational performance.

4.6 Control variables: size and experience

The company's experience, captured throughout its time of operation, did not find a significant relationship with performance. In contrast, the revenue variable, indicating the size of the company, did not present a significant relationship with strategic performance, but contrary to what was expected, it presented a negative and significant relationship with the financial performance.

5 FINAL CONSIDERATIONS

The study presented a theme that contributed to bringing together the fields of knowledge in accounting and administration, updating the understanding of the evolution of controllership functions in the form of capabilities, using a strategic approach and demonstrating the value generated for companies. For this, a scale was developed to measure performance, considering controllership under three capabilities: analytical, planning, and control.

The obtained results evidenced the positive relationship between controllership capabilities and the companies' performance. These are elements that also help executives, responsible for controllership and strategy, to face the competitive environment through updated knowledge regarding the existence of controllership capabilities and their potential to support the achievement of superior performance. The research expands and enhances controllership's performance, in the past essentially oriented to the exercise of activities related to accounting and financial aspects, but from this study, they favor managers to deliberately improve controllership's positioning in support of strategic decisions, in view of the qualified support provided to the management areas.

As for the study and its innovative and exploratory nature, there are some limitations that must be considered. In the construction of the scale, despite the general characteristics of reliability of the controllership constructs, some factor loadings of some indicators were low. This means a high amount of measurement error in these indicators, resulting in below-recommended extracted variances. This limitation is common in exploratory studies, but at the same time it is a strong contribution to future studies that seek to improve these specific points of the scale.

Even with the mentioned limitation, the general reliability results of the constructs and, mainly, the results of the hypothesis tests were very satisfactory. The presented and validated scale, although presenting exploratory characteristics, and therefore, some limitations pointed out in the study, open a vast and promising fields for future research, such as: improving the presented scale; using objective organizational performance data; verifying the effect of other



types of control variables such as industry and, since the size of the companies resulted in a negative relationship with performance; to verify if the controlling capacity can be related to other organizational capacities that allow companies to be more dynamic to respond to adverse environments; and based on the knowledge of controllership capabilities, seek to generate value for the organization.



APPENDIX

	Controllership Scale	
	ANALYTICAL CAPABILITY	
AC1	Regularly analyzes the forces in the organization's internal environment	0.605
AC2	Constantly analyzes the situation of the organization through accounting reports	0.460
AC3	Constantly analyzes economic information for the organization's management	0.497
AC4	Analyzes the organization's internal environment	0.538
AC5	Analyzes the organization's external environment	0.436
AC6	Analyzes the organization's future scenarios and informs managers	0.513
AC7	Regularly reviews the evolution of research and development in the organization	0.642
	PLANNING CAPABILITY	
PC8	Regularly analyzes the variables that make up the budget	0.485
PC9	Disseminates structured information among managers	0.550
PC10	Assists managers in setting up organizational businesses	0.444
PC11	Constantly generates structured information used by managers	0.476
PC12	Analyzes the consequences of managers' operational decisions	0.474
PC13	Participates in the preparation of planning together with managers	0.516
PC14	Contributes to the strategic alignment between managers	0.582
	CAPABILITY CONTROL	
CC15	Collaborates in managing routines through knowledge of organizational reality	0,706
CC16	Exercises control through a mix of financial and non-financial indicators	0.583
CC17	Monitors the risks that the organization is subject to	0.430
CC18	Reviews the organization's results by performance management systems	0.413
CC19	Monitors the organization's movements by accounting models	0.458
CC20	Controls the results obtained by accounting instruments	0.632
CC21	Assists in controlling financial management	0.522
	Organizational Performance Scale	
FP22	Has been very profitable for the last three years	0.829
FP23	Has generated a high volume of sales in the last three years	0.731
FP24	Has achieved rapid growth in the last three years	0.733
SP25	Has improved our competitiveness in the last three years	0.800
SP26	Has strengthened our strategic positioning in the last three years	0.647
SP27	Our market share has grown significantly in the last three years	0.822

Source: Adapted from Zou et al. (1998).



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As Capacidades Geradoras de Valor da Controladoria

RESUMO

Objetivo: Propor a controladoria como uma capacidade geradora de valor às organizações, pelo estudo da evolução das suas funções organizacionais, reunindo-as sob a forma de capacidades, apresentando o impacto sobre o desempenho organizacional.

Método: Quantitativo concebido em duas etapas: uma exploratória baseada no modelo conceitual das capacidades da controladoria e outra de caráter descritivo, com base em estatística multivariada e uma escala de mensuração propondo hipóteses de relação com desempenho organizacional a partir de uma amostra de 120 empresas.

Originalidade/Relevância: O estudo aproxima dois corpos teóricos diferentes em sua temática – controladoria e estratégia – propõe de modo inédito as capacidades analíticas, planejamento e controle, como capacidades da controladoria, testando suas relações como o desempenho organizacional.

Resultados: Os resultados suportam as capacidades da controladoria e demonstram a geração de valor destas capacidades por meio da sua relação positiva e significante com o desempenho organizacional.

Contribuições teóricas/metodológicas: A ampliação do conceito da controladoria para a gestão estratégica e para a geração de valor às organizações, indo além da contribuição restrita ao âmbito contábil e financeiro.

Palavras-chave: Controladoria; Estratégia; Visão Baseada Recursos; Capacidades; Desempenho.

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