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Does management accounting play role in planning process?

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ABSTRACT

This study examines the relationship between management accounting and planning profiles in Brazilian companies. The main goal is to understand the consequences of not including a fully structured management accounting scheme in the planning process. The authors conducted a field research among medium and large-sized companies, using a probabilistic sample from a population of 2281 companies. Using analytic hierarchy process (AHP) and statistical cluster analysis, the authors grouped the entities' strategic budget planning processes into five profiles, after which the authors applied statistical tests to assess the five clusters. The study concludes that poor or fully implemented strategic and budget-planning processes relate to the management accounting profiles of the Brazilian organizations studied.

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1. Introduction

The business environment has become increasingly volatile and unpredictable in recent decades, and business management has become correspondingly more complex. In particular, increased competition has become a threat to the survival of businesses in more vulnerable sectors. In this environment, strategic planning with a view to achieving organizational efficacy is critical (Porter, 1985). However, the formulation of effective strategies will not ensure that an entity achieves organizational efficacy unless the entity has actually implemented those strategies (Jermias and Gani, 2004; Shank and Govindarajan, 1997). This implementation requires the interposition of a particular form of strategic planning between the formulation of policies and their implementation (Mintzberg et al., 1998); moreover, the strategy implementation requires instruments that facilitate and control the effective implementation of the formulated strategies.

In order to manage the business and achieve organizational efficacy, the organization takes some elements into account, such as organizational structure, management style and the management control system that includes the management accounting system (Govindarajan, 1988). Particularly the management control system is an important mechanism, responsible for the design and implementation of strategies. In terms of range and reliability, the provision of managerial information that feeds the planning and control processes is critical.

Such a management control system consists of two dimensions: (i) information selection; and (ii) information presentation. The first relates to the selection of appropriate management accounting information (Chenhall and Morris, 1986; Bouwens and Abernethy, 2000; Tillema, 2005; Gerdin, 2005). The second refers to the techniques of management control adopted by organizations, including traditional ones like strategic planning and budgeting (Gosselin, 1997; Chenhall and Langfield-Smith, 1998; Haldma and Lääts, 2002; Jermias and Gani, 2004). The relationship between these two dimensions of the management control system determines the design of the management control system (Ferreira and Otley, 2006).

The present study examines how the attributes of the information produced by the management accounting system affect the selection of management control techniques (Ferreira and Otley, 2006). The premise of this study is that the nature of the planning process, which includes strategic planning and budget, varies in accordance with the accounting profile tools that companies implement. Some companies implement all tools according to the conceptual framework, whereas others present less-developed profiles in terms of these tools (Frezatti, 2005).

According to Scapens (1994), organizations use more recently developed accounting tools less frequently than traditional accounting tools. For the purposes of the present analysis, this research do not consider neither strategic planning nor budget as recently developed tools (Chenhall and Langfield-Smith, 1998). The study is not only concerned with *whether* they exist in an organization, but also to what *extent* they exist (in terms of complexity and usage profiles).

Examining the mutual implications of the dimensions of the management control system is relevant (Ferreira and Otley, 2006) in order to reach an understanding of the association between them. The identification of the attributes' profile can explain relevant differences

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among the entities in terms of the planning process, usage level and even satisfaction level with the use of the artifact.

This study intends to add to the literature the qualitative discussion of the planning process in a more ambitious dimension than to simply identify whether the process exists or not, perceiving if different planning process profiles require peculiarities in terms of the attributes of the management accounting system. Consequently, the development itself and demand of management accounting can be understood in a broader way on the basis of this associative analysis.

Considering that management accounting may have different profiles of level of structuring and that, according to these profiles management accounting may have different impacts on the strategic plan and budget, the study aims to address the following research question.

Is management accounting structure associated with the planning (strategic and budget) processes development? H1: the structure of the management accounting attributes associates with the strategic planning and budget development.

2. Literature review

This literature review focuses on the following subjects: the strategic planning process; the relationship between strategic planning and budgeting; the management accounting information system; the relationship between management accounting and the planning process; and (v) the attributes of the management accounting structure (see Fig. 1).

2.1. Strategic planning process

Strategic planning literature usually predicts that the use of a strategic planning process positively affects profitability, and this positive effect has been its major objective since at least the 1960s (Pearce et al., 1987). However, various studies have reached differing conclusions from analyses of the relationship between strategic planning and performance (Armstrong, 1982; Glaister and Falshaw, 1999; Andersen, 2000; Rogers and Bamford, 2002). According to Brock and Barry (2003), this divergence results from: (i) inconsistencies in putting plans into action; (ii) ignoring contextual influences; and (iii) invalid measuring techniques. The last item includes weaknesses in accounting data. In this regard, Peel and Bridge (1998) suggest that the use of accounting-based measures, such as revenue, is one reason for the divergence. As Bracker and Pearson (1986) observe, this lack of convergence occurs because accounting-based performance measures have two inherent weaknesses: (i) a lack of homogeneity in accounting data; and (ii) non-availability of data for small firms.

O'Regan and Ghobadian (2002) identify some barriers to the implementation of formal strategic planning—including a lack of relevant and adequate information, which is central to the strategic planning process for companies that use this process formally. In this

context, Rogers and Bamford (2002) note that the key organizational issue in the future will be information management and the strategic planning process has to emphasize the types of information that support the company's strategic orientation. No process requires greater coordination and information input than an organization's planning process.

Apparently the management team requires a great deal of internal information to support its decision-making process and that each organization has its own configuration of needs, timing, and details. The selection of the information is critical because this selection must meet the specific needs of the organization, rather than being a mandatory specification imposed from outside the firm. Most criticisms of accounting information arise from a failure to plan the information structure according to the organization's specific requirements or needs. The authors do not intend to investigate possible reasons for that, like life cycle and cost–benefit evaluation, but the availability of the information structure, captured by the attributes profile is the main point of the research.

According to Fischmann and Almeida (1993), the strategic components of the planning process are: vision, mission, long-term objectives, scenarios, and operational plans (as shown in Table 1).

2.2. Relationship between strategic planning and budgeting

Steiner (1979) considers that the strategic planning concept has the following characteristics: (i) related to the future consequences of current decisions; (ii) a process that begins by setting organizational objectives, then defines the strategies and policies to reach them, and, finally, develops detailed plans to guarantee that the strategies are implemented; (iii) an attitude—that is, strategic planning is more than an intellectual exercise; and (iv) responsible for the links among long-term strategic plans, medium-term programs, short-term budgets, and operational plans. The budget is the tool that enables the strategic plan to meet its objectives.

In creating the links, especially the connection between the long-term plans and the short-term budgets, the association between strategic issues and tactical issues becomes especially relevant to the development of the planning system as a whole—thus avoiding either an ethereal approach (which lacks contact with business reality) or an exclusively tactical process (which lacks consideration of the overall strategic objectives of the company). Neither of these extremes provides the process with the necessary balance.

As Andersen (2000, p. 184) observes, a relation normally exists between a failure to show a positive association between strategic planning and performance and “a tendency not to emphasize the role of strategic planning.” Management accounting can thus contribute to poor strategic planning—either because information is inadequate or absent, or because information has been badly used.

Oliveira (1985) categorizes the most common strategic planning flaws as occurring: (i) before the start of the elaboration (of planning); (ii) during the elaboration; and (iii) during the implementation. Among the flaws in the first category, Oliveira (1985, p. 35) refers to not preparing the ground for strategic planning inside the company [and] not scheduling the system for the control and evaluation of strategic planning. Establishing the criteria and

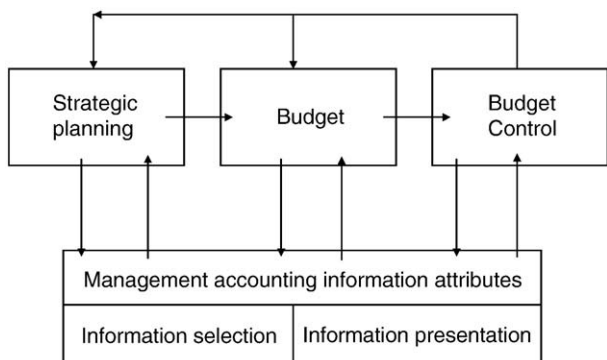


Fig. 1. Planning and management accounting attributes association.

Table 1 Elements of strategic planning and budget.

Strategic planning	Budget
1. Vision	1. Assumptions
2. Mission	2. Marketing plan
3. Strategies and long-term goals	3. Production and logistic plan
4. Scenarios	4. Human resources plan
5. Long-term operating plan	5. Capital budget
	6. Projected financial statements

parameters, as well as the necessary information system for the adequate control and evaluation of strategic planning, is fundamental for the executive.

The success of strategic planning thus depends on control and evaluation on the basis of management accounting tools (which include budgeting and budgetary control). Adequate management accounting can offer the support that is necessary to the planning process as a whole. However, as [Welsch et al. \(1988\)](#) observe, the budget (which is the managers' tactical instrument) has to contain all relevant assumptions, marketing plans, production plans, supplies and inventories, human resource plans, investment plans, and financial statement projections (see [Table 1](#)).

2.3. Management accounting information systems

[Welsch et al. \(1988\)](#) and [Hansen and Mowen \(2006\)](#) divide accounting information systems into two main subsystems: financial and management. However, they note that these subsystems are not necessarily independent of one another; indeed, in an ideal situation, integration and connected database would exist between the two subsystems. A possibility exists to use each subsystem's outputs as inputs for the other. In short, these authors support the integration of accounting databases. Management accounting systems are part of an organization's wider management control systems. In general, management control exists to ensure that internal agents act in accordance with the organizational goals ([Raiborn et al., 2004](#); [Drury, 2004](#); [Berry et al., 2005](#); [Anthony and Govindarajan, 2002](#)). In this regard, management accounting information systems represent one of the most relevant control mechanisms for evaluating whether various activities are realizing benefits for the organization ([Drury, 2004](#)).

According to [Shank and Govindarajan \(1997\)](#), "... accounting exists in administration mainly to facilitate the development and implementation of business strategy." They considered administration to be a cyclical process that involves four phases: (i) the formulation of strategies; (ii) the communication of these strategies throughout the organization; (iii) the development of tactics, and putting these tactics into practice to implement the strategies throughout the entire organization; and (iv) the development of controls to monitor the implementation steps and to assess success in reaching strategic goals.

[Shank and Govindarajan \(1997\)](#) also note that accounting has a role to play in each of these phases. In the first phase, accounting information constitutes the basis for financial analysis by facilitating the identification of financially practicable strategies. In the second phase, the accounting reports represent an important tool for communicating the basic aspects of the strategy. In the third phase, accounting information facilitates the identification of the most efficient tactical program to reach the company's goals. Finally, accounting has an important role to play in monitoring the performance of managers and business units—in terms of standard costs, expense budgets, and annual profit plans.

Management accounting systems thus have the potential to supply financial information related to costing products, services, and other items of interest for management in terms of planning, control, assignment, continuous improvement, and decision-making ([Hansen and Mowen, 2006](#)). Management accounting can thus supply the information required for both goals definition in the strategy definition process and for performance assignment ([Raiborn et al., 2004](#)). However, the planning and control process must consider both financial and non-financial information.

2.4. Relationship between management accounting and the planning process

The selection and utilization of management control techniques determine the profile of the management information system ([Ferreira and Otley, 2006](#)). The attributes of the information generated by the

system depend especially on the techniques employed for strategic planning and budget. [Ferreira and Otley \(2006\)](#) demonstrate the presence of a relationship between conventional management control techniques, such as strategic planning and budget, and traditional management control information.

One of [Mintzberg's \(1994\)](#) harshest criticisms of strategic planners is that they are distant from the day-to-day details of operations in formulating strategy—because they assume that information systems can fully inform them. This criticism becomes even more pertinent if the business does not ensure that managers receive the daily factual information that only management accounting can provide. Thus, even authors who criticize strategic planning—such as [Mintzberg \(1994\)](#)—refer to the need for information to assist in the formation of strategies and to assess their viability after implementation. However, critics exist regarding the use of accounting data as a source of such information—whether to support strategy formation ([Mintzberg et al., 1998](#)) or to analyze company performance ([Peel and Bridge, 1998](#); [Bracker and Pearson, 1986](#)). According to [Mintzberg et al. \(1998\)](#), factual information (including management information) is often limited in the following respects:

- frequently has a limited scope and often leaves out important non-economic and non-quantitative factors;
- often too complex, limiting the efficient use of factual information in strategy formulation;
- frequently arrives too late, reducing the use of factual information in strategy formulation; and
- a surprising amount of factual information cannot be trusted.

In this context, an adequate supply of information becomes a matter of priority in the decision-making process, and this priority has provoked changes in the kind of information that management accounting has delivered in recent years. [Ward \(1993, p. 9\)](#) endorses the importance of management accounting in observing that: "... the strategic planning exercise is elaborated to create plans that would allow the company to reach its goals. These plans normally demand important data from management accounting."

Similarly, [Horngren and Foster \(1997\)](#) note that accounting "... facilitates planning, control and decision-making through budgets and other financial standards, without the systematic recording of its current results and its role in performance evaluation." These authors have also noted that a management accounting system can be efficient only when this system is consistent with the organization's goals and strategies.

2.5. Attributes of management accounting structure

The characterization of management accounting in terms of its attributes is an important aspect of the present study—which takes the research of [Moores and Yuen \(2001\)](#) as a theoretical basis. These authors consolidated the relevant attributes of management accounting in two groups: information selection and information presentation—as suggested on the basis of the Statement of Accounting Concept 3 ([SAC3, 1990](#)).

The first, information selection includes the content dimensions or tools which accounting systems use to support managers decisions. However, in view of the fact that organizations can differ in terms of strategies, structures, and styles, information presentation includes other attributes of accounting—such as aggregation level, integration, scope, and timeliness. [Table 2](#) shows the variables that make up the attributes.

[Moores and Yuen \(2001\)](#) do not specify how to capture some attributes mentioned in their study. In [Table 2](#), the authors attempted to detail some of these. The present study did not consider the environment scanning attribute because the orientation of this research is towards the internal aspects of a company's decisions.

Table 2
Accounting attributes by dimension.
Source: Moores and Yuen (2001, p.355), adapted.

Selection		Information presentation	
Conceptual definition	Research modus operandi	Conceptual definition	Research modus operandi
1. Monthly income statements	1. Monthly income statements	Aggregation and integration	
2. Monthly balance sheet	2. Monthly balance sheet	a. Decision models	a. Decision models
3. Cash flow statement	3. Cash flow statement	b. Combination of data over time	b. Combination of data over time
4. Cost accounting	4. Costing method type and cost accumulation system	c. Combination of data in functional areas	c. Combination of data in functional areas
5. Non-participatory budget control	5. Centralized strategic planning process, budget and budget control	d. Reports on interaction between subunits	d. Reports on interaction between subunits
6. Participatory budget control	6. Participatory strategic planning process, budget and budget control		
7. Capital budget	7. Capital budget		
8. Long-term planning and forecasts	8. Long-term planning and forecasts		
9. Responsibility accounting	9. Responsibility accounting detailed per cost center, business unit, etc		
10. Quality control	10. Waste reduction programs		
11. Environment scanning	11. Not considered in this study		
12. Financial information for performance evaluation	12. Financial information for performance evaluation		
13. Long-term criteria for performance evaluation	13. Long-term criteria for performance evaluation		
		Scope	
		e. Internal	e. Internal
		f. External	f. External
		g. Financial	g. Financial
		h. Non-financial	h. Non-financial
		i. Historical	i. Historical
		j. Future	j. Future
		Timeliness	
		k. Report speed	k. Report speed
		l. Automatic reports	l. ERP integration
		m. Report frequency	m. Report frequency
		n. Time-lag in information reception	n. Time-lag in information reception

3. Research design

Fig. 2 illustrates the research design for the present study.

3.1. Research approach

Because the research focused on the relationship between a company's planning profile and its management accounting attributes, planning profiles formed different clusters. The analysis considers the two kinds of planning processes—strategic planning and budget planning separately. This research applies the Steiner' (1979, p. 17) definition of the strategic planning profiles whose original conceptual strategic planning includes two major elements: strategic planning and tactical planning. Two dimensions characterize the strategic planning. The first one is the planning process which includes, amongst others, expectations of outside and inside interests, forecasts, past and current performance, and environmental information. The second dimension is the master and program strategies which include: mission, purposes, objectives, policies, and specific long-term projects. The research design specifically applies the simplified strategic planning model adapted by Fischmann and Almeida (1993) which includes the components: vision, mission, long-term objectives, scenarios, and operational plans.

In turn, the focus of the tactical planning is on short-range plans (Steiner, 1979). Welsch et al. (1988) suggest that the tactical planning (or budgeting) contains all relevant assumptions, marketing plans, production plans, supplies and inventories, human resource plans, investment plans, and financial statement projections.

At one extreme was a cluster of firms that had the simplest (or poorest) profile in terms of both strategic planning and budgeting; at the other extreme was the cluster with the most comprehensive profile in terms of both strategic planning and budgeting. Between these

extremes were clusters with different degrees of comprehensiveness in each of these planning processes. Based on expectations from a perusal of the relevant literature, judgments regarding simplest, poorest, and comprehensive were made in light of the firms having (or not having) the components.

3.1.1. Planning variables

To divide the sample into different clusters, the first step was to identify the planning profiles; the analysis of the variables directed this identification. Because the variables of the planning processes were of differing importance, they possessed different weights of importance in the planning model. The research applied Analytic Hierarchy Process, AHP (Saaty, 1996) to analyze the variables presented in the literature review and discussed in the study. Each variable received an ordinal grade of points in an interval from 1 to 5; the greater the grade, the greater the variable's importance and complexity. The analysis considered the following levels, with the first two as preferred options and used the last option only if the first two were not applicable:

- from the relatively more basic (grade 1, equal to 1 point) to the relatively more complex/more complete (grade 5, equal to 5 points)—in a conceptual, resource, or actual sense;
- from natural precedence (grade 1, equal to 1 point) to the last the firm obtained (grade 5, equal to 5 point)—in a conceptual sense; or
- from the least required (grade 1, equal to 1 point) to the most desirable (grade 5, equal to 5 points)—from a conceptual perspective.

The variables and their respective weights (points) were as follows:

- *Strategic planning*: vision (1 point), mission (2 points), scenarios (3 points), strategies and long-term objectives (4 points), and long-term operational plans (5 points); each entity being able to obtain a maximum of 15 points.

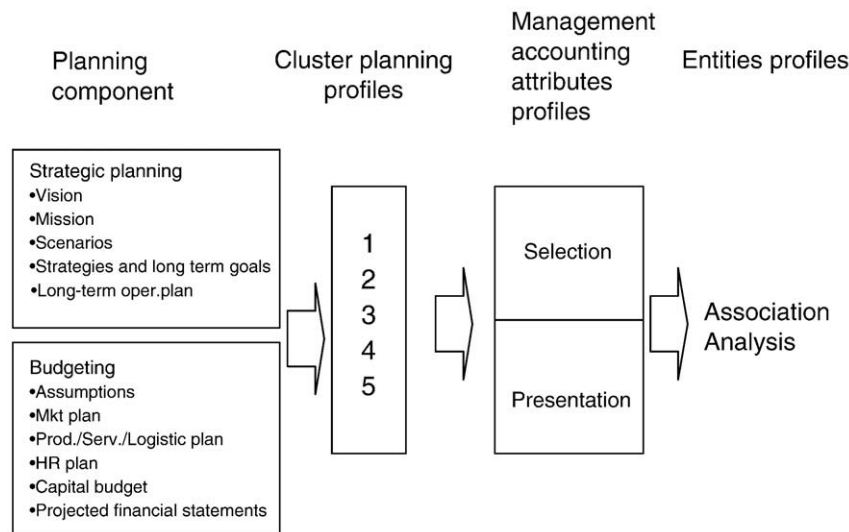


Fig. 2. Field research overview.

- *Budgeting*: assumptions (1 point), marketing plan (2 points), production/services plan, supplies, inventories (3 points), human resource plan (4 points), capital budget (4 points), and projected financial statements (5 points); each entity being able to obtain a maximum of 19 points.

Zero indicated cases in which authors did not find the elements.

3.1.2. Management accounting variables

After identifying the clusters of planning profiles, the next step was to identify the attributes that distinguished the clusters. Table 2 presents the management accounting attributes, as described in the literature review, grouped into selection and presentation dimensions. With a view to undertaking cluster analysis, the analysis classified these variables in a dichotomic basis, with 1 indicating the presence of the variable and 0 indicating its absence. This dichotomization made feasible the identification of the attributes that were

present in the different clusters or, even more usefully, the attributes that were *not* present in some clusters.

3.2. Population, sampling and data collection

The study population included organizations that are active in Brazil—both multinational and national, public and private. The authors chose these organizations from all states of the Brazilian federation. The population target used the definitions of the National Bank of Economic and Social Development (BNDES) to define a medium-sized company—that is, revenue that exceeds US\$18 million/year. The source of organizational information in defining the study population was the database developed by the Brazilian magazine *Melhores e Maiores* database. In total, the sample population included 2281 organizations characterized as medium-sized or large. The total revenues of the companies were US\$502 billion. The population represented seven sectors (see Table 3). The authors also categorized these sectors by revenues scale, in accordance with the entity's size.

A pretest assessed the consistency and sequence of questions in the survey. During the fieldwork, the definition and segmentation of a probabilistic sample classified the companies based on the annual revenues in dollars, using a 12% error margin and a 95% significance level. Data collection included answers from 119 entities, identified by means of random numbers, using Excel worksheet resources and taking into consideration both sector and size.

The field research involved three interviewers who had contact with the organizations. Data collection used a questionnaire, complemented by interviews. The company's senior financial executive received and answered the questionnaire sent by e-mail. In 30% of cases, additionally, a follow-up interview was held to clarify some points or to assist in confirming the questionnaire.

3.3. Statistical analysis

The study used the following statistical analyses:

- *Multivariate analysis (specifically cluster technique)*: with a view to categorizing the entities and identifying distinct planning profiles; the research analysis first used Hierarchical approach and, next as sequence, the technique used a K-means, ordinal scale, and furthest neighbor approach with a view to identifying the five distinct company groups in terms of strategic and budget planning process; and
- *Mann-Whitney test*: applied to analyze the distinct cluster groups and to test the hypotheses with a 95% significance level. Because the

Table 3

Population segmentation per sector.

Resumed codes per sector	Original codes per sector	Title
1	2	Wholesalers and foreign trade
	5	Retailers
2	1	Food
	3	Automobile
	4	Beer and beverages
	6	Textile and confection
	7	Civil construction
	8	Electric-electronic
	9	Pharmaceutical
	10	Hygiene, cleaning and cosmetics
	12	Civil construction material
	13	Mechanic
	14	Mining
	15	Paper and cellulose
	16	Plastic and rubber
	17	Chemical and petrochemical substance
	21	Iron extraction and metallurgy
	22	Technology and informatics
3	11	Financial institutions
4	23	Telecommunications
5	19	Public services
6	18	Services — others
	20	Transport
	24	Communication
7	25	Various others

Table 4
Clusters and centroids distribution.

Description	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Meaning	The most adherent	High budget and low SP	The least adherent	High SP and low budget	Highest budget and low SP
Strategic plan	14,3	7,1	3,8	12,6	7,7
Budgeting	18,3	11,8	2,9	5,5	18,1
Number of entities	42	28	13	14	22
% on total of sample	35.3	23.5	10.9	11.8	18.5

theoretical model included 26 variables, the determination of an acceptable significance level considered the transformation of 0.05 to 0.002 (0.05/26). The data analysis compared each cluster with the sum of all the other clusters. For example, the study investigated the variables that distinguished cluster 1 from clusters 2 + 3 + 4 + 5. The application of this analysis was similar in the other clusters.

4. Data analysis

Data analysis included five distinct clusters. Clusters 1 and 3 were at the two extremes, with the other alternatives representing intermediate cases. Table 4 presents the arrangement of the clusters according to the centroids.

- *Cluster 1*: the most comprehensive cluster in terms of both strategic plan (14.3) and budgeting (18.3). This group included 42 entities that had both a strategic plan and a tactical plan in accordance with the conceptual framework. This configuration is likely to cope with the theoretical approach of high adherence of budget to strategic planning.
- *Cluster 2*: intermediate level with more emphasis in budgeting (7.1) than strategic planning (11.8). Total of 28 entities. This cluster included the companies that had tactical concerns, but relatively little support for strategic planning.
- *Cluster 3*: this cluster was the simplest cluster in both strategic planning (3.8) and budgeting (2.9). This cluster consisted of 13 entities.
- *Cluster 4*: intermediate level with more emphasis on strategic planning (12.6) than on budgeting (5.5). This cluster included 14 entities. Although concerned about the strategic plan, these organizations had little support from the budget. As consequence, the expectation is that strategic planning is the main focus of process and weak tool to implement the planned actions.

- *Cluster 5*: strong emphasis on budgeting (18.1), but intermediate concern for strategic planning (7.7). This cluster contained 22 companies.

The data analysis also applied the Mann–Whitney test to each cluster, and at least one variable was within the significance level defined for the study (Table 5). Based on the results, the null hypothesis (H0) was thus rejected, and hypothesis H1 was confirmed. For this sample, the planning profile was associated with the attributes of management accounting.

In terms of each cluster, the following observations are due (Tables 6 and 7):

- *Cluster 1*: this cluster was the most comprehensive cluster in terms of both strategic plan and budget. The cluster included many manufacturing industries, but fewer financial institutions. Larger revenues were characteristic of this cluster. The attributes found in this cluster were: *monthly balance sheet, monthly cash flow, capital budgeting, and long-term planning and forecast*. This cluster thus had the basics of a structure to accomplish a comprehensive planning system; in particular, *capital budgeting* was present in this cluster, but not in other clusters.
- *Cluster 2*: an intermediate level of strategic planning, but greater emphasis on budgeting characterized this cluster. The cluster had the fewest manufacturing industries, but the most financial institutions. In terms of revenue, this cluster had a relatively greater number of smaller entities than average. The only characteristic that distinguished this cluster from the others was less utilization of the *costing system* than in the other clusters.
- *Cluster 3*: this cluster was the simplest cluster in both strategic planning and budget. In terms of revenues, this cluster had a greater number of smaller companies and fewer large ones. Foreign trade and wholesaling entities were most prominent in this cluster. Distinguishing this cluster from the others was a lack of *capital budget, long-term planning and forecasts, and non-financial scope*. Cash flow and balance sheet of the entities reflected the information provided by the capital budget.
- *Cluster 4*: from the perspective of the planning process, thus cluster was at an intermediate level, with greater emphasis on strategic planning than on budgeting. Companies with larger revenues and those classified as other services were most prominent in this cluster. Attributes not found in this sector included *capital budget and long-term criteria for performance evaluation*. Without these attributes, the entities were unable to structure their planning systems as a whole; development of strategic planning was possible, but not in terms of the comprehensiveness that the conceptual framework proposed. This result is probably why the budgeting focus was not as significant as in cluster 1.

Table 5
Management accounting attributes and strategic (SP) and budget (B) planning profile clusters with lower (1–significance level/n).

Attributes	Clusters				
	1	2	3	4	5
2. Monthly balance sheet	0.000 (yes)				
3. Cash flow statement	0.001 (yes)				
4. Cost accounting		0.002 (no)			
7. Capital budget	0.000 (yes)		0.000 (no)	0.000 (no)	0.002 (no)
8. Long-term planning and forecasts	0.000 (yes)		0.000 (no)		
13. Long-term criteria for performance evaluation				0.000 (no)	
Presentation	1	2	3	4	5
h. Scope – non-financial			0.002 (no)		

Table 6
Cluster distribution per sectors.

Sector	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Total	% s total
<i>Number of entities</i>							
Foreign trade and wholesaling	4	5	3	2	2	16	13%
Industry in general	24	9	6	7	9	55	46%
Financial institutions	3	7	1	1	2	14	12%
Telecom services	2	–	–	–	2	4	3%
Public services	5	3	1	1	2	12	10%
Other services	4	3	2	3	5	17	14%
Various	–	1	–	–	–	1	1%
Total	42	28	13	14	22	119	100%
<i>In %</i>							
Foreign trade and wholesaling	10%	18%	23%	14%	9%	13%	
Industry in general	57%	32%	46%	50%	41%	46%	
Financial institutions	7%	25%	8%	7%	9%	12%	
Telecom services	5%	0%	0%	0%	9%	3%	
Public services	12%	11%	8%	7%	9%	10%	
Other services	10%	11%	15%	21%	23%	14%	
Various	0%	4%	0%	0%	0%	1%	
Total	100%	100%	100%	100%	100%	100%	

- *Cluster 5*: this cluster had a strong emphasis on budget, but only an intermediate emphasis on strategic planning. Organizations with larger revenues were found in this cluster more frequently than in other clusters. The only characteristic that distinguished this cluster from the others was a lack of *capital budget*.

A significant finding was that the majority of the attributes associated with the planning profile included those mentioned in the literature as being the most important management accounting attributes.

5. Results and implications

The analysis provided indication that both the management account structure and planning process (strategic plan and budget) have different profiles, treated in the clusters. This result, when referring to planning process, was in accordance with Steiner (1979) which argues that a universal strategic planning structure that can be equally

Table 7
Cluster distribution per revenues.

Revenues in US\$ millions	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Total	% s total
<i>Number of entities</i>							
Up to 50	7	7	2	2	3	21	18%
>50 <100	5	2	4	2	3	16	13%
>100 <250	5	5	2	2	3	17	14%
>250 <500	8	4	1	–	3	16	13%
>500 <1000	5	4	2	3	6	20	17%
>1000 <3000	10	4	1	4	4	23	19%
>3000 <30,000	2	2	1	1	–	6	5%
Total	42	28	13	14	22	119	100%
<i>In %</i>							
Up to 50	17%	25%	15%	14%	14%	18%	
>50 <100	12%	7%	31%	14%	14%	13%	
>100 <250	12%	18%	15%	14%	14%	14%	
>250 <500	19%	14%	8%	0%	14%	13%	
>500 <1000	12%	14%	15%	21%	27%	17%	
>1000 <3000	24%	14%	8%	29%	18%	19%	
>3000 <30,000	5%	7%	8%	7%	0%	5%	
Total	100%	100%	100%	100%	100%	100%	

adequate for all companies does not exist. As the focus of this paper is not the strategy *definition* but its implementation and control, the lack of structure implies in difficulties to implement and follow that. The several clusters indicate the level of heterogeneity of the profiles, from very poor up to a complex and fully adherent.

The results identified different clusters as per considering the management account structure of attributes, in comparison with its construct, from the one that is the poorest one up to the most adherent. An important implication is the association between the most adherent profile from the planning perspective and the poorest, less adherent profile from the perspective of management accounting. The contrary is also true, the most adherent and complete is the one that has the most adherent planning structure. The results demonstrated that a size characteristic is not present due to the fact that the most adherent cluster is the one relatively balanced.

Considering the implications, the following arguments are possible:

- Any level of association in terms of management accounting and planning process exists. This research can't provide insights with evidences about the drive of that: the results doesn't imply that management accounting profile is fully adherent due to a fully adherent planning process or the contrary, the planning process profile is adherent due to the management accounting is adherent. Causality is not possible from the adopted methodological perspective;
- The maturity level detected by the cluster, or lack of that, may demand efforts to prepare the basis for development. In other words, planning process not well structured might demand, first, an improvement in management accounting to provide grounding. After that the planning process might be improved. This result can explain the not matured status of some organization when talking about planning process.
- If the prior assertion is true, any crisis time will push or strongly demand the planning process and, as a consequence, will also push a not sufficient matured, with a profile not sufficiently adherent to conceptual framework;
- on the other hand, if the management accounting is matured, included in the most adherent profiles, the organization will have a solid basis for planning process development.

Accounting literature has given increased attention to the relationship between management accounting system and strategy (Langfield-Smith, 2007). This accounting literature has focused on different strategic frameworks, such as strategy process—emergent and deliberate (Mintzberg and Waters, 1985)—and strategy typologies—defenders, prospectors, and analyzers (Miles and Snow, 1978), leadership, differentiation, and focus (Porter, 1985), and build, hold, harvest, and divest (Gupta and Govindarajan, 1984). The main contribution to this literature is to show which management accounting attributes seem to be more adequate for different strategic planning profiles.

6. Final comments

Although the management literature often mentions a presumed association between planning process (strategic and budgeting) and management accounting attributes, few (if any) studies provide empirical evidence to confirm or refute such an association. Applying Moores and Yuen's (2001) model to an investigation of Brazilian medium-sized and large companies, the present study has examined whether an association between the management accounting attributes used in these companies and their conceptual adherence in developing their planning does exist.

Five clusters of entities were identified, each with a different approach to a comprehensive planning process. Some placed more emphasis on strategic planning, some placed greater emphasis on budget, and others covered both. These differences reflected different approaches to coping with specific management needs.

The results demonstrate that, at least for the sample considered, a relationship existed between the companies' planning processes and the profiles of their management accounting attributes. The most comprehensive profile from the perspective of planning (cluster 1) was most in accordance with the literature from the perspective of the strategic plan and the budgeting elements predicted. At the other extreme, the profile that was least in accordance with the literature (cluster 3) was the poorest from the perspective of the planning process.

The most significant conclusion to be drawn is that poor configuration of the planning process comes from poor configuration of the management accounting attributes. Managers are aware of their needs and the resources firms require to provide support for proposed actions. The findings of this study enable managers to understand different profiles and to make decisions regarding the appropriate profile for their needs.

Although treating strategic planning and budget as independent issues, this study consider these two variables together in the cluster analysis. However, the impact of strategic planning on budget, and vice versa, was not specifically examined in the present study; this relationships is worthy of further investigation in future research.

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