

Associations Among Information, Controllership Performance, Management, and Organizational Performance: an Exploratory Study

Abstract

Textbooks affirm that the Controllership area is important for decision making and management and, despite the existence of favorable theoretical arguments to consider management control as a resource that influences organizational performance (Henri, 2006), there remains a great lack of empirical studies that identify the contribution of the Controllership area to organizational performance. This article aimed to identify the relations between information sources (Mol & Birksnshaw, 2009), controllership performance, management performance, and organizational performance, based on 80 answers by controllership and finance professionals from Brazilian companies. The results, analyzed by means of the statistical technique Structural Equations Modeling, indicate that there are positive associations between the degree of obtaining information and controllership performance, and also that the latter positively affects the management performance, with a subsequent positive effect on organizational performance. The results suggest that a Controllership area that seeks knowledge in internal and external sources is able to produce good-quality and timely information, at a compatible cost and focused on projects, and is able to attend to the users' expectation. These managers, in turn, supported by effective and efficient Controllership, control and make more assertive decisions, contributing for the organization to satisfactorily achieve the organization's main objective. This study innovates by relating variables that are more linked to the role of controllership, besides operating the construct controllership performance based on the view of academics and professionals. Its main limitation is the fact that it is based on the controllership professionals' own perception.

Key words: Controllership; Performance; Information; Controllership Performance

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1. Introduction

A consensus exists that knowledge characterizes the present stage of society and that, to improve performance, organizations need to develop models that permit gaining, sharing, and disseminating knowledge throughout the organization (Nonaka & Takeuchi, 1997). In the accounting area, studies that have discussed this theme, known as knowledge management, are focused on consulting and audit companies (Morris & Empson, 1998, Vera-Muñoz, Ho & Chow, 2006), leaving aside the Controllershship area, which is not justified as, like any organizational unit, it also acquires knowledge and studies prove that knowledge positively influences the success of controllership professionals (Hunton, Wier & Stone, 2000).

From the organizational research perspective and considering that the Accounting/Controllershship professionals' work environment is the Controllershship department, it is more appropriate to measure the performance from an organizational perspective, i.e. through the performance of the Controllershship area, instead of measuring the individual success, which is coherent with the greater concern with the measuring of functional areas' performance (Chenhall & Langfield-Smith, 2007).

After justifying the matter of measuring the Controllershship area's performance, another discussion remains: **What is the actual contribution of the Controllershship area to the organizational performance?** The textbooks categorically affirm that this area is important for the management of an organization (Catelli, 1999, Garrison, Noreen & Brewer, 2007). On the other hand, empirical studies are more focused on identifying the functions of the Controllershship area (Borinelli, 2006, Lunckes, Schnorrenberger & Rosa, 2013), to the detriment of identifying that area's performance and the relations with the organizational performance, representing a research gap.

However, it is known that the functions of the Controllershship area consolidated in the literature are planning, control, elaboration, and interpretation of reports (Lunckes, Schnorrenberger & Rosa, 2013), and that the performance of the Controllershship area influences the decision process by the managers of the organization's production areas (Weibenberger & Angelkort, 2011). Therefore, the performance of the Controllershship area should not be directly related with the organizational performance.

This indirect link with the organizational performance is coherent with the perspective of the Resources-Based View, according to which the Management Control System can be classified as a resource, provided that it is used as a complement to other resources (Barney, 2007), a thesis also shared by Henri (2006).

Studying the departments is justified as strategic studies have suggested that the competitive advantage may exist at the process level, that is, in the company's routines or activities, and that their development may not necessarily be reflected in the company's general performance (Ray, Barney & Muhanna, 2004). One of these routines is the management process, which can be measured by the "management performance" construct, in line with the studies by Robertson, Baron, Gibbons, Maciver and Nyfield (2000) and Craik, Ware, Kamp, O'Reilly, Staw and Zedeck (2002), which involves a list with eight management activity dimensions (Tsui, 2001).

Therefore, there is a research opportunity to study the information sources the Controllershship area uses, and how these are associated to the area's performance, in the attempt to validate normative studies on the area's role. In addition, there is a lack of studies that relate the performance of the Controllershship area with the management performance, as the Controllershship area supports the managers with information for decision making, planning and control. Finally, from a utilitarian perspective, there is an opportunity to identify if the relation among these variables contributes for the organization to achieve its main objective, which is one way to operate the organizational performance.

In view of these foundations, this study aims to answer the following research question: **What are the relations among Information Sources, Controllershship Performance, Management Performance and Organizational Performance?**

This study is expected to contribute to the academic literature by studying a theme that has hardly been studied, considering that no research was found in which all of these constructs were studied, not even internationally related with the Controllershship area, and with the possibility to operate construct that are more related to the Controllershship area. In the practice sphere, the study is expected to contribute by providing a model that relates the main variables with a positive impact on the different performance dimensions (management and organizational).

2. Theoretical Framework

2.1 Information sources

One classification considers the information collection sources as internal, market, and professionals. Mol and Birkinshaw (2009) used and detailed these categories into Internal (inside the company, other companies from the same group), Market (Suppliers of equipment, materials, components or software, Competitors, consultants, Commercial Laboratories / Research and Development companies), Professionals (Professional conferences and meetings, Commercial associations, Technical journals, databases, Fairs and Exhibitions). This classification by Mol and Birkinshaw (2009) is coherent with the proposal by Nonaka and Takeuchi (1997) when they discuss that one of the phase of socialization is knowledge acquisition from internal as well as external sources.

In general, Mol and Birkinshaw (2009) argue that, the more information sources the companies use, the higher the level of introduction of new management practices will be. On the other hand, it should be considered that the existing paradox is characterized at the same time by a growing quantity of information with limited attention (Simons, 2000).

Different studies relate aspects of the model by Nonaka & Takeuchi with organizational performance, but always mediated by some intermediary construct. Ramirez, Morales e Rojas (2011) studied the model by Nonaka and Takeuchi (1997) and argued that the combination (capture and integration of new essential explicit knowledge, through collection, reflection and synthesis) can improve the internalization of this knowledge. The results showed that the knowledge creation and sharing process directly or indirectly influences organizational learning, and that the latter positively influences the organizational performance (Ramirez, Morales & Rojas, 2011).

2.2 Performance of Controllershship area

The Controllershship area, like any other organizational area, also needs a favorable performance assessment in relation to the different objectives outlined such as compliance with deadlines, compliance with budget area, quality in the information provided, and among others. Although the performance can be measured by the controller's degree of participation in the strategic planning (Cadez & Guilding, 2008), this construct does not cover the performance of the functional area yet. Therefore, specific performance measures have been developed to attend to management needs in different functions such as Operations, Marketing or Human Resources (Chenhall & Langfield-Smith, 2007).

For the Controllershship area, the proposal by Mouritsen (1996) can be identified, whose author studied five activities performed by the Accounting department: Registering, Consulting, Financial Management, Control and Administrative Management, but without any concern with reflecting these activities as performance. In the study by Tsui (2001), the Management Accounting Systems construct was measured with nine questions, which can also be considered as the performance of the Controllershship area, as the variables included items like punctuality of reports, predictive information, non-monetary information,

speed in information provision, probability estimates, timeliness, non-monetary information more related to competences and attitudes, information about strategic variables like technology, economy, etc.

Based on Hunton et al. (2000), according to whom the knowledge positively influences the performance, and the knowledge management process applied to the Controllershship area involves the acquisition of information, and on Ramirez, Morales and Rojas (2011), who justified the positive relation between information collection, organizational learning, and performance, the following Hypothesis 1 is raised: the degree of obtaining information is positively associated with the Controllershship Performance.

2.3 Management Performance

Different organizational competences have been established as important, but many of them can be peculiar to certain organizations. One process or routine they all share, however, is the management process, which can be characterized as a routine (Ray *et al.*, 2004). One way to measure the management performance can be through the management performance, which has been studied in the field of psychology (Robertson *et al.*, 2000; Craik *et al.*, 2002), and more recently in the field of Management Accounting (Tsui, 2001; Agbejule & Saarikoski, 2006). In general, one might say that these studies have been based on the construct of Mahoney, Jerdee and Carroll (1965).

Tsui (2001) studied the relations between budgetary participation, management accounting systems, and management performance, and analyzed their impact on the Chinese and Western cultures. The results showed that the budgetary participation negatively affected the management performance in the Chinese companies, while the opposite happened in the Western companies.

Agbejule and Saarikoski (2006) based on a survey of 83 Finnish company managers, identified that, the greater the budgetary participation and the higher the knowledge level about cost management they are, the higher the management performance it is, measured through self-perception. In that study, the management performance was measured through eight variables: Representation, Negotiation, Investigation, Evaluation, Supervision, Planning, Coordination and Support. After the factorial analysis, this construct was grouped in two: external management performance, which grouped representation and negotiation, and the others, except for investigation, which was eliminated, as internal management performance.

In line with these Management Accounting studies, but aiming to identify variables that are more related to the Controllershship area, it was identified that two main objectives of Accounting for the management process are to plan and control the resources, which is in accordance with Malmi and Grandlund (2009). According to them, management accounting information serves to plan, assess, control, and guarantee the appropriate use and accountability for its resources. Another objective of Management Accounting is decision making, which is also coherent with the study of Weibenberger and Angelkort (2011), which measured the controller's influence in management decision, and also in line with the assertion by Hall (2010), for whom the accounting information provided in the form of reports is the base for the managers' decision making.

Based on these foundations, Hypothesis 2 is established: Controllershship Performance is positively associated with Management Performance.

2.4 Organizational Performance

The organizational performance can have a very broad meaning, which can include monetary indicators like efficiency and profitability, or non-monetary indicators like employee satisfaction and innovation rate (Donaldson, 2001).

Crossan, Rouse, Fry and Killing (2009) also affirm that, to avoid conflicts and confusion among the different organizational objectives, some order of priority should be established, also called structure of objectives. In the same sense, Anthony and Govindarajan (2006, p.88) emphasize that an organization has different objectives, but affirm that “in a company’s formal management control system, profitability tends to be the most important objective”. Hitt, Ireland and Hoskisson (2001) discuss that a company for achieving strategic competitiveness and exploring its competitive advantage, is able to achieve its primary objective, which is an above-average return on earnings.

In that sense, in this study, the Organizational Performance is operated as the degree of achievement of the organization’s main target, in line with the assertion highlighted in the literature about the existence of a priority scale of objectives. Despite admitting that the indication of a sole variable to measure this construct can be a limitation, this choice is deliberate in order to avoid potential variations that could emerge through the inclusion of different variables.

Studies that adopt the theoretical perspective called Resources-Based View have adopted causal relations between competences and performance. In this case, the main idea is that the performance is more influenced by resources and competences. A competence is essentially a routine or a series of routines that interact (Grant, 1991; Barney, 2001), and one of these organizational routines is the management process operated here as Management Performance. Thus, **Hypothesis 3** is established: Management Performance is positively associated with Organizational Performance.

3. Methodological Procedures

This research is classified as exploratory, as the studies can still be considered in initial stages, mainly regarding the constructs Controllability Performance and Management Performance. Exploratory studies are particularly important at times when questions are raised about the contributions of academic research to the practice sphere (Baldvinsdottir, Mitchell & Norreklit, 2010). Hence, this research is exploratory, descriptive and uses a quantitative analysis method (Hair Jr., Anderson & Black, 2005; Flick, 2009).

3.1 Sample

To guarantee a better understanding of the questions, a pretest was applied (Dillman, 2000) to a financial director from an auto parts industry and two Ph.D professors experienced in survey research. Small changes in the formulation were made without any change in the constructs.

The population considered was Controllability managers, financial managers, and accounting managers from Brazilian companies. As there is no unified company base, however, which includes companies of different sizes, which is the reality for Brazilian companies, the decision was made to develop a base that can more appropriately represent the population of Brazilian companies. Therefore, a base was constructed that included (1) Register of respondents from earlier studies; (2) Register of Controllability managers from a consulting and training company; (3) Members of a social network group focused on Controllability and Accounting. The choice of social network members is justified as these networks help to produce and disseminate knowledge and innovations related to the corporate world (Martins, Quincozes, Pereira & Fialho, 2009).

Therefore, although it was constructed by convenience, like many Brazilian management accounting studies, it is considered that this sample quite properly reflects the universe of managers who act in Brazilian companies, as it includes managers working in medium-sized companies, which do not publish accounting data.

The research was developed in November and December 2010 and the questionnaire was forwarded by e-mail, using an electronic questionnaire service.

3.1.1 Descriptive Information about the Respondents

Table 1 and Table 2 provide descriptive information on the respondents, while Table 3 permits understanding the size of the companies these respondents act in. Based on the information contained in these tables, it can be considered that the respondents attend to the desired research profile, in view of the proposed objectives.

Table 1

Respondents per Department

Department	Quantity	Percentage
Shared Service Center	2	2.5%
Accounting	10	12.5%
Controllershship	50	62.5%
Costs and Budgets	6	7.5%
Financial	12	15.0%
Total	80	100.0%

Source: Research data

Table 2

Respondents per function

Function	Quantity	Percentage
Head	1	1.3%
Coordinator	15	18.8%
Director	12	15.0%
Manager	41	51.3%
General Manager	6	7.5%
Supervisor	5	6,3%
Total	80	100,0%

Source: Research data

Table 3

Company size

Class Interval in Number of Employees	Number of companies	Percentage
[0 ; 100]	11	13.75%
[101 ; 500]	18	22.50%
[501 ; 1.000]	14	17.50%
[1.001 ; 5.000]	24	30.00%
[5.001 ; 10.000]	9	11.25%
[More than 10.000]	4	5.00%
Total	80	100.00%

Source: Research data

3.2 Elaboration of questionnaire

3.2.1 Knowledge sources

Although the classification by Mol and Birkinshaw (2009) is important, it was developed for organizational innovations in a broad sense, demanding some items that are more applicable to the Controllorship department. In that sense, three variables were included for the purpose of this study:

- **Books** – Books have been presented as important for the institutionalization of management accounting practices (Scapens, 1994).
- **Academic articles** – Van Helden, Aardema, Ter Bogt and Groot (2010) identified that researchers look for this knowledge in international academic journals, while the consultants obtain knowledge through contact with peers and in professional journals. Despite this dissonance, this variable was included in the attempt to verify the relevance of the academic production for practice, a concern different authors have manifested, such as Malmi and Grandlund (2009), and Baldvinsdottir, Mitchel and Nørreklit (2010).
- **Contact network** – Calhoun and Starbuck (2003) explain the relations between information and knowledge. According to them, people and organizations obtain information through social networks, and part of this information turns into knowledge (Calhoun & Starbuck, 2003). Pettigrew and Massini (2003) also highlight the role of information sharing beyond the organizational frontiers.

The remaining variables were adapted from the study by Mol and Birkinshaw (2009).

The respondents had to indicate the importance of each of the main knowledge or information sources used to produce innovations in the management control techniques, totaling nine items, based on the last two years. Scale 1. Not Used, 2. Little Importance, 3. Medium Importance, 4. Great Importance. Table 4 presents the data about the component variables of the construct Information Sources.

To avoid repeating the data about means and standard deviations, these data were displayed together with the operation of the variables.

Table 4

Information Sources. Source: Research data

Information source	Variable	Classification according to Mol & Birkinshaw (2009)	Mean	Standard Deviation	Reference
Information obtained from other departments	F1	Internal	3.6	0.7	Adapted from Mol and Birkinshaw (2009)
External consultants	F2	Market	2.8	0.8	Mol and Birkinshaw (2009)
Competitors	F3	Market	2.9	0.9	Mol and Birkinshaw (2009)
Books	F4	Professional	3.0	0.8	Based on Scapens (1994)
Software providers	F5	Market	3.0	0.8	Mol and Birkinshaw (2009)
Business newspapers and journals	F6	Professional	3.0	0.7	Mol and Birkinshaw (2009)
Academic papers	F7	Professional	2.8	0.8	Based on Van Helden <i>et al.</i> (2010)
Class associations (corporate and professional)	F8	Professional	3.0	0.9	Mol and Birkinshaw (2009)
Contact network	F9	Professional	3.3	0.8	Calhoun and Starbuck (2003)
Seminars and Courses	F10	Professional	3.2	0.7	Mol and Birkinshaw (2009)

Source: Research data

3.2.2 Controllership Performance

Although is not the main objective of this study, as a detailed report on the operation of the Controllership performance construct could be provided in a specific article, in this part, the main procedures adopted to develop the construct Controllership Performance construct are synthetically described.

One questionnaire was forwarded to a convenience sample of Management Accounting professors/researchers, and corporate professionals. The academic sample sought part of the lecturers affiliated with (*Stricto Sensu*) Graduate Accounting Programs. Ten questionnaires were forwarded and six valid answers were received. The professional sample was obtained through contact with professionals affiliated with associations of finance and accounting professionals, like the Brazilian Institute of Finance Executives (Ibef-SP) and the National Association of Finance, Business Administration, and Accounting Executives (Anefac). Besides some professionals from the researchers' contact network, all of them occupied superior functions to manager and held at least an MBA/Specialization degree. In this case, nine questionnaires were considered out of 18 questionnaires forwarded.

The respondents were asked to inform, through an electronic questionnaire, what aspects of the Controllership area should have their performance measured and assessed and requested justifications. A similar procedure was adopted by Frezatti, Aguiar and Guerreiro (2007) to assess differences between Financial and Management Accounting, involving academics only, but from different countries.

A summary of the main aspects the academics and professionals mentioned can be identified in Figure 1.

Variable	Academics	Professionals
Compliance with deadlines	Compliance with deadlines and Timeliness of information	Quality of information provided and deadline
Quality of information delivered	Timeliness and relevance of the information Assess whether the information provided led to the best results	Timeliness in the delivery; error level; level of understanding of the information
Budget control of departmental spending	Efficiency of services provided	Control of departmental expenses
User satisfaction (internal clients)	Assess whether the information provided led to the best results	User satisfaction
Execution of departmental projects	Implementation of new tools	Planning and effectiveness of activities managed by Controllership department Execution of departmental projects

Source: Elaborated by the authors based on research data

Figure 1. Combination of variables with evidence from academics and professionals

The content analysis as proposed by Bardin (2004) shows that the two most mentioned aspects are compliance with deadlines and quality of the information provided. These aspects are strongly present in a service delivery relation, suggesting that Controllership is considered as a service department focused on attending to the demands of internal and external clients in a tacit contractual relation.

Two other aspects were highlighted: one of them was that the Controllership department aims to control its own spending. This demonstrates that, like any other company area, it is accountable for its expense budget. Another aspect that is considered relevant is the execution of the projects. One of the respondents highlighted the fact that the Controllership area is developing different projects on how to adopt the new accounting standards. Finally, user satisfaction is a concern for academics as well as users. The former highlighted the decision making aspect.

Thus, after the content analysis in line with Bardin (2004), the following items were considered: (1) Compliance with deadlines; (2) Quality of information provided; (3) Budget control of departmental spending; (4) User satisfaction (internal clients); (5) Execution of departmental projects. Thus, a large part of the performance, except for item 4, is aligned with what Borinelli (2006) called the Basic Conceptual Structure of Controllership in his perspective “procedural aspects”, which are the activities, functions and artifacts used.

The respondents were asked to indicate the degree of compliance with the Controllership department’s objectives, using a Likert scale ranging from “1. Much Below Expectations” to “7. Much Superior to Expectations”. Table 5 displays the data on the Controllership Performance construct.

Table 5

Controllership Performance Variables

Assertion	Variable	Mean	Standard Deviation	Source
Compliance with deadlines	DC1	5.4	1.2	Research
Quality of information delivered	DC2	5.7	0.9	Research
Budget control of departmental spending	DC3	5.3	1.3	Research
User satisfaction (internal clients)	DC4	5.3	1.1	Research
Execution of departmental projects	DC5	5.1	1.3	Research

Source: research data

3.2.3 Management Performance

In the measuring of the Construct, three variables were considered (activity planning, resource control, and decision making). The respondents were asked to indicate how they assess the managers with regard to some activities, using a Likert scale ranging from “1. Much Below Expectations” to “7. Much Superior to Expectations”, and whose statistical data are displayed in Table 6.

Table 6

Management Performance Variables

Assertion	Variable	Mean	Standard Deviation	Reference
Activity planning	DG1	4.56	1.32	Malmi and Grandlund (2009)
Resource control	DG2	4.83	1.29	Malmi and Grandlund (2009)
Decision making	DG3	4.96	1.20	Malmi and Grandlund (2009)

Source: research data

3.2.4 Organizational Performance

The organizational performance was measured using a single variable, coherently with the study objective and the linking of the variables. The respondents were asked to assess the managers in terms of the achievement of the main organizational target, classifying the performance from “1. Much Below Expectations” to “7. Much Superior to Expectations”.

Table 7

Organizational Performance Variable

Assertion	Variable	Mean	Standard Deviation	References
Achievement of main organizational target	OP	5.2	1.2	Anthony e Govindarajan (2006) Crossan <i>et al.</i> (2009)

Source: research data

3.3 Structural Equations Modeling

The Structural Equations Modeling (SEM) technique was used, appropriate to estimate a series of inter-related relations of dependence simultaneously (Hair Jr. *et al.*, 2005), based on partial least squares, as this method can be used with smaller samples (Smith & Langfield-Smith, 2004; Zwicker, Souza & Bido, 2008).

3.4 Statistical procedures

The analysis of the results was based on the steps recommended by Hair Jr *et al.* (2005), which include:

Step 1: Preliminary analysis of the 80 cases, aiming to identify non-valid cases, which were not identified.

Step 2: In this phase, the measuring model was assessed by means of:

- Assessment of the correlation between each indicator and its respective construct or latent variables. As this is an exploratory study, no variable was excluded, although this correlation should be superior to 0.7 to make the model more robust, in line with Hair Jr *et al.* (2005).
- Analysis of compound reliability for each construct, whose coefficient should be superior or equal to 0.7, as well as Cronbach's Alpha, whose function is to assess whether the indicator measures the construct appropriately (Hair Jr. *et al.*, 2005; Zwicker *et al.*, 2008). For one-dimensional constructs, this procedure is not necessary, which in the case of this research is the Organizational Performance construct, with a Cronbach's Alpha equal to 1.
- Verification of Proportion of Variance Explained (PVE), which should be superior to 50% (Hair Jr. *et al.*, 2005). The Proportion of Variance Explained is a convergent validity measure and reflects the general proportion of variance in the indicators explained by the latent construct. In this study, only the Knowledge Sources construct obtained a PVE of 25%, affected by the procedure of not excluding variables with a loading below 0.7.
- Discriminant Validity, whose test is operated using the Square Root of the PVE, which cannot be inferior to the correlations between the constructs (Tenenhaus, Vinzi, Chatelini & Lauro, 2005). The objective of the discriminant validity is to determine whether the indicators are more strongly related with their respective latent variables than with any other latent variable present in the model.

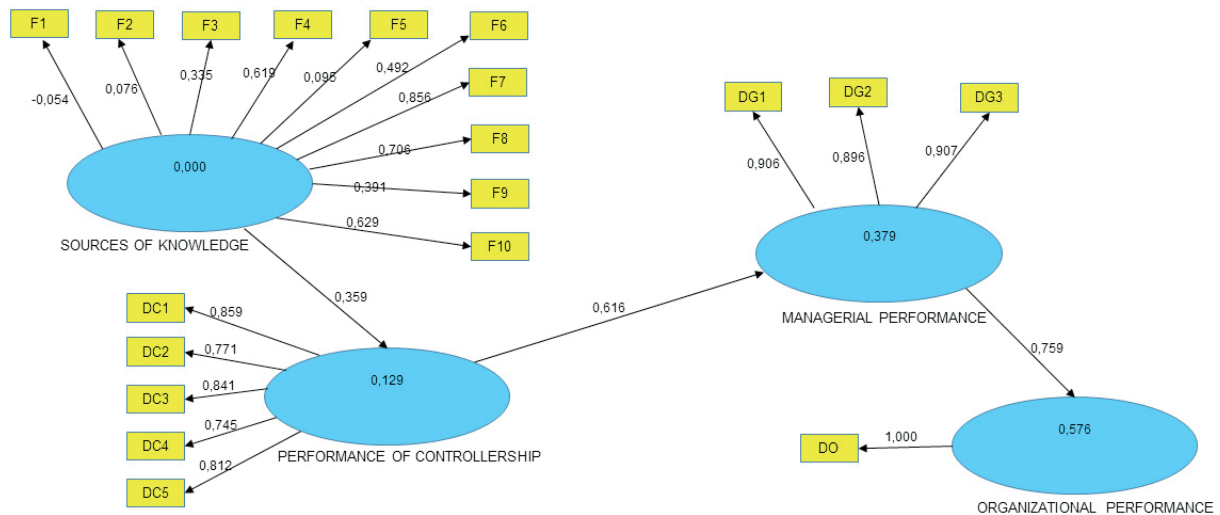
Step 3: Validation of the Structural Model, consisting of:

- Verification of R² coefficients, which means the percentage of variance of a latent variable explained by other latent variables.
- Test the hypothesis that the regression coefficients are equal to zero using Student's t-test. For a 0.05 significance level, the value of t is approximately 1.96. The procedure adopted was to use the bootstrapping technique, which is a kind of random resampling with repetition (Hair Jr. *et al.*, 2005). In this research, 200 resamplings were used to calculate the t-values.

The software used for the test was **SmartPLS 2.0 M3** (Ringle, Wende, & Will, 2005).

4. Results and Discussion

In Figure 2, the relationships between the constructs and respective factor loadings are displayed.



Source: SMARTPLS based on research data

Figure 2. PLS model of structural relationships.

In Table 8, the statistics of the constructs are shown.

Table 8

Statistics of constructs

Construct	Abbreviation	PVE	Compound Reliability	R2	Cronbach's Alpha
Performance of Controllership Area	Per Controller	0.65	0.90	0.13	0.87
Management Performance	Per Manag	0.82	0.93	0.38	0.89
Organizational Performance	Per Organizational	1.00	1.00	0.58	1.00
Knowledge Sources	Sour Know	0.25	0.70	-	0.71

Source: management data

The results suggest that only 13% of the variations in the controllership performance are explained by variations in the knowledge sources construct. On the one hand, this suggests that there may be other factors that explain the performance of the Controllership area such as quality of staff, infrastructure (physical facilities and work conditions, among others), technology (computers and information systems), organizational culture, and among others. Oyadomari, Aguiar, Chen and Dultra-de-Lima (2013) develop a more in-depth analysis of these data.

The Management Performance, measured through the variables planning, resource control and decision making, has 38% of its variations explained by the variation in the Controllership performance, which can be considered very representative. These results suggest the importance of Controllership to achieve Management Performance.

The high explanatory power of the Organizational Performance, with Management Performance variations explaining 58% of the variations, may reflect that the operations of these constructs are strongly directed, focusing on aspects that are more related to the role of the Management Control System. On the other

hand, in the same sense, the results indicate the importance of the Dynamic Capacities proposed by Teece, Pisano and Shuen (1997), and more specifically the management aspects related to planning, control and decisions.

Table 9 presents the correlations between the latent variables and, diagonally, in bold, the square roots of the AVE were included. In this case, the square root of the AVE was always higher than the correlations, indicating discriminant validity.

Table 9

Correlation Matrix and Square Root of AVE

Latent variable	1	2	3	4
(1) Per Controller	0.81	-	-	-
(2) Per Manag	0.62	0.90	-	-
(3) Per Organizational	0.60	0.76	1.00	-
(4) Sour Know	0.36	0.28	0.25	0.50

Obs.: In the diagonal, in bold, the values of the square root of the AVE were included.

Source: research data

The statistical tests about the structural relationship are displayed in Table 10.

Table 10

Structural Coefficients of the Model

Structural Relationship	Coefficient	Standard Error	T Value
Per Controller ⇒ Per Manag	0.62	0.07	8.88 *
Per Manag ⇒ Per Organizational	0.76	0.07	10.47 *
Sour Know ⇒ Per Controller	0.36	0.08	4.49 *

Obs: *statistically significant at the level of 5%

Source: research data

Based on the T values, it is perceived that the three relations examined in this study are significant at a 5% significance level. Hence, the hypotheses could not be rejected, accepting that:

H1: The degree of obtaining information is positively associated with the Controllershship Performance.

H2: Controllershship Performance is positively associated with Management Performance.

H3: Management Performance is positively associated with Organizational Performance.

These results suggest that, the greater the search for knowledge, the higher the Controllershship performance will be. This indicates that the professionals who work in this area should remain constantly updated, particularly at a time characterized by changes in the accounting standards, which are expected to influence the management information provided by the Controllershship area, in view of the thin line between Financial and Management Accounting.

The results are important and suggest that the permanent education of controllership professionals, characterized by the variables books, academic papers, seminars, and courses, have contributed to improve the controllership performance, which is yet another argument for these professionals' development policies to encourage continuing education. Another important factor is that the search for knowledge also takes place through participation in meetings of corporate and professional associations, which

highlights the role associations like the Regional Accounting Council, the National Association of Finance and Accounting Executives (Anefac), and corporate entities play in knowledge dissemination among controllorship professionals. On the other hand, despite the high average, the search for information in other departments showed great variations. Therefore, this search for information among the areas needs to be stimulated, as this can contribute to the production of tacit knowledge.

As regards the Controllorship Performance, the high scores evidence that these attributes are performing well, indicating that the Controllorship area is attending to the users in a very satisfactory manner.

The results also suggest that there is a positive association between Controllorship Performance and Management Performance, indicating that good activities of the Controllorship area positively imply better activity planning, resource control and decision making by the managers. These variables are strongly influenced by a Controllorship area that provides timely and top-quality information, and does this using resources within the budget, developing improvement projects within its own areas, thus achieving a high level of satisfaction of the internal users.

Finally, a positive association exists between Management Performance and Organizational Performance, the latter measured by the level of achievement of the main organizational target. On the one hand, this result may be affected by the favorable economic environment that permeates the period during which the research was developed but, on the other, it may indicate the importance for a manager to plan activities, control resources and take decisions, supported by an appropriate and agile information system that attends to the management needs.

In summary, the results suggest that a Controllorship area that seeks knowledge from internal and external sources is able to produce timely and good-quality information, at a compatible cost, supported by the management of departmental projects, attending to the users' expectations. These managers, in turn, supported by effective and efficient Controllorship, plan, control and make more assertive decisions, contributing for the organization to satisfactorily achieve its main objective.

The results are in line with the concern with identifying the role of the Controllorship area and confirms that the Control System, together with another resource, in this case the Management Performance, can be considered an important resource to gain competitive advantage, in accordance with Barney (2007). They also add up to studies that try to identify the effects of a management of good Controllorship practices, identifying their effects for the organization, like the studies of Tsui (2001), Agbejule and Saarikoski (2006) and Weißenberger and Angelkort (2011).

At the same time, the research results contribute to the Brazilian and international literature by specifically studying the Controllorship Performance construct and relating it with the Management Performance, which seems to be the closest relationship, given that Controllorship produces information for the managers to plan, execute, and control the resources and actions.

5. Final Considerations

This study identified that there are associations between the search for knowledge, controllorship performance, management performance, and organizational performance, a theme that appears against the background of interests in identifying the so-called best practices, which is also the objective of the creation of the Management Accounting Theory.

The study advances by proposing a Controllorship Performance construct, which is an adaptation of the Management Performance and Organizational Performance construct, more related to the role of Controllorship. The results indicated that, for 80 controllorship professionals who work in Brazilian companies, there exist positive associations between the search for knowledge, the performance of the Controllorship area, management performance and organizational performance, with a positive and statistically significant association.

The results indicate contributions to practice, showing that these professionals should keep up their continuing education efforts and that there is still opportunity to seek knowledge inside the organization. These efforts cooperate to achieve the performance of the Controllership area, which is important for the managers to plan, control and make decisions appropriately, positively contributing to the achievement of the organization's main objective.

Regarding the literature, the research contributes by empirically confirming the understanding of the Controllership area as a valuable resource, validating what is recommended in the textbooks. This area can be understood as a producer of dynamic abilities, mainly adapting measuring mechanisms and performance assessment instruments that attend to the company's organizational reality and strategic objectives.

For the scientific community, the results can be useful to, even if initially, show that the information sources these professionals use most are not academic articles, but information obtained through the socialization process, using the contact network and professional associations, which can be considered a space for academics to interact with the professionals and thus create knowledge.

At the same time, the results should be considered with caution, as the perceived performance was established based on Controllership professionals' opinions. Hence, other studies that capture the Controllership performance dimension based on the Controllership users' perception could be developed to avoid this bias.

Although the results cannot be generalized, they can be considered embryos of future studies that identify, through case studies, how the Controllership area creates and shares knowledge, and which identify the contribution of the Controllership area to organizational managers in their routine planning, control and decision making.

6. References

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