▪ Advances in Scientific and Applied Accounting, ▪ ISSN 1983-8611 ▪ São Paulo ▪ v.16, n.3 ▪ p. 023-036 ▪ Set. / Dez. de 2023
ASAA
▪ DOI: 10.14392/asaa.2023160302

Performance evaluation and forecasting functions and the perceived value of the budget

Daniel Magalhães Mucci[1], **Franciele Beck**[2], **Fábio Frezatti**[1]

[1]Universidade de São Paulo, São Paulo, São Paulo, Brazil.
[2]Universidade Regional de Blumenau, Santa Catarina, Blumenau, Brazil.

[1]danielmmucci@gmail.com
[2]fbeck@furb.br
[3]frezatti@usp.br

Edited by
Diane Rossi Maximiano Reina

Abstract

Objective: To investigate the association between performance evaluation and forecasting functions and the value perceived by managers concerning the budget, considering jointly the logics of trade-off and the predominance among the budgetary functions.
Methodology: A survey was conducted with a sample of 109 medium and large-sized companies that use budgeting. The data were analyzed using Structural Equation Modeling.
Results: First, the results indicate that the simultaneous use of the budget for performance evaluation and forecasting functions leads to a decrease in the value perceived by managers concerning the budget, signaling the presence of a potential trade-off between these functions. Second, this study also investigated to what extent the predominance of the budget for one of the two functions would mitigate the observed trade-off, but the results were not significant.
Contributions: This research provides evidence contributing to the discussion of the trade-off between performance evaluation and forecasting functions but does not support that the predominance of one function over the other reduces this tension. This outcome adds to the evidence from previous studies. From a practical standpoint, the study shows that these functions, individually, might encourage managers to recognize the importance of the budget, yet it demonstrates a potential trade-off between these functions, with a higher perceived value associated with the performance evaluation function.

Keywords: Budget functions; Performance evaluation; Forecasting; Managers' perceived value with the budget.

How to cite:

Mucci, D. M., Beck, F., & Frezatti, F. Performance Evaluation and Forecasting Functions and the Perceived Value of the Budget. Advances in Scientific and Applied Accounting, 009–022/023. https://doi.org/10.14392/asaa.2023160302

Submitted: 19 April 2023
Revisions required on: 5 May 2023
Submitted to new round: 17 August 2023
Accepted: 7 September 2023

Introduction

Planning represents one of the key stages in the management process, and as such, organizations devote considerable time and effort to activities such as resource allocation, goal definition and agreement, monitoring, and variance analysis (Libby & Lindsay, 2010; Mucci et al., 2016; Sponem & Lambert, 2016). It can be asserted that the quality of planning, operationalized by its degree of accuracy, is a fundamental attribute for steering the management process and optimizing an organization's economic outcomes (Frezatti et al., 2022). This is because highly accurate plans facilitate tactical and operational decisions related to sales, procurement, production, and other aspects within an organization (Brüggen et al., 2021; Cassar & Gibson, 2008; Frezatti et al., 2022; Jordan & Messner, 2020), as well as serving as a key attribute for the manager's performance evaluation and that of their business unit (Hartmann, 2000).

Budgeting has, for decades, been one of the primary mechanisms for operational planning in businesses (Libby & Lindsay, 2010; Sponem & Lambert, 2016). The budget plays a central role in the Management Control System as a cybernetic control, allowing for the definition and monitoring of performance goals through variance analysis, adjustments in actions, and the assessment of results achieved by managers (Malmi & Brown, 2008). Dealing with the normal tensions of management at all levels and areas, this mechanism is subject to many inquiries from studies that have coined it a "necessary evil" (Wallander, 1999) or a "perverse instrument" (Jensen, 2001), although other works argue the need to address criticisms with a comprehensive analytical approach (Frezatti et al., 2010; Sponem & Lambert, 2016).

These inquiries have become more frequent in academia over the past two decades (Hansen et al., 2003) and also in the professional context (Otti & Brouwer, 2021). Nevertheless, it has remained as the predominant management mechanism over the years (Libby & Lindsay, 2010; Sponem & Lambert, 2016). In this regard, researchers have empirically investigated various characteristics and functions attributed to budgeting in companies, such as planning, coordination, control, and performance evaluation (Hansen & Van der Stede, 2004; Henri et al., 2020; Mucci et al., 2016; Sivabalan et al., 2009; Sponem & Lambert, 2016). In line with previous studies, in this research, the terminologies functions, roles, purposes, objectives, and reasons of budgeting can be understood interchangeably (e.g., Hansen & Van der Stede, 2004).

It is worth noting that there are different perspectives related to the multiple functions of budgeting, considering, on the one hand, the contradictory logic, meaning that certain functions may be seen as conflicting with each other (Barrett & Fraser, 1977; Churchill, 1984), and on the other hand, the interconnected view, meaning that functions complement each other and enhance the potential benefits of budgeting (Arnold & Gillenkirch, 2015). Recently, Henri et al. (2020) also provided empirical evidence of the "coexistence" of budgeting functions by discussing the predominance logic and investigating particularly the performance evaluation and forecasting functions in Canadian companies, although these pieces of evidence are still in their infancy. The performance evaluation function is related to the emphasis of budgeting as a goal-setting contract, i.e., as a commitment that will guide performance evaluation and managerial rewards (Hartmann, 2000). As for the forecasting function, it refers to "periodic updates of budgets to maintain a constant future-oriented planning horizon, support decision-making, and enhance coordination" (Henri et al., 2020, p. 258).

A significant number of previous studies suggest the existence of tensions, particularly between the performance evaluation and forecasting functions of budgeting (Arnold & Gillenkirch, 2015; Frow et al., 2010; Haka & Krishnan, 2005), but this does not necessarily mean that these budgeting functions cannot and should not coexist (Henri et al., 2020). This discussion is relevant because there are challenges related to the predominance versus the balance of these functions, given that they may require different design characteristics and impact the perceived benefits to managers differently depending on their use of the budget (Henri et al., 2020; Sponem & Lambert, 2016). The perceived value by managers with the budget reflects their satisfaction with the budgeting process and the importance of the budget as a management tool. In Brazil, previous studies have focused on the complementarity between budgeting functions or the relationship between budget characteristics, functions, and the perceived value by managers with the budget (e.g., Defaveri et al., 2019; Kruger et al., 2022; Mucci et al., 2016), with the discussion of trade-offs and tensions between functions still in its infancy.

Recently, Henri et al. (2020) provided evidence on the consequences of tensions (trade-offs) and budget predominance for certain functions, i.e., when one function is emphasized at the expense of the other. Although Henri et al. (2020) demonstrated the trade-off between the performance evaluation and forecasting functions, as well as significant differences in perceived value with the budget when one of the functions is predominant, these authors do not discuss to what extent predominance versus non-predominance would affect the association of the trade-off between the two functions and managers' perceived value with the budget. The argument is that tension could be mitigated (increased) when one of

the functions is predominant (non-predominant).

Thus, this present article aims to investigate the association between the performance evaluation and forecasting functions and the perceived value by managers with the budget, considering both the logic of trade-offs and the predominance of these budgetary functions simultaneously.

The study provides several contributions as described below. First, despite previous empirical studies confirming different budgetary functions within organizations (Hansen & Van der Stede, 2004; Mucci et al., 2016), this article aims to advance the discussion on tensions between the performance evaluation and forecasting functions (e.g., Arnold & Artz, 2019; Henri et al., 2020), providing evidence from medium and large-sized companies operating in Brazil. Since both studied functions (performance evaluation and forecasting) are typically influenced by environmental factors (e.g., uncertainty, unpredictability, turbulence) (e.g., Haka & Krishnan, 2005; Libby & Lindsay, 2010), evidence from different institutional contexts, such as an emerging economy (Xu & Meyer, 2013), is important for advancing knowledge.

Secondly, this study provides insights into the tensions between budgetary functions, focusing on both the logic of trade-offs and predominance. In particular, the results support the trade-off logic (through the interaction term between the two functions - performance evaluation and forecasting), in line with the evidence presented by Henri et al. (2020) for Canadian companies, where a higher level of perceived value is associated with the performance evaluation function (Defaveri et al., 2019). As demonstrated graphically, perceived value with the budget is higher when the performance evaluation function is emphasized, regardless of the forecasting function. In a context of low budget usage for performance evaluation, the perceived value of managers with the budget depends on the use of the budget for forecasting. Unlike Henri et al. (2020), this research integrates the logic of predominance with that of trade-offs, and the results do not support the idea that predominance of one function over the other attenuates the effects of the interaction between the functions on the perceived value of managers with the budget.

2. Literature Review

2.1. Budget functions

Budgeting is one of the primary mechanisms employed by companies worldwide to assist in the management process and decision-making (Libby & Lindsay, 2010; Sponem & Lambert, 2016). Budgeting can be conceived as a process that involves stages of preparation (ex-ante) and execution and control (ex-post). There are different budget models discussed in the literature (Matejka et al., 2021; Mucci et al., 2021; Sponem & Lambert, 2016), but typically, budgets are treated as formal operational and financial plans with an annual horizon.

The discussion of the multiple functions of budgeting has been present in the literature for at least half a century (Barrett & Fraser, 1977; Churchill, 1984). As one of the primary management mechanisms, various functions are attributed to budgeting related to both operational (operational planning and performance evaluation) and strategic (communication of objectives and strategy formulation) levels (Hansen & Van der Stede, 2004). Some authors have focused on two macro-functions of budgeting, namely the planning function and the dialogue function (Kruger et al., 2022; Mucci et al., 2016).

Other authors investigate the operational functions of budgeting in more detail, considering three macro-functions, which include planning (i.e., operational planning and goal setting, forecasting, coordination and alignment of activities, budget variance analysis), resource allocation (i.e., resource allocation and expenditure authorization), and performance evaluation (i.e., measuring manager and business unit performance and linking the budget with incentives) (Becker et al., 2016; Sivabalan et al., 2009).

On the other hand, Sponem and Lambert (2016) and Mucci et al. (2021) discuss four budget functions and their degree in different budget configurations, which are highlighted as follows: (1) the strategic function (related to strategy implementation, forecasting, and risk management); (2) the managerial function (involves performance evaluation, goal contracts, and incentives); (3) the administrative function (allocation and expenditure authorization); (4) the reporting function for owners, investors, associates, and banks.

Previous studies have been conducted to investigate the relationship between budget functions and managers' perceived value with the budget (Da Luz & Lavarda, 2021; Hansen & Van der Stede, 2004; Libby & Lindsay, 2010; Mucci et al., 2016). For instance, Hansen and Van der Stede (2004) demonstrate that managers' perceived value with the corporate budget is positively correlated with the functions of operational planning, performance evaluation, goal communication, and strategy formulation. Mucci et al. (2016), on the other hand, suggest that both planning functions (i.e., coordination of areas, determination of operational volumes) and dialogue functions (i.e., communication of objectives and ideas, creation of awareness of what needs to be achieved) are positively related to the perceived usefulness and relevance of the budget. Defaveri et al. (2019) suggest that the performance evaluation function is important for satisfaction with the budgeting process in a management consulting company.

It is worth noting that previous studies have focused on the relationship between budget functions and managers' perceived value with the budget individually. However, there is limited evidence on the tensions between multiple budget functions and their implications for managers' perceived value with the budget (Henri et al., 2020). The perceived value of managers with the budget is an important attitude, characterized by the significance of the budget for management and managers' satisfaction with the mechanism. It reflects the benefits that managers recognize through the implementation of budgeting practices in their respective organizations (e.g., Libby & Lindsay, 2010; Sponem & Lambert, 2016). This article, therefore, investigates the potential tensions between the performance evaluation and forecasting functions, considering both the trade-off and predominance perspectives (Henri et al., 2020).

2.2. "Tensions associated with the simultaneous use of the budget for multiple functions"

The literature addressing the emphasis on one or more simultaneous budget functions is still controversial, as the budgeting environment is subject to various characteristics and promotes different types of tensions (Frezatti et al., 2010). Some studies argue for the existence of tensions between multiple functions, such as those related to planning and motivating managers, considering that the design characteristics of the budget tend to be distinct in order for the budget to fulfill its functions. This is also demonstrated in previous studies that employed configurational logic (Mucci et al., 2022; Sponem & Lambert, 2016). Furthermore, there are studies suggesting complementarity between some of the budget functions, such as those related to communication and strategy formulation and performance evaluation (Fisher et al., 2002; Hansen & Van der Stede, 2004), and planning and dialogue (Mucci et al., 2016).

More recently, Henri et al. (2020) empirically investigated the relationship between tensions arising from the simultaneous use of the budget for performance evaluation and forecasting functions and their impact on managers' perceived value with the budget, supporting the logic known as the trade-off between these functions. On one hand, as a performance evaluation mechanism, the budget emphasizes management contracts or commitments that guide the evaluation of managers and departments, as well as providing the basis for an incentive system based on performance goals (Hartmann, 2000). This perspective of control and management pressure for goal achievement was addressed by Hartmann (2000) within the Reliance on Accounting Performance Measures (RAPM) framework. Within this understanding, companies would seek to maintain rigid budgetary goals and would not revise them throughout the year (static budget), even in a changing context. This can occur due to issues related to the central role of the budget in the company, the management model, and the governance structure to which the budget is subjected.

On the other hand, the forecasting function is built on the idea that the budget can generate predictability of future assumptions and outcomes, providing guidance and support for operational decision-making in an uncertain and rapidly changing context (Hansen, 2011; Henri et al., 2020). Bourmistrov and Kaarbøe (2013) clarify these concepts by contrasting the definition of "commitment to budgetary goals" and "more current budgetary forecasts." While goals represent commitments by managers, forecasts are expectations of future scenarios in their most current perspective. From this perspective, companies could maintain rigid budgetary goals, with re-estimations and re-forecasts serving as tools for budget monitoring and decision support in a dynamic context (Frezatti et al., 2022), or as a mechanism enabling the company to adopt a continuous budgeting process (Bourmistrov & Kaarbøe, 2013; Mannes et al., 2021). The perception of tension between these two functions arises from the fact that re-estimations or budget revisions can introduce noise into the performance evaluation process based on the budget. Table 1 contrasts the objectives and pillars of each of these two macro-functions of the budget from a trade-off perspective.

Table 1
Comparison between the uses of the budget for Performance Evaluation and Forecasting within the trade-off perspective

Attributes	Performance Evaluation	Forecasting
Main goals	Motivation and influence of behaviors; Monitoring current results versus a parameter defined (goal) in the past.	Definition of budget forecasts with updated assumptions; Anticipation of the future scenario.
Pillars of the macro-function	Budget as a contract Budget as a parameter for evaluating the manager and the business unit's performance; Budget as the basis for manager incentives/rewards.	Budget as a plan that expresses more likely scenarios; Accurate definition of assumptions.
Emphasized parameter	Fixed goal	Re-estimations and flexible goals

FSource: Developed by the authors based on elements from the literature (i.e., Bourmistrov & Kaarbøe, 2013; Frezatti et al., 2022; Hartmann, 2000; Henri et al., 2020; Mucci et al., 2016)

In summary, the literature discussing tensions in budgeting for multiple functions can be divided into two main views: complementary and contradictory. First, the "interrelated" or complementary view (i.e., Henri et al., 2020) suggests that there is alignment between multiple budget functions and that it is possible to reconcile the benefits (Fisher et al. 2002; Frow et al., 2010), such that the functions could stimulate dialogue, discussion, and learning, with the resulting benefits being related to a greater perceived value of the budget (Mucci et al., 2016). Second, the contradictory view has typically been debated in the literature considering the potential conflict between the performance evaluation and forecasting functions of the budget (Henri et al., 2020). This perspective argues for the existence of a potential trade-off between these functions,

meaning that a higher simultaneous use of both functions would result in a lower level of managers' perceived value with the budget, reflecting managers' satisfaction with the budgeting process and the importance of the budget as a management tool.

This reasoning can be guided by certain reasons explained below. First, in a context where the budget is extensively used for performance evaluation purposes, where managers are committed to achieving the budgeted goals set ex-ante, re-estimations or revisions of budget goals (forecasting function), at one extreme, could cause noise, questioning, and a lack of commitment to the contract, which is the instrument used for evaluating the manager's performance. Additionally, an excessive focus on control (performance evaluation) alongside a more current perspective of the future (forecasting) may encourage dysfunctional behaviors on the part of managers (gaming behaviors), such as withholding or distorting information (Barrett & Fraser 1977; Hansen et al. 2003; Hope & Fraser 2003; Libby & Lindsay, 2010), conservative behaviors (building reserves), non-cooperative behaviors, among others (Frezatti et al., 2011; Libby & Lindsay, 2010), which will reduce the perceived value of the budget.

Second, another underlying counterpoint to these budget functions is that performance evaluation typically requires fixed parameters for comparison and judgment. Changing budget goals throughout the year, except in times of crisis and/or economic shocks (as experienced during the pandemic), can confuse managers about the commitments made, and therefore, from a control perspective, should be avoided to enhance managers' perceived value of the budget. Although periodic revisions do not necessarily entail a renegotiation of budget goals, we follow the reasoning of Henri et al. (2020, p. 2) that "periodic revisions may make the goals not be considered a true and strong commitment from superiors." On the other hand, for the forecasting function, updates of budgetary estimates would be crucial to better reflect reality (accuracy) and allow for adjustments in response to changing contexts over time (Marginson & Ogden, 2005). Based on the arguments presented, we propose the following research hypothesis:

H1: The simultaneous use of the budget for the functions of performance evaluation and forecasting is negatively associated with the managers' perceived value of the budget.

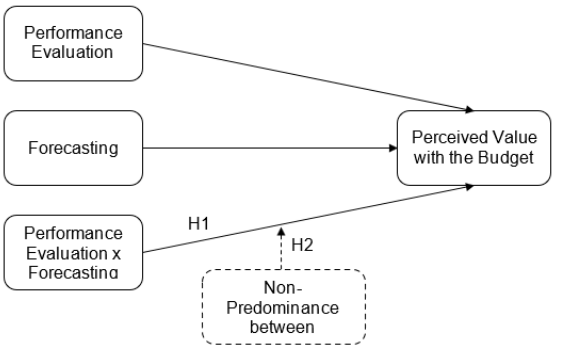
Consequently, Henri et al. (2020, p. 3) argue that even "assuming that budgets cannot equally well serve both purposes at the same time, this does not necessarily mean that both purposes cannot be combined to some extent." Based on this discussion, these authors propose the notion of predominance, considering that each budget function can be predominant in a specific context. Additionally, we argue that the predominance of one of the budget functions tends to reduce potential tensions when the budget is used simultaneously for both performance evaluation and forecasting functions, thereby increasing managers' perceived value of the budget.

Integrating the logic of trade-off and predominance (Henri et al., 2020), we discuss to what extent the proposed negative relationship in hypothesis 1 changes (increases or mitigates) in organizations where one of the functions (performance evaluation or forecasting) versus none of the functions are predominant. In particular, we argue that the negative relationship between the simultaneous use of the budget for both functions and the managers' perceived value of the budget could be increased (mitigated) when none of the functions is predominant (when one of the functions is predominant). Based on the above, we propose the following research hypothesis:

H_2: The negative relationship between the simultaneous use of the budget for the functions of performance evaluation and forecasting and the managers' perceived value of the budget will be stronger when neither of the two functions is predominant.

The theoretical model of the present research is presented in Figure 1.

Figure 1
Research Theoretical Model



3. Research Methodology

3.1. Design and Sample

A survey was conducted with managers primarily in the finance area who work in medium and large-sized companies in Brazil. The survey, as a primary data collection method, is considered one of the main research methods in the field of management accounting (Van der Stede et al., 2005). The research population is derived from two main sources: the first from managers identified on LinkedIn® (from companies in the Valor 1000 database), and the second from a private email list of executives shared by a finance professional. Data collection took place between May 2018 and March 2019, therefore before the pandemic period. A total of

115 complete questionnaires were received, of which those from medium and large-sized companies (with over 50 employees) that reported using the budget were considered valid for this research. The final convenience sample consists of 109 companies.

We present in Table 2 the participant information for the research, considering both the company (sector and size) and the manager (hierarchical level and field of expertise). Regarding the sector, the majority of participating companies operate in the services sector (44.0%) and the industrial sector (40.4%), with 86.2% of the companies being large-scale enterprises (with over 250 employees), and of those, 38.5% having more than 2000 employees. The number of employees reflects relevant management characteristics, such as operational complexity and the level of decentralization, which are sensitive aspects for discussing management accounting mechanisms like budgeting. Concerning annual revenue, 24.8% of the companies have revenues ranging from 4.8 million to 300 million, 36.7% have revenues between 300 million and 1 billion, and 38.5% have revenues exceeding 1 billion (based on 2017 data and measured in Brazilian reais).

The respondents are predominantly executives from finance and accounting departments (74.3%) and management (7.3%), reporting directly to shareholders or the board of directors and the Chief Executive Officer (CEO) (Level 1 = 53.2%) and the executive board (Level 2 = 37.6%). The present sample is more diverse than previous studies that focused on industrial companies (Henri et al., 2020) and similar to studies that included companies from various sectors and sizes (Sponem & Lambert, 2016). This study has a higher proportion of large-scale companies (in terms of the number of employees or revenue).

Table 2
Descriptive statistics of respondents

	N	%		n	%
Panel A. Sector			*Panel D. Respondent's Hierarchical Level*		
Services	48	44,0%	Level 1	58	53.2%
Industry	44	40,4%	Level 2	41	37.6%
Commerce	7	6,4%	Level 3	6	5.5%
Missing	10	9,2%	*Missing*	4	3.7%
			Panel E. Respondent's Area of Activity		
Panel B. Company Size (Number of Employees)			Finance	81	74.3%
Between 50 and 249	15	13,8%	Management	8	7.3%
Between 250 and 2000	52	47,7%	Others	17	15.6%
More than 2000	42	38,5%	*Missing*	3	2.8%
Panel C. Company Size (2017 Revenue in Brazilian Reais)					
Between 4.8 and 300 million	27	24,8%			
Between 300 million and 1 billion	40	36,7%			
Above 1 billion	42	38,5%			

3.2. Instruments

The research instruments were developed based on items used by Sponem and Lambert (2016). The proposed items were compared to those used by Henri et al. (2020) to achieve face validity. A pilot test was conducted with three academics (graduate students and professors) and two professionals working in large companies. In this study, we discussed two constructs: the use of the budget for performance evaluation and the use of the budget for forecasting, as well as the perceived value of the budget by managers. The latent variables were measured using the reflective logic (e.g., Bedford & Speklé, 2018), with the indicators highlighted below. Descriptive statistics for these items are presented in Table 3.

Performance Evaluation Function (PerfEv). Four items from Sponem and Lambert (2016) were used to reflect the budget's role in performance evaluation, considering the use of budgetary goals defined in the budget plan to measure and assess performance and incentivize managers. These items are aligned with those used by Henri et al. (2020).

Forecasting Function (Forecasting). Three items were used, one of which was proposed by Sponem and Lambert (2016) as "re-forecast," and the other two were developed for the purposes of this research and are measured using dummy variables, treated as a sum. Therefore, three items were used to measure the budget's role in forecasting. These items differ from those originally used by Henri et al. (2020) but are aligned with forecasting studies that consider the use of frequent revisions and re-estimations as triggers for the management process.

Interaction Term (Inter*). The interaction term is measured by multiplying the factor score of the latent variables of Performance Evaluation and Forecasting, following the logic called the "two-step" approach.

Perceived Value of Budget Use (Value). Perceived value was measured through three indicators used by Sponem and Lambert (2016). This construct encompasses the perceived value of the budget as an important management tool and the satisfaction of managers with the budget, as an indirect measure of value.

Non-predominance of performance evaluation and forecasting functions (NoPredom). Companies were divided into two groups: (i) predominant function for performance evaluation or predominant function for forecasting, and (ii) no predominant function of the budget. The groups were divided considering the presence (or absence) of predominant value of one use over the other, which was qualified as a deviation between uses greater than 0.5 times the standard deviation (in absolute value) of the new variable generated to calculate the difference between the levels of functions per observation in our sample (called

DeltaUso), a procedure aligned with Henri et al. (2020). The dummy variable assigns a value of 1 to companies with no predominance, i.e., those companies with values between -0.5 and 0.5 standard deviations of the deviation variable (DeltaUso), with the base (0) being companies with predominance of at least one of the performance evaluation or forecasting functions.

Controls. As control variables used in the structural equation analysis included external contingency variables (level of uncertainty and sector) and internal ones (size, listed on the stock exchange) (i.e., Arnold & Artz, 2019; Henri et al., 2020), as well as the rigidity of budget targets (budget revisions) (Haka & Krishnan, 2005): (1) the level of uncertainty measured from three items adapted from Kruis et al. (2016), comprising pressure, unpredictability, and uncertainty in the environment; (2) sector, considering the industrial and service sectors, with retail companies as the base category; (3) size, considering medium size (50 to 249 employees) and large size (250 to 2000 employees), with companies above 2000 employees as the base category; (4) whether the company is listed on the stock exchange, i.e., subject to regular financial reporting to the public. Concerning the budgeting process, we controlled for the variable extent of budget revisions (GoalReview), using the item "Budget targets cannot be changed throughout the year," measured on a 5-point Likert scale (Sponem & Lambert, 2016), in order to differentiate between forecasting and budget target revisions.

3.3. Data analysis methods

Structural Equation Modeling (SEM) was adopted as the main data analysis method using SmartPLS® 4.0 software, employing the Partial Least Squares (PLS-SEM) method. This method was chosen for its ability to estimate complex models with a limited sample size, not imposing assumptions about data distribution, and supporting an exploratory perspective (Hair et al., 2021). We also used power analysis through GPower 3.1.9.2 software (Faul et al., 2007), and the results suggest that our sample (n=109) is adequate to detect an effect size greater than 0.1487 as statistically significant, considering the following parameters: statistical power of 0.8, significance level of 5% (Type I error), and six predictors (Nitzl, 2016). Regarding the validity of the study, firstly, we used mostly measures based on previous studies, and the instrument itself ensures the confidentiality of participants' responses. Next, we applied Harman's single-factor test (1976), which identifies Common Method Bias (CMB). In this test, we found three factors with eigenvalues greater than one, with the first factor explaining 40.57% of the total variance. The results suggest that common method bias does not significantly affect the interpretation of the results.

4. Results Analysis

4.1. Descriptive analysis of the research items and variables

The descriptive analysis of the items is presented in Table 3. The items related to the performance evaluation of budget performance (PerfEv1 and PerfEv2) show averages close to 4.0, suggesting that manager performance is negatively impacted when budget goals are not met. On the other hand, the averages related to the assessment of managers' performance through budget goals (PerfEv3) and the budget as a basis for rewarding managers (PerfEv4) were lower, at 3.23 and 3.13, respectively.

Regarding the items that measure the use of the budget for forecasting, we observe an average of 3.44 with a standard deviation of 1.31 for the item that deals with the extent to which the budget is subject to regular revision to account for changes in the environment (Forec1). The other items measured as dummies suggest that 81% of the companies perform the re-projection of all financial statements (Forec2), and 88% use these estimates as parameters for analytical purposes (Forec3).

Therefore, even if not done frequently, the majority of companies practice re-estimations of budget assumptions, considering the different perspectives that financial statements represent (financial position, income, and cash flow). However, this does not mean that budget targets are reviewed and/or renegotiated throughout the year. The budget revision indicator, used as a control variable ("Budget targets cannot be changed during the year"), has an average of 3.12, a median of 3.0, and a standard deviation of 1.62, with responses ranging from 1 to 5.

As for the variable "value perceived with the budget," the average values for satisfaction with the budgeting process (Value1) and managers' satisfaction with the budgeting process (Value2) are 6.6 and 3.46, respectively, indicating that, in general, there is a moderate level of satisfaction (close to the neutral zone of the Likert scale). On the other hand, the perceived importance of the budget as a management tool (Value3) has a high average of 4.55 and a low standard deviation of 0.89, suggesting that the sample, in general, considers the budget as a crucial tool in management.

4.2. Structural Equation Analysis

4.2.1. Measurement Model

As data analysis procedures employed in this study utilized Structural Equation Modeling (SEM). Initially, we assessed the convergent validity and construct reliability (Hair et al., 2021), as presented in Tables 3 and Table 4. As a criterion for convergent validity, we highlighted factor loadings above 0.7 (Loadings shown in Table 3). We also examined the parameters of Average Variance Extracted (AVE) and Composite Reliability (CR), with values exceeding 0.5 and 0.7, respectively (Table 4). Discriminant validity was assessed through the Fornell and Larcker (1981) matrix, where the results suggest that the diagonal values (the square root of AVE) are higher than

Table 3
Descriptive analysis of the variables used in the study

Variables	Statements	Rng	Min	Max	Mean	Median	DP	Loadings
Performance Evaluation (developed based on Sponem & Lambert, 2016; Henri et al., 2020)								
PerfEv1	Failing to meet budgetary goals has a negative impact on performance.	1-5	1	5	4,06	4,00	1,11	0,70
PerfEv2	Not meeting budgetary goals has a significant impact on the performance evaluations of operational managers.	1-5	1	5	3,77	4,00	1,11	0,84
PerfEv3	The performance of operational managers is primarily judged based on their ability to meet their budgetary goals	1-5	1	5	3,23	3,00	1,12	0,88
PerfEv4	The rewards for operational managers largely depend on their budgetary goals.	1-5	1	5	3,13	3,00	1,39	0,81
Forecasting (developed based on Sponem & Lambert, 2016; Henri et al., 2020)								
Forec1	The budget is subject to regular revision to account for changes in the environment.	1-5	1	5	3,44	4,00	1,31	0,74
Forec2	These reassessments involve the re-projection of all financial statements.	Dummy	0	1	0,81	1,00	0,39	0,92
Forec3	These reassessments are utilized as benchmarks for analytical purposes.	Dummy	0	1	0,88	1,00	0,33	
Perceived Value with Budgeting (developed based on Sponem & Lambert, 2016)								
Value1	I am satisfied with the budgeting process.	1-5	1	5	3,60	4,00	1,10	0,90
Value2	The managers are satisfied with the budgeting process.	1-5	1	5	3,46	4,00	1,09	0,86
Value3	The budget is a crucial management tool.	1-5	1	5	4,55	5,00	0,89	0,82

Caption: Range (Rng), Minimum (Min), Maximum (Max), Mean, Median, Standard Deviation (SD).
Note 1: Variables with a 5-point Likert scale reflect respondent agreement with the statement, with the scale ranging from (1) Strongly Disagree to (5) Strongly Agree. Dummy variables, on the other hand, indicate 1 for 'Yes' and 0 for 'No,' with their mean representing the proportion of respondents who selected 'Yes.' It is worth noting that in the measurement model, variables Forec2 and Forec3 were treated as a single variable, summed together, ranging from 0 to 2, for operationalization in SmartPLS4 software.

the correlations among latent variables. Additionally, we employed the heterotrait-monotrait ratio of correlations (HTMT) parameter, with results below the diagonal being less than 0.85.

Table 4
Analysis of Convergent and Discriminant Validity

	Performance Evaluation	Forecasting	Perceived Value with the Budget
Performance evaluation	**0,811**	0,251	0,566
Forecasting	0,313	**0,837**	0,525
Perceived value with the budget	0,492	0,404	**0,863**
Average Variance Extracted (AVE)	0.658	0.701	0.745
Composite Reliability (rho_c)	0.884	0.823	0.897

Note: The values on the diagonal are the square roots of the Average Variance Extracted (AVE). The values below the diagonal are the correlations between latent variables, and values above the diagonal represent the HTMT analysis parameter.

4.2.2. Structural Model

Subsequently, we proceeded with the analysis of the structural model (bootstrap procedure with 5,000 repetitions, bias-corrected confidence level, and two-tailed test). For this analysis, we considered parameters such as structural coefficient (β), effect size (f^2), coefficient of determination (R^2), and multicollinearity assessed through the Variance Inflation Factor (VIF) (Hair et al., 2021). The SmartPLS 4.0® software was employed for these analyses.

The results of the structural model are presented in Table 5, which indicates that both budgeting functions, whether for performance evaluation (β= 0.279; p-value < 0.01; f^2= 0.098) and forecasting (β= 0.219; p-value < 0.02; f^2= 0.062), are positively associated with a higher level of perceived value by managers with the budget.

Regarding the interaction term between the functions (PerfEv*Forecasting), we observe a statistically significant negative coefficient at a 10% significance level, with a small effect size based on Cohen (1988) (β= -0.218; p-value < 0.10; f^2= 0.063). The results for the direct effects between the functions and managers' perceived value are consistent with those demonstrated in Henri et al. (2020) and suggest a high effect size (interaction parameter) for the relationship between the performance evaluation and forecasting functions with managers' perceived value of the budget. This result is also aligned with the evidence presented by Hansen and Van der Stede (2004) and Wagner et al. (2021), considering the positive relationship between the budget's performance evaluation function and satisfaction or perceived value, as qualitatively evidenced by national studies (Defaveri et al., 2019). At a 10% significance level, it can be concluded that the joint use of the budget for performance evaluation and forecasting is negatively related to managers' perceived value of the budget, supporting the contradictory aspect of the functions, also known as the trade-off logic (Arnold & Artz, 2019; Barrett & Fraser, 1977; Haka & Krishnan, 2005), which was empirically corroborated by Henri et al. (2020).

The inclusion of control variables did not change the study's conclusions. In particular, none of the control variables related to the external environment (sector and uncertainty) and internal factors (size and being listed on the stock exchange) were statistically significant at the 5% significance level. The variable "goal rigidity," representing aspects related to the budgeting process and discussed in light of its functions, was statistically significant (β= 0.201; p-value < 0.05; f^2= 0.062). This suggests that the more rigid and fixed the budgetary goals ("Budgetary goals cannot be altered throughout the year"), the greater the managers' perception of value with the budget.

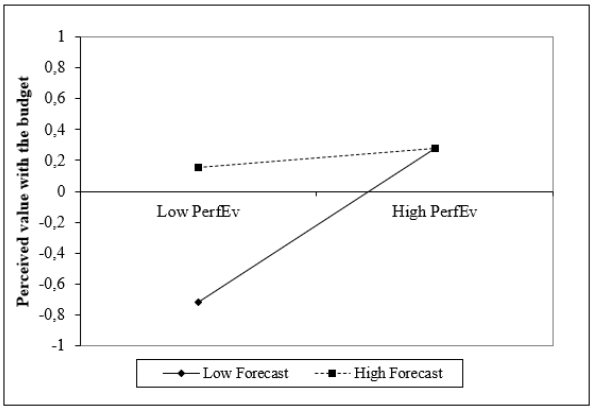
Table 5
Structural Equation Model

	β	P values	f^2	β	P values	f^2	β	P values	f^2
PerfEv-> Value	**0,42**	**0,00**	**0,24**	**0,32**	**0,00**	**0,13**	**0,28**	**0,00**	**0,10**
Forecasting -> Value	**0,30**	**0,00**	**0,13**	**0,26**	**0,01**	**0,08**	**0,22**	**0,02**	**0,06**
Inter* -> Value							**-0,22**	**0,07**	**0,06**
Uncertainty-> Value				0,06	0,55	0,01	0,01	0,91	0,00
Sector -> Value				0,11	0,58	0,00	0,11	0,60	0,00
Size-> Value				-0,37	0,22	0,02	-0,32	0,29	0,02
Listed -> Value				-0,21	0,23	0,01	-0,21	0,22	0,01
GoalReview -> Value				**0,21**	**0,02**	**0,06**	**0,20**	**0,03**	**0,06**

Note 1: Cohen's (1988) classification for direct effects is as follows: small effect (f^2 = 0.02), medium effect (f^2 = 0.15), and large effect (f^2 = 0.35). According to Hair et al. (2021), the classification for moderation/interaction effects is: small (f^2 = 0.005), medium (f^2 = 0.01), and large (f^2 = 0.025).
Note 2: Uncertainty, Sector, Size, Listing Status on the stock exchange, and budgetary goal revisions are control variables in our model.
Note 3: The interaction term is measured by multiplying the latent variable factor scores of Performance Evaluation and Forecasting, following the logic of the SmartPLS software referred to as the "two-stage" approach.

At a 10% significance level, this study demonstrates a statistically significant relationship of the interaction term with managers' perceived value of the budget. Therefore, we proceeded with the graphical analysis of this relationship, as shown in Figure 2.

Figure 2
Effect of the interaction between the uses of Performance Evaluation and Forecasting



Note: These results were generated based on the coefficients of the structural equation model presented in Table 5, including the control variables.

First, we demonstrate that companies that use the budget for performance evaluation have a higher level of perceived value, regardless of the extent to which the budget is used for forecasting. This is because the difference between the solid and hatched lines when perceived value is high (right side of the X-axis) is imperceptible. Furthermore, a high level of budget use for forecasting (represented by the hatched line) is graphically related to higher levels of perceived value, even when the use for performance evaluation is low. The graphical analysis potentially indicates the presence of a trade-off between the functions (at a 10% significance level), with conclusions aligning with the results indicated by Henri et al. (2020) for Canadian industrial companies with an average of 265 employees.

Finally, the findings presented in this section suggest the presence of a trade-off between the performance evaluation and forecasting functions of the budget. Additionally, the performance evaluation function emerges as the most relevant for managers' perceived value (Defaveri et al., 2019). To delve deeper into the discussion of tensions, we sought to expand on the discussion proposed by

Henri et al. (2020), investigating the extent to which the predominance (or non-predominance) of at least one of these two budget functions affects managers' perceived value, either attenuating or increasing the negative relationship observed. The results of the joint analysis of the trade-off and predominance are presented in Table 6. In our sample, based on calculations, 38.53% of the companies do not have either of the budget functions as predominant. Furthermore, among the total companies, 32.11% have predominance of the performance evaluation function, and 29.36% have predominance of the forecasting function.

The results of this moderation analysis, examining the relationship between the simultaneous use of the budget for performance evaluation and forecasting functions and managers' perceived value, were not altered by the dummy variable representing the group of companies that do not have either of these two functions as predominant. Therefore, the results do not support the hypothesis that the negative relationship between the simultaneous use of the budget and managers' perceived value of the budget would be stronger when neither of the two functions is predominant or, conversely, mitigated when at least one of the two functions is predominant. Furthermore, the analysis demonstrates that the predominance (or lack thereof) of the functions is not directly related to managers' perceived value of the budget. These results diverge from Henri (2020) since we did not observe statistically significant differences in managers' perceived value concerning the logic of predominance.

Table 6
Structural Equation Model with Predominance Analysis

	β	P values	f^2
PerfEv-> Value	**0.30**	**0.00**	**0.10**
Forecasting -> Value	**0.24**	**0.02**	**0.06**
Inter* -> Value	**-0.27**	**0.09**	**0.03**
NoPredom -> Value	-0.04	0.81	0.00
NoPredom x Inter* -> Value	0.10	0.69	0.00
Uncertainty-> Value	0.02	0.87	0.00
Sector -> Value	0.10	0.62	0.00
Size-> Value	-0.31	0.30	0.02
Listed -> Value	-0.20	0.27	0.01
GoalReview -> Value	0.20	0.03	0.06

Note: Group with neither of the two budget functions as predominant (NoPredom), with the base group being companies with a predominant budget function for either performance evaluation or forecasting.

4.3. Discussion of Results

Regarding the research hypotheses, firstly, the results of this study support the existence of a trade-off between the budget functions of performance evaluation and forecasting (Hypothesis 1) at a 10% significance level, as indicated by the simultaneous use of the budget for both functions. This result aligns with the rationale of previous studies, suggesting that budgets require distinct attributes to effectively fulfill these functions (Arnold & Artz, 2019; Barrett & Fraser, 1977; Haka & Krishnan, 2005; Henri et al., 2020). From the graphical analysis (Figure 2), we can observe that the gap between the lines narrows when the performance evaluation function is at a high level, leading to the highest level of perceived value by managers when both functions are at a high level.

Regarding the results within the perspective of discussing the logic of trade-off and predominance (Hypothesis 2), our findings suggest that there is no difference in managers' perceived value when considering the predominance of a specific budget function (or non-predominance). Furthermore, it appears that this element does not moderate (specifically, mitigate or increase) the relationship between the simultaneous use of performance evaluation and forecasting functions and managers' perceived value. Previous research suggests different pieces of evidence, with some indicating that multiple functions positively influence the perceived value of the budget (Hansen & Van der Stede, 2004; Mucci et al., 2016), while others suggest that one or a few budget functions may be predominant in certain organizations (Henri et al., 2020; Mucci et al., 2021; Sponem & Lambert, 2016), with special attention given to the performance evaluation function (Defaveri et al., 2019). Specifically, unlike Henri et al. (2020), the logic of predominance also did not prove to be decisive in investigating the level of managers' perceived value of the budget in the context of an emerging country like Brazil, considering medium and large-sized companies. Despite being suggested by previous studies (e.g., Haka & Krishnan, 2005), the uncertain and unpredictable environment did not appear to be significant in the present research.

In comparison to Henri et al.'s (2020) study, our results may not have yielded statistical differences concerning the predominance or non-predominance of budget functions for several reasons: (1) our sample primarily comprises large corporations, defined as those with over 250 employees (86.2% of the sample). In contrast, Henri et al. (2020) focused on medium-sized enterprises. Notably, large corporations tend to possess more decentralized and formal governance structures, thus favoring the utilization of budgets for performance evaluation; (2) the variables employed and the scale utilized to assess managers' perceived value of the budget differ between our study and that of Henri et al. In our research, we employed a 5-point scale, with generally high mean values. This scale, along with the nature of the responses, may not have effectively captured subtle distinctions; (3) the majority of our survey respondents were drawn from the finance and accounting departments. These individuals typically ascribe greater importance to the budget as

a management tool due to its coordination within their respective areas. Consequently, they tend to place value on both forecasting and performance evaluation functions concurrently. These variations in sample characteristics, measurement scales, and respondent demographics could explain the lack of statistically significant differences in our findings, particularly when compared to Henri et al.'s (2020) results from Canadian medium-sized enterprises. It underscores the necessity of considering contextual factors when interpreting research outcomes across diverse settings.

5. Conclusion

The present study aimed to investigate the association between the performance evaluation and forecasting functions and the perceived value of the budget by managers, considering both the trade-off and predominance logic among budget functions. The research conducted to address this objective involved conducting a survey, through which 109 valid responses were obtained. The majority of respondents are affiliated with the finance department (controllers, chief financial officers, financial/accounting managers) of medium and large-sized companies operating in the industrial, commercial, and service sectors in Brazil.

The results indicate that both the performance evaluation and forecasting functions are positively associated with a higher level of perceived value by managers regarding the budgetary mechanism. The study also provides evidence that the simultaneous use of the budget for both functions has a negative relationship with managers' perception of value. In other words, this study supports the logic of a trade-off between these functions, which aligns with previous research (i.e., Henri et al., 2020).

Furthermore, our graphical analysis suggests that this trade-off seems to hold when considering the average levels of budget functions, prompting the need to expand the discussion to the logic of predominance. Thus, this study also advances by exploring the predominance of functions. However, our results differ from those of Henri et al. (2020) in that they do not demonstrate differences in the levels of perceived value by managers when analyzing the predominant use of the budget. Importantly, predominance does not appear to mitigate the trade-off between the two budget functions studied.

The study contributes in several ways to the budget literature and to practitioners. First, it adds to the debate proposed by Henri et al. (2020) regarding the tensions between multiple budget functions, particularly addressing the logics of trade-off and predominance. This is significant because the literature in Brazil and internationally had primarily focused on investigating the direct and complementary relationship between functions and the perceived value of the budget. Therefore, there is a need for more studies that facilitate discussions on the existence and implications of potential trade-offs between budget functions. Second, it explores the extent to which budget functions are determinants of managers' perceived value through an analysis developed around different perspectives (trade-off and predominance). Third, the organizations examined in this research, operating in an emerging economy like Brazil, experience a different institutional environment compared to the Canadian companies studied by Henri et al. (2020). This contextual difference is an important aspect to consider, as it can influence the dynamics and outcomes of budget-related research.

In practical terms, the study demonstrates that these functions individually can stimulate managers to recognize the importance of the budget. However, it also reveals the existence of a trade-off between performance evaluation and forecasting functions. Additionally, emphasizing one function over the other does not reduce the trade-off or relate to a higher perception of value by managers. Ultimately, the article corroborates previous studies indicating that using the budget for performance measurement, evaluation, and incentive setting appears to be crucial for managers' perception of value. Based on these results, companies can reflect on the roles of the budget in their organizations to maximize its potential through positive managerial perceptions of this mechanism.

As limitations of the present research, firstly, the study was conducted with a non-probabilistic (convenience) sample, and the results are not generalizable to the population of Brazilian companies, as the sample profile mainly consists of large-sized companies. Additionally, the results are limited in terms of the definitions and operationalization of the constructs of performance evaluation, forecasting, and managers' perceived value of the budget, which were measured in this research using items from previous studies but validated as constructs in this study. Given that these variables and relationships are complex, future studies may consider other aspects of the budget (budgetary participation, budget revisions) as well as management mechanisms (subjective performance evaluation) that can contribute to understanding the uses of the budget in the company.

Furthermore, predominance reflects a concept of "relative emphasis," meaning that it expresses a significant difference in the level of budget use for one function over another. However, in practice, this emphasis can change, for example, during crisis periods (e.g., Becker et al., 2016), which could be investigated by future studies. Finally, it's worth noting that the scientific literature has been advancing in this field of multiple functions, providing evidence, for example, on the use of two separate budgets (Arnold & Artz, 2019) as well as the use of interdependent

and complementary tools alongside the budget to fulfill or assist in achieving these managerial functions, such as rolling forecasting practices. These discussions warrant future investigations that delve into potentially interdependent multiple budget functions, their interaction with other mechanisms, and their consequences for the organization and managers.

References

Arnold, M. C., & Gillenkirch, R. M. (2015). Using Negotiated Budgets for Planning and Performance Evaluation: An Experimental Study. *Accounting, Organisations and Society*, 43, 1–16. https://doi.org/10.1016/j.aos.2015.02.002

Arnold, M., & Artz, M. (2019). The use of a single budget or separate budgets for planning and performance evaluation. *Accounting, Organizations and Society*, 73, 50-67. https://doi.org/10.1016/j.aos.2018.06.001

Barrett, M. E., & Fraser, L. B. (1977). Conflicting Roles in Budgeting for Operations. *Harvard Business Review*, July–August: 137–46.

Becker, S. D., Mahlendorf, M. D., Schäffer, U., & Thaten, M. (2016). Budgeting in times of economic crisis. *Contemporary Accounting Research*, 33(4), 1489-1517. https://doi.org/10.1111/1911-3846.12222

Bedford, D. S., & Speklé, R. F. (2018). Construct validity in survey-based management accounting and control research. *Journal of Management Accounting Research*, 30(2), 23-58. https://doi.org/10.2308/jmar-51995

Bourmistrov, A., & Kaarbøe, K. (2013). From comfort to stretch zones: A field study of two multinational companies applying "beyond budgeting" ideas. *Management Accounting Research*, 24(3), 196-211. https://doi.org/10.1016/j.mar.2013.04.001

Brüggen, A., Grabner, I., & Sedatole, K. L. (2021). The folly of forecasting: The effects of a disaggregated demand forecasting system on forecast error, forecast positive bias, and inventory levels. *The Accounting Review*, 96(2), 127-152. https://doi.org/10.2308/tar-2018-0559

Cassar, G., & Gibson, B. (2008). Budgets, internal reports, and manager forecast accuracy. *Contemporary Accounting Research*, 25(3), 707-738. https://doi.org/10.1506/car.25.3.3

Churchill, N. C. (1984). Budget choice-planning vs control. *Harvard Business Review*, 62(4), 150.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd edition). Routledge: New York, NY, USA.

Da Luz, I. P., & Lavarda, C. E. F. (2021). Influência do isomorfismo institucional na aceitação do orçamento mediada pelas finalidades de planejamento e diálogo. *Revista de Contabilidade e Organizações*, 15, e174004-e174004. https://doi.org/10.11606/issn.1982-6486.rco.2021.174004

Defaveri, I. R., de Santi, D. G., & Toigo, L. A. (2019). Relacionando as características e funções do orçamento com a satisfação orçamentária em empresa de consultoria empresarial. *Revista Gestão Organizacional*, 12(2). https://doi.org/10.22277/rgo.v12i2.4375

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191. https://doi.org/10.3758/BF03193146

Fisher, J. G., Maines, L. A., Peffer, S. A., & Sprinkle, G. B. (2002). Using budgets for performance evaluation: Effects of resource allocation and horizontal information asymmetry on budget proposals, budget slack, and performance. *The Accounting Review*, 77(4), 847-865. https://doi.org/10.2308/accr.2002.77.4.847

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: algebra and statistics. *Journal of Marketing Research*, 18(3), 382-388. https://doi.org/10.1177/002224378101800313

Frezatti, F., Mucci, D. M., & Bido, D. D. S. (2022). Structure of planning and control artifacts and their accuracy in Brazilian family businesses. *Brazilian Administration Review*, 19. https://doi.org/10.1590/1807-7692bar2022210080

Frezatti, F., Nascimento, A. R. D., Junqueira, E., & Relvas, T. R. S. (2011). Processo orçamentário: uma aplicação da análise substantiva com utilização da grounded theory. *Organizações & Sociedade*, 18, 445-466. https://doi.org/10.1590/S1984-92302011000300006

Frezatti, F., Relvas, T. R. S., Junqueira, E., Nascimento, A. R. D., & Oyadomari, J. C. (2010). Críticas ao orçamento: problemas com o artefato ou a não utilização de uma abordagem abrangente de análise? *Advances in Scientific and Applied Accounting*, 3(2), 190-216. Recuperado de http://www.atena.org.br/revista/ojs-2.2.3-06/index.php/ASAA/article/viewFile/1764/1642

Frow, N., Marginson, D., & Ogden, S. (2010). "Continuous" budgeting: Reconciling budget flexibility with budgetary control. *Accounting, Organizations and Society*, 35(4), 444-461. https://doi.org/10.1016/j.aos.2009.10.003

Hair, J. F., Jr., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). A primer on partial least squares structural equation modeling (PLS-SEM). Sage publications, Inc: California, pp. 307.

Haka, S., & Krishnan, R. (2005). Budget type and performance—the moderating effect of uncertainty. *Australian Accounting Review*, 15(35), 3-13. https://doi.org/10.1111/j.1835-2561.2005.tb00247.x

Hansen, S. C. (2011). A theoretical analysis of the impact of adopting rolling budgets, activity-based budgeting and beyond budgeting. *European Accounting Review*, 20(2), 289-319. https://doi.org/10.1080/09638180.2010.496260

Hansen, S. C., & Van der Stede, W. A. (2004). Multiple facets of budgeting: an exploratory analysis. *Management Accounting Research*, 15(4), 415-439. https://doi.org/10.1016/j.mar.2004.08.001

Hansen, S. C., Otley, D. T., & Van der Stede, W. A. (2003). Practice developments in budgeting: an overview and research perspective. *Journal of Management Accounting Research,* 15, 95–116. https://doi.org/10.2308/jmar.2003.15.1.95

Harman, H. H. (1976). *Modern factor analysis*. University of Chicago Press.

Hartmann, F. G. (2000). The appropriateness of RAPM: toward the further development of theory. *Accounting, Organizations and Society*, 25(4-5), 451-482. https://doi.org/10.1016/S0361-3682(98)00036-1

Henri, J. F., Massicotte, S., & Arbour, D. (2020). Exploring the consequences of competing uses of budgets. *Australian Accounting Review*, 30(4), 257-268. https://doi.org/10.1111/auar.12287

Henttu-Aho, T. (2018). The role of rolling forecasting in budgetary control systems: reactive and proactive types of planning. *Journal of Management Control*, 29(3), 327-360. https://doi.org/10.1007/s00187-018-00273-6

Hope, J., & Fraser, R. (2003). *Beyond Budgeting: How Managers Can Break Free from the Annual Performance Trap*. Harvard Business School Press, Boston.

Jensen, M. C. (2001). Corporate budgeting is broken—let's fix it. In: *Harvard Business Review*, 79(10), 94–101.

Jordan, S., & Messner, M. (2020). The use of forecast accuracy indicators to improve planning quality: Insights from a case study. *European Accounting Review*, 29(2), 337-359. https://doi.org/10.1080/09638180.2019.1577150

Kruger, S. D., de Togni, L., & Zanin, A. (2022). Usability and functions of the budget in the perception of managers of a company in the metal-mechanical field. *Revista Brasileira de Contabilidade e Gestão,* 11(21). https://doi.org/10.5965/2764747111212022060

Kruis, A. M., Speklé, R. F., & Widener, S. K. (2016). The Levers of Control Framework: An exploratory analysis of balance. *Management Accounting Research*, 32, 27-44. https://doi.org/10.1016/j.mar.2015.12.002

Libby, T., & Lindsay, R. M. (2010). Beyond budgeting or budgeting reconsidered. A survey of North-American budgeting practice. *Management Accounting Research*, 21(1), 56-75. https://doi.org/10.1016/j.mar.2009.10.003

Mannes, S., Frare, A. B., & Beuren, I. M. (2021). Efeitos do uso dos orçamentos estático e flexível na inovação de processos e produtos. *Revista de Contabilidade e Organizações*, 15, e180829-e180829. https://doi.org/10.11606/issn.1982-6486.rco.2021.180829

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

Matějka, M., Merchant, K. A., & O'Grady, W. (2021). An empirical investigation of beyond budgeting practices. *Journal of Management Accounting Research*, 33(2), 167-189. https://doi.org/10.2308/jmar-19-010

Marginson, D., & Ogden, S. (2005). Coping with ambiguity through the budget: the positive effects of budgetary targets on managers' budgeting behaviours. *Accounting, Organizations and Society*, 30(5), 435-456. https://doi.org/10.1016/j.aos.2004.05.004

Mucci, D. M., Beck, F., & Frezatti, F. (2021). Configurações do processo orçamentário: análise de empresas que atuam no Brasil. *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, 15(1). https://doi.org/10.17524/repec.v15i1.2721

Mucci, D. M., Frezatti, F., & Dieng, M. (2016). As múltiplas funções do orçamento empresarial. *Revista de Administração Contemporânea*, 20(3), 283-304. https://doi.org/10.1590/1982-7849rac2016140121

Nitzl, C. (2016). The use of partial least squares structural equation modelling (PLS-SEM) in management accounting research: Directions for future theory development. *Journal of Accounting Literature*, 37(1), 19-35. https://doi.org/10.1016/j.acclit.2016.09.003

Otti, M., Brouwer, H. (2021). Budgeting Revisited. *Strategic Finance*. Recuperado de https://sfmagazine.com/post-entry/may-2021-budgeting-revisited/

Sivabalan, P., Booth, P., Malmi, T., & Brown, D. A. (2009). An exploratory study of operational reasons to budget. *Accounting & Finance*, 49(4), 849-871. https://doi.org/10.1111/j.1467-629X.2009.00305.x

Sponem, S., & Lambert, C. (2016). Exploring differences in budget characteristics, roles and satisfaction: A configurational approach. *Management Accounting Research*, 30, 47-61. https://doi.org/10.1016/j.mar.2015.11.003

Van der Stede, W. A., Young, S. M., & Chen, C. X. (2005). Assessing the quality of evidence in empirical management accounting research: The case of survey studies. *Accounting, Organizations and Society*, 30(7-8), 655-684. https://doi.org/10.1016/j.aos.2005.01.003

Xu, D., & Meyer, K. E. (2013). Linking theory and context: 'Strategy research in emerging economies' after Wright et al.(2005). *Journal of Management Studies*, 50(7), 1322-1346. https://doi.org/10.1111/j.1467-6486.2012.01051.x

Wallander, J. (1999). Budgeting—an unnecessary evil. *Scandinavian Journal of Management*, 15, 402–421. https://doi.org/10.1016/S0956-5221(98)00032-3

Wagner, J., Petera, P., Popesko, B., Novák, P., & Šafr, K. (2021). Usefulness of the budget: the mediating effect of participative budgeting and budget-based evaluation and rewarding. *Baltic Journal of Management*, 16(4), 602-620. https://doi.org/10.1108/BJM-02-2020-0049