

Effects of psychological capital and managerial attitudes on the relationship between budgetary participation and performance*

Larissa Degenhart¹

 <https://orcid.org/0000-0003-0651-8540>

Email: larissa.degenhart@ufsm.br

Vinícius Costa da Silva Zonato¹

 <https://orcid.org/0000-0003-0823-6774>

Email: zonatto@ufsm.br

Carlos Eduardo Facin Lavarda²

 <https://orcid.org/0000-0003-1498-7881>

Email: eduardo.lavarda@ufsc.br

¹ Universidade Federal de Santa Maria, Programa de Pós-Graduação em Ciências Contábeis, Santa Maria, RS, Brazil

² Universidade Federal de Santa Catarina, Departamento de Ciências Contábeis, Florianópolis, SC, Brazil

Received on 12.26.2020 – Desk acceptance on 01.11.2021 – 3rd version approved on 10.14.2021 – Ahead of print on 04.01.2022

Editor-in-Chief: Fábio Frezatti

Associate Editor: Cláudio de Araújo Wanderley

ABSTRACT

This study analyzes the effects of psychological capital and managerial attitudes on the relationship between budgetary participation and management performance in budgeting activities. The study addresses a gap that exists in the budgeting research, tackling the effects of individuals' mental states and behaviors on the relationship between budgetary participation and management performance in an integrated way. The interactive effects of cognitive and personal, behavioral, and environmental factors enable us to understand the factors present within the budgetary context that influence the relationship between budgetary participation and management performance, which provides an explanation for the conflicting results found in the literature, denoting in which conditions the effects of participation on performance can be obtained. The research innovates by evaluating, based on an interactionist approach, predictive factors for management performance within the budgetary context, contemplating the analysis of cognitive and personal (psychological capital), behavioral (managerial attitudes), and environmental (budgetary participation) factors, providing an explanation for the effects of budgetary participation on management performance in budgeting activities. A survey was conducted with 245 controller professionals from industries in the South Region of Brazil, chosen using the LinkedIn social network, and the data were analyzed via structural equation modeling (SEM). This revealed the positive joint indirect effects of psychological capital and of managerial attitudes on the relationship between budgetary participation and performance. The results converge with the social cognitive theory (SCT) approach, as it can be inferred that cognitive and personal aspects influence human decisions and the level of effort employed by managers in activities carried out within the budgetary context. The results offer support for organizations to direct resources toward organizational practices that seek to improve managers' positive mental states, which influence behavioral factors and their job performance.

Keywords: budgetary participation, psychological capital, managerial attitudes, management performance, social cognitive theory.

Correspondence address

Larissa Degenhart

Universidade Federal de Santa Maria, Programa de Pós-Graduação em Ciências Contábeis

Avenida Roraima, nº 1.000, Prédio 74-C, Sala 4345 – CEP 97105-900

Cidade Universitária – Santa Maria – RS – Brazil

*The authors are grateful to the National Council for Scientific and Technological Development (CNPq) and to the Research Support Foundation of the State of Rio Grande do Sul (FAPERGS) for their financial support to carry out this research. This study was also conducted with the support of the Coordination for the Improvement of Higher Education Personnel – Brasil (CAPES) – Funding Code 001.



1. INTRODUCTION

The budgeting research based on psychology seeks to understand how the effects of the budget vary among individuals (Covaleski et al., 2007) and influence their behaviors, as well as how they are grounded in the relationship between superiors and subordinates (Birnberg et al., 2007; Frezatti et al., 2010). Under the behavioral approach, the budget can be seen as a control instrument used by organizations to communicate subordinates' objectives, goals, and motivation (Derfuss, 2016), where individuals' participation in the budgetary process is an important analysis element for understanding the effects of the budget over the mental states and behavior of individuals at work, their attitudes, and their management performance in budgeting activities (Dani et al., 2017).

The research developed regarding budgetary participation and management performance within the budgetary context emphasizes the psychological and behavioral approach in the accounting area (Lunardi et al., 2020; Zonatto et al., 2019). Budgetary participation is related with managers' involvement in defining the budgetary goals and objectives and their influence on defining the budget (Milani, 1975), which motivates employees to achieve the organizational goals and objectives, modifying their job perceptions through cognitive mechanisms (Derfuss, 2016).

Management performance in budgeting activities refers to the degree to which budget managers are successful in carrying out these activities (Parker & Kyj, 2006). As an organizational management practice, the budget is established to support managers' behavior (Macinati et al., 2016), which has led to the literature addressing the benefits of budgetary participation (Birnberg et al., 2007) in relation to performance.

Studies developed based on different theoretical perspectives derived from psychology have suggested that various factors can influence the relationship between budgetary participation and management performance (Dani et al., 2017; Derfuss, 2016; Lunardi et al., 2020). The influence of cognitive and behavioral variables on that relationship has received little attention from researchers from the accounting area (Covaleski et al., 2007; Lunardi et al., 2020; Zonatto et al., 2019) and they have been scarcely explored in Brazilian companies (Lunardi et al., 2020; Zonatto et al., 2019), which constitutes an opportunity for conducting new studies on the topic. Psychological variables associated with individuals are fundamental for explaining their performance in job activities (Macinati et al., 2016) related to the budgetary context.

In this research, according to the sociointeractionist approach of social cognitive theory (SCT) proposed by Bandura (1977), cognitive and personal factors (biological, affective, and cognitive factors) are evaluated based on managers' psychological capital. Behavioral factors (motor responses, verbal factors, and interactions between individuals) are present in the managerial attitudes evaluated (in relation to the budget and commitment to budgetary goals). Environmental factors (events occurring in the physical environment, work, family, friends), in turn, can be translated by situational constraints of the budgetary context the individual is part of, which also influence their cognitions and attitudes regarding social interaction, and are represented by the level of budgetary participation.

Based on this theoretical approach (Bandura, 1977), it follows that within the budgetary context there are different factors that influence managers' behavior and performance in budgeting activities. It is understood that the way individuals' participation in budgetary processes (environmental factors) occurs will affect their mental states (cognitive and personal factors) and their attitudes (behavioral factors). Consequently, their performance tends to be influenced by the interactionist effects of these factors.

Despite the contributions of this theory to the area of psychology and organizational behavior, in the accounting area, the research based on this theoretical perspective remains in its infancy. In accounting, the SCT approach in the context proposed in this study was located in the studies of Ni et al. (2009), Saithong-In and Ussahawanitchakit (2016), Yuliansyah and Khan (2017), and Venkatesh and Blaskovich (2012). In Brazil, the studies of Nascimento (2017) and Schlup (2018) were found, specifically within the budgetary context.

The existing research in the literature has, up until now, used some of the factors of SCT with the aim of identifying the variables that help in explaining the effects of budgetary participation on management performance in budgeting activities. Three studies were found in the accounting area (Nascimento, 2017; Schlup, 2018; Venkatesh & Blaskovich, 2012) that have sought to analyze the effects of psychological capital on this relationship, which reinforces the need to conduct new studies and the relevance of this research.

Within the budgetary context, it can be inferred that the studies that have analyzed, in an integrated way, the effects of individuals' mental states and behaviors on the relationship between budgetary participation and

management performance in budgeting activities are still in their infancy, representing a theoretical gap that stimulated the realization of this study. After decades of research, there is still a long way to go before it will be possible to extract sound knowledge about budgetary participation (Derfuss, 2016). Thus, considering this gap identified in the accounting literature and the approach proposed by Bandura (1977), this study aims to analyze the effects of psychological capital and managerial attitudes on the relationship between budgetary participation and management performance in budgeting activities.

The research is warranted for its inclusion of theoretical perspectives from psychology, as this offers the researchers the opportunity to develop fuller and more valid explanations for budgetary practices in organizations (Covaleski et al., 2007), which are relevant for any accounting practice (Birnberg et al., 2007). An understanding of the indirect effects of budgetary participation over the manager's performance in budgeting activities, based on psychological capital and managerial attitudes, has the potential to reveal which combination of factors lead to improvements in individuals' performance in these activities, a discussion that has not yet been

approached from the perspective of SCT (Bandura, 1977) in the management research conducted in the accounting area.

The analysis of these factors may reveal to superiors the potential that budgetary participation has to develop positive mental states and forces in employees, so that they successfully carry out challenging tasks within the budgetary context (Venkatesh & Blaskovich, 2012), which will be reflected in managerial attitudes and in their performance. Thus, it also contributes to organizations identifying the budgetary control system design to be adopted, with the aim of enhancing managerial attitudes in relation to the budget and management performance in budgeting activities.

In addition, this study seeks to contribute to the literature on budgetary participation and the behavioral perspective on accounting and management practices, by shedding light over the interactionist effects proposed by Bandura (1977) and the indirect approaches of variables present in the budgetary context that are capable of influencing the relationship between participation and performance. This approach may encourage new studies to be conducted regarding these topics.

2. THEORETICAL CONSTRUCTION AND HYPOTHESES OF THE RESEARCH

SCT uses various factors to explain human action and development, as this can be influenced by a combination of cognitive and personal, behavioral, and environmental factors that mutually and bidirectionally influence each other (Bandura, 1977). This theory is rooted in a view of human action in which individuals are involved with their development (Bandura, 2004). The basis for the conception of Bandura's (1977) reciprocal determinism is the view that: (i) personal factors in the form of cognition, affect, and biological events, (ii) behavior, and (iii) environmental influences create interactions that result in triadic reciprocity (Pajares, 2002).

According to SCT (Bandura, 1977), people can exert some influence over their behavior, organizing incentives for themselves in response-contingent relationships. Given the three elements of SCT, individuals acquire knowledge structures – cognitive and personal, behavioral, and environmental (Bandura, 1986) – that together can cause personal and social changes in those individuals (Bandura, 2011).

2.1 Rationale behind the Hypotheses

In this article, budgetary participation is considered as an environmental factor, a situational factor that is

independent of the individual, as it is the influence of the environment present in the context of the individuals' interaction, uncontrollable events, and of the actors involved in the budgetary context (others' actions) (Bandura, 1977) that will determine the way managers' participation will occur in the budgetary processes of their organizations, as well as the definition of premises, available resources, objectives, and budgetary goals. Therefore, the environmental factors (level of budgetary participation) tend to have effects on the performance of managers in budgeting activities, according to the view of SCT.

The literature has suggested that through participating in the budgetary process subordinates can improve their job performance. Although the budget may be linked to employees' motivations and attitudes, its relationships with performance are complex (Merchant, 1981). Companies enable employees to participate in the budgetary process expecting positive results, such as higher performance in job activities (Covaleski et al., 2007). However, the management accounting literature has been unable to establish a conclusive direct relationship between budgetary participation and performance (Derfuss, 2016), reporting positive (Hashim et al., 2014; Santos et al., 2021; Zonatto et al., 2019), negative (Etemadi et al., 2009), and

insignificant results (Jermias & Yigit, 2013; Lunardi et al., 2020; Macinati et al., 2016; Venkatesh & Blaskovich, 2012). These inconclusive results may be due to the lack of understanding of the mechanism through which budgetary participation can affect performance (Chong & Johnson, 2007), which indicates that intervening variables can help in explaining this relationship (Dani et al., 2017; Derfuss, 2016; Macinati et al., 2016).

According to psychological theory, budgetary participation has positive effects on management performance through motivational and cognitive mechanisms (Birnberg et al., 2007; Covaleski et al., 2007), as participation leads to subordinates perceiving that they are being treated by their superiors as valuable partners in the budgetary decision-making process, which will be positively reflected in the individual's performance in budgeting activities (Jermias & Yigit, 2013).

Ni et al. (2009) highlight that budgetary participation improves subordinates' managerial cognition and their performance, since through participation in budgetary processes managers can share relevant information about the work. Based on this evidence, a positive relationship is suggested between budgetary participation and management performance in budgeting activities. Within this context, hypothesis 1 was formulated:

H₁: there is a positive relationship between budgetary participation and management performance.

Human action and development are determined by a combination of factors that affect individuals, relating with biological, affective, and cognitive questions (Bandura, 1977). In this sense, the relationship between budgetary participation and management performance in budgeting activities tends to be influenced by cognitive and personal factors (psychological capital: self-efficacy, hope, optimism, and resilience) of managers with budgetary responsibilities in their work activities.

Research focused on budgeting, based on psychology, has concentrated on analyzing the effects of budgetary participation on employees' mental states (psychological capital), behaviors, and performance (Covaleski et al., 2007). This study seeks to validate the effects of budgetary participation on cognitive and personal factors using the viewpoints of SCT (Ni et al., 2009; Venkatesh & Blaskovich, 2012), as participation can lead to positive effects over individuals' mental states and behaviors at work (Covaleski et al., 2007). In light of the contradictory results revealed between budgetary participation and management performance, researchers from the accounting area have proposed intervening variables, which suggests that

individuals' mental states intervene in the relationship between participation and performance (Derfuss, 2016; Zonatto et al., 2019).

Revisited studies in the literature have found a positive influence of budgetary participation over psychological capital (Nascimento, 2017; Schlup, 2018; Venkatesh & Blaskovich, 2012). In the studies of Ni et al. (2009), Macinati et al. (2016), and Yuliansyah and Khan (2017), budgetary participation positively impacted self-efficacy. Budgetary participation increases individuals' cognition (Yuliansyah & Khan, 2017) and is ideal for developing and increasing the level of psychological capital (Venkatesh & Blaskovich, 2012).

By participating in the budgetary process, individuals will have an influence on defining goals, they will be able to interact with their superiors, and they will receive an incentive to achieve the goals, which promotes an environment of confidence for carrying out tasks, a condition that is reflected in self-efficacy beliefs (Venkatesh & Blaskovich, 2012). Budgetary participation is needed to develop individuals' levels of hope, as it enables them to be able to direct their efforts and see themselves as having control of their future and of the organization (Venkatesh & Blaskovich, 2012). Moreover, it seeks interpersonal relationships between superiors and their subordinates, where the superiors are able to influence their subordinates' mental states. In this respect, it can promote an optimistic work environment for subordinates (Covaleski et al., 2007; Venkatesh & Blaskovich, 2012) and facilitate the development of resilience (Venkatesh & Blaskovich, 2012).

According to Ni et al. (2009), budgetary participation is considered useful for support relationships, as subordinates will believe they are capable of carrying out their tasks when they participate in the budgetary context. Merchant (1981) highlights that bigger, diversified, and decentralized companies tend to use the budget with greater importance for achieving budgetary goals, with greater participation from managers in budgeting activities, adopting formal communication standards and the use of budgetary supports, which will be reflected in the development of managers' positive psychological capacities.

Thus, it is suggested that budgetary participation provides a positive psychological context for subordinates to establish challenging but achievable goals, so that they have self-efficacy to achieve them, to overcome adversities, and to believe in a positive future (Venkatesh & Blaskovich, 2012). Hence, hypothesis 2 was developed.

H₂: there is a positive relationship between budgetary participation and psychological capital.

In the same way that budgetary participation influences managers' psychological capital, it can influence their performance. Evidence found in the accounting literature suggests a positive relationship between psychological capital and management performance in the budgetary context (Nascimento, 2017; Schlup, 2018; Venkatesh & Blaskovich, 2012) and within the scope of public accounting (Saithong-In & Ussahawanitchakit, 2016). Other positive evidence was found in the budgetary context; however, Ni et al. (2009) only analyzed self-efficacy and its relationship with management performance and highlighted that self-efficacy is an important variable that seeks to increase employees' performance.

Bandura (1977) suggests that employees with high self-efficacy will exert more efforts and will be more patient to overcome work-related obstacles. Thus, high levels of self-efficacy, hope, optimism, and resilience will improve performance. This evidence enables hypothesis 3 to be established.

H₃: there is a positive relationship between psychological capital and management performance.

Another factor addressed in SCT concerns the behavioral factors, which refer to the level of effort that individuals are willing to exert in carrying out a particular behavior, which is influenced by psychological and emotional characteristics (Bandura, 1977). The relationship between budgetary participation and management performance can also be influenced by behavioral factors (such as managerial attitudes in relation to the budget and the commitment of those managers to the budgetary goals). It is understood that budgetary participation influences individuals' performance in job activities geared toward the budgetary context, when they have positive managerial attitudes and commit to achieving the established budgetary goals.

Sandalgaard et al. (2011) highlight the importance of considering, with regard to analyzing budgetary participation, personal variables, such as managerial attitudes, which were measured through variables of managerial attitudes in relation to the budget, and commitment to budgetary goals. Budgetary participation can influence the mind and behavior (Birnberg et al., 2007), presenting positive effects on managerial attitudes.

According to Merchant (1981), behavioral factors tend to be more favorable in organizations that use budgetary participation as part of a management control strategy. Evidence suggests that budgetary participation has positive effects over managerial attitudes related to the budget (Lu, 2011; Merchant, 1981). The results found by Merchant (1981) revealed that managerial attitudes were better in

companies in which the managers actively participate in budgeting activities. Budgetary participation improves the work environment and leads to positive managerial attitudes among employees in relation to the budget (Ni et al., 2009).

With regard to commitment to budgetary goals, studies conducted in the area of management accounting and psychology postulate a positive relationship between budgetary participation and this behavioral variable (Hashim et al., 2014; Jermias & Yigit, 2013; Macinati & Rizzo, 2014), given that budgetary participation motivates subordinates to accept and commit to their budgetary goals (Chong & Johnson, 2007; Chong & Tak-Wing, 2003; Jermias & Yigit, 2013; Sandalgaard et al., 2011).

For Shields and Shields (1998), budgetary participation promotes an increase in the subordinate's confidence, a sense of control, and involvement of the ego with the organization, which causes greater acceptance of and commitment to the budgetary goals. Moreover, budgetary participation tends to increase subordinates' levels of commitment to budgetary goals due to the opportunity to get involved in and have an influence on the establishment of these goals (Chong & Johnson, 2007; Chong & Tak-Wing, 2003; Jermias & Yigit, 2013). From this perspective, hypotheses 4a and 4b were formulated.

H₄: there is positive relationship between budgetary participation and managerial attitudes in relation to the budget (H_{4a}) and commitment to the budgetary goals (H_{4b}).

Besides the effects of budgetary participation over managerial attitudes, these can also influence performance. In the study of Mia (1988), managers who participated in the budgetary process reported favorable attitudes and motivations and better management performance in budgeting activities. Lu (2011) revealed that when the levels of motivation and budgetary attitude were high, budgetary performance was also high.

Despite the relationship found in the literature between managerial attitudes in relation to the budget and performance, evidence was found in the accounting literature that analyzed this relationship with a positive result (Nascimento, 2017), which suggests that proactive managerial attitudes in relation to the budget improve the performance of controllers.

Various studies have provided support for the positive relationship between commitment to budgetary goals and management performance (Chong & Johnson, 2007; Chong & Tak-Wing, 2003; Hashim et al., 2014; Jermias & Yigit, 2013; Wentzel, 2002). Shields and Shields (1998) highlight that the motivational role of budgetary participation increases commitment to budgetary goals,

which, in turn, improves job performance. According to Wentzel (2002), commitment to budgetary goals influences managers' performance during the budgetary process, as budgetary participation promotes a feeling of fairness, which increases managers' commitment to the budgetary goals and improves management performance.

The cognitive benefit of budgetary participation promotes commitment to goals and better performance (Chong & Tak-Wing, 2003). Individuals who are committed to the goals will increase their efforts to achieve them. As a result, the greater the effort applied to obtain the goals, the greater the chance will be of achieving them, improving job performance (Chong & Johnson, 2007).

As individuals tend to work more in situations in which they are motivated through budgetary participation, they come to perceive greater commitment to the goals and probably show high performance, as they guide their actions with more information from the budgetary process, which enables them to improve their budgetary decisions (Macinati & Rizzo, 2014). Therefore, hypotheses 5a and 5b were formulated.

H₅: there is a positive relationship between managerial attitudes in relation to the budget (H_{5a}) and commitment to budgetary goals (H_{5b}) and management performance.

Besides the direct relationships proposed, the indirect effects of budgetary participation on management performance were analyzed in light of SCT, which delves into psychological questions by incorporating the relationship between cognitive and personal, behavioral, and environmental factors, which by interacting influence human action and behavior (Bandura, 1977). The psychological perspective is connected with the SCT approach and, therefore, it is assumed that the interaction between cognitive and personal and behavioral factors interferes in the relationship between budgetary participation and management performance in budgeting activities.

SCT considers that individuals' psychological processes motivate efforts to obtain job performance under conditions that enable the cognitive acquisition of information. For Macinati et al. (2016), the mediating effects on the relationship between budgetary participation and management performance should occur with psychological variables that have cognitive and motivational effects. The positive mediating effect of psychological capital on the relationship between budgetary participation and management performance has been found in studies in the accounting area (Nascimento, 2017; Schlup, 2018; Venkatesh & Blaskovich, 2012).

The positive psychological capacities of psychological capital act as motivational propensities and efforts to achieve success, resulting in increased production and performance (Avey et al., 2011). The mental states of psychological capital, hope, optimism, and resilience have the potential to improve a person's self-efficacy level to achieve success in a specific task (Venkatesh & Blaskovich, 2012), which will be reflected in the individual's job performance. Psychological capital is considered a mechanism that relates positivity to the budget and to performance (Venkatesh & Blaskovich, 2012). Thus, higher levels of budgetary participation are expected to be associated with higher levels of self-efficacy, hope, optimism, and resilience, as well as being reflected in higher levels of management performance in budgeting activities.

Evidence found in the literature also confirms mediating effects of managerial attitudes in relation to the budget on the relationship between budgetary participation and management performance (Nascimento, 2017) and positive and mediating effects of commitment to budgetary goals on this relationship. Based on that evidence, it is suggested that managerial attitudes have positive effects on the relationship between budgetary participation and management performance, being reflected in the attitudinal influences envisioned by SCT.

Based on this evidence, it is possible to broaden the discussion of the mediating effects of psychological capital and of managerial attitudes on the relationship between budgetary participation and management performance, given that these variables have not been tested together to analyze this relationship, which may provide an explanation for the conflicting results found in the literature (Dani et al., 2017; Derfuss, 2016) regarding the effects of budgetary participation on management performance. Within the budgetary context, the studies that analyze the effects of individuals' mental states and behaviors on the relationship between budgetary participation and management performance in an integrated way remain in their infancy, which is a theoretical gap explored in this research.

This discussion is anchored in the interactionist theoretical approach proposed by Bandura (1977), and based on SCT it is understood that managers' managerial attitudes in budgeting activities are determined by a combination of cognitive and personal factors and environmental factors that interact, determining human action in the budgetary context, for which reason H₆ is established.

H₆: there is an indirect joint effect of psychological capital and managerial attitudes on the relationship between budgetary participation and management performance.

The psychological capacities of psychological capital share a cognitive and agency component that needs to reach and maintain a certain threshold of intensity and resistance in order to result in success and the realization of goals (Avey et al., 2011), which indicates that high levels of psychological capital positively influence managerial

attitudes at work. Thus, they can be analyzed together in the proposed relationship. Employees who have high levels of psychological capital will present positive behaviors at work (Avey et al., 2011). Under this condition, they become more likely to share information in the work environment (Lunardi et al., 2020) and act to improve their performance.

Table 1 presents a summary of the hypotheses tested in this study.

Table 1
Research hypotheses

Hypotheses	Expected relationship	Theoretical support
H ₁ : there is a positive relationship between budgetary participation and management performance.	+	Bandura (1977), Etemadi et al. (2009), Hashim et al. (2014), Jermias and Yigit (2013), Lunardi et al. (2020), Macinati et al. (2016), Santos et al. (2021), Venkatesh and Blaskovich (2012), Zonatto et al. (2019).
H ₂ : there is a positive relationship between budgetary participation and psychological capital.	+	Bandura (1977), Macinati et al. (2016), Nascimento (2017), Ni et al. (2009), Schlup (2018), Venkatesh and Blaskovich (2012), Yuliansyah and Khan (2017).
H ₃ : there is a positive relationship between psychological capital and management performance.	+	Bandura (1977), Nascimento (2017), Saithong-In and Ussahawanitchakit (2016), Schlup (2018), Venkatesh and Blaskovich (2012).
H _{4a} : there is a positive relationship between budgetary participation and managerial attitudes in relation to the budget.	+	Bandura (1977), Birnberg et al. (2007), Lu (2011), Merchant (1981), Ni et al. (2009), Sandalgaard et al. (2011).
H _{4b} : there is a positive relationship between budgetary participation and commitment to budgetary goals.	+	Bandura (1977), Chong and Johnson (2007), Chong and Tak-Wing (2003), Hashim et al. (2014), Jermias and Yigit (2013), Macinati and Rizzo (2014), Sandalgaard et al. (2011).
H _{5a} : there is a positive relationship between managerial attitudes in relation to the budget and management performance.	+	Bandura (1977), Lu (2011), Mia (1988), Nascimento (2017).
H _{5b} : there is a positive relationship between commitment to budgetary goals and management performance.	+	Bandura (1977), Chong and Johnson (2007), Chong and Tak-Wing (2003), Hashim et al. (2014), Jermias and Yigit (2013), Wentzel (2002).
H ₆ : there is an indirect joint effect of psychological capital and managerial attitudes on the relationship between budgetary participation and management performance.	+	Bandura (1977), Dani et al. (2017), Derfuss (2016), Macinati et al. (2016), Nascimento (2017), Schlup (2018), Venkatesh and Blaskovich (2012).

Source: *Elaborated by the authors.*

3. METHODOLOGICAL PROCEDURES

The methodology adopted is characterized as descriptive, survey-based, and quantitative research, based on the structural equation modeling (SEM) technique and using the input of SCT. The object population of the study were managers responsible for the controlling area with budgetary responsibilities in the biggest companies in the South Region of Brazil listed in the ranking of the 500 biggest in the magazine *Revista Amanhã* (2018). We chose that population given that the magazine is relevant in the South Region of Brazil and the information disclosed

by the companies to compose the ranking is audited by PricewaterhouseCoopers (PwC).

To develop the study, we defined as our focus the businesses (293) from the metal, steel, and textile sectors, among others. Analyzing managers who work in industries is warranted as the structure determines the level of control that an organization has over its activities and its complexity, which determines the type of budgetary behavior and the level of budgetary participation (Mahlendorf et al., 2015). The use of businesses in the

South Region is warranted, as this region is composed of three states (Paraná, Santa Catarina, and Rio Grande do Sul) that have similar characteristics in their economic structure (National Confederation of Industry [CNI], 2018).

The South Region of Brazil encompasses various types of industries established in strategic locations close to their sources of raw material, spread regularly throughout the territory. The fact that this region's industrial sector is homogeneous favors its growth as a whole (CNI, 2018) and justifies analyzing the practices geared toward the budgetary context of industries in the South Region of Brazil.

The search to contact the managers that were the focus of the study occurred via LinkedIn. The search

process used the terms “controllers,” “managers,” and “controllership coordinators.” The search for managers with budgetary responsibilities from the controlling department is convergent with the subjects studies in other research already conducted regarding the topic of budgetary participation in the accounting area, such as that of Chong and Johnson (2007), Jermias and Yigit (2013), and Venkatesh and Blaskovich (2012). The sample was made up of 245 respondents, a sufficient number for analyzing the proposed theoretical model, according to the recommendations of Hair et al. (2009).

The research instrument used for the data collection included objective questions. Table 2 presents the variables used and their operational definitions.

Table 2
Constructs and operational definitions

Variables	Operational definitions	Scale	Authors
BP	Refers to managers' involvement in defining the budgetary goals and objectives and their influence over the establishment of budgets for their units (Milani, 1975; Shields & Shields, 1998).	Six indicators Likert 7 points**	Milani (1975)
PC	Positive psychological state of development of the individual characterized by beliefs of SE, OP, HO, and RE (Luthans et al., 2007). It is therefore a second-order construct, evaluated based on these positive psychological capacities.	Six indicators Likert 6 points**	Luthans et al. (2007)
MA	Refers to the feeling of utility of the budget for carrying out their job attributions and improving production methods (Merchant, 1981).	Five indicators Likert 5 points**	Merchant (1981)
CBG	Refers to managers' involvement in the process of defining budgetary goals and the effort employed to achieve them (Chong & Johnson, 2007).	Five indicators Likert 7 points**	Latham and Steele (1983)
MP	Evaluates the degree to which the budget managers obtain success in carrying out the budgeting activities (Mahoney et al., 1965; Parker & Kyj, 2006).	Nine indicators Likert 7 points*	Mahoney et al. (1965)

SE = self-efficacy; MA = managerial attitudes in relation to the budget; CBG = commitment to the budgetary goals; PC = psychological capital; MP = management performance in budgeting activities; HO = hope; OP = optimism; BP = budgetary participation; RE = resilience.

* (1) performance below the mean and (7) performance above the mean.

** (1) totally disagree and (5, 6, or 7) totally agree.

Source: *Elaborated by the authors.*

After elaborating the research instruments, we proceeded to translate these with the support of two specialized professionals, who carried out the back-translation with the aim of identifying possible biases in the questions. The instruments were sent for assessment to two research professors from the management accounting area, who were doctors in accounting sciences and experts on this topic, in order for them to analyze the translations and adapt the terminologies used in the budgeting research in Brazil. The questionnaire was also assessed by three managers with budgetary responsibilities in Brazilian companies, with the aim of verifying whether the questions were comprehensible and clear.

Before the research instrument was used for the data collection, it was subjected to a pre-test by three controllers of large-sized businesses in the South Region of Brazil.

Next, a consultation was also carried out with the Teaching, Research, and Extension Council (CEPE) of the teaching unit to verify the need for it to be processed at the entity. After applying the pre-test, no more adjustments in the research instrument were identified and it was suitable for application. The CEPE understood that, as there were no open questions, due to the fact that the research instrument had been validated and used in other studies and since the research participants were not identified, there would be no need for it to be processed; however, it recommended that some procedures be adopted when applying the instrument in the data collection stage. These procedures were adopted, with the research being governed by the general principles relating to: (i) informed consent; (ii) concern about not damaging the entity and the people that work in it; and (iii) maintaining the

participants' confidentiality and that of the entity where they work.

The data collection was carried out via LinkedIn. The questionnaire was administered via Google Docs and sent to the respondents together with a cover letter containing the research proposal and the commitment to use the data exclusively for academic purposes. The data were tabulated and imported to the Statistical Package for the Social Sciences (SPSS) and SPSS Amos software for statistical processing. First, we carried out the confirmatory factor

analysis of the measurement constructs to investigate their reliability and discriminant validity. Then we proceeded to analyze the theoretical relationships that were the object of study.

The criteria adopted for validating the measurement constructs were the indicators recommended by Hair et al. (2009): Cronbach's alpha, composite validity, variance extracted, discriminant validity, and fit indexes of the structural measurement model. The results of the research are presented below.

4. PRESENTATION OF THE RESULTS

The companies participating in the research were national (156) and multinational (89) publicly-traded corporations (74), closed corporations (93), and limited liability companies (78). The results revealed the predominance of businesses with an annual turnover of more than 40 million (71.43%), aged 10 to 50 years (52.65%) or with more than 50 years in its market (38.78%), and 136 (55.51%) of the companies in the sample had up to 1000 employees.

The profile of the managers reveals that these professionals were aged 31 to 40, on average, and 77.74% were male. Most (178) had a specialist qualification in

different areas and occupied the position of controller. The predominant time of experience in the controlling, manager, or coordinator role in the sample was up to four years (63.27%). The hierarchical level of the role can be considered high (mean: 5.49), as can the evaluative use of the budget by the organization (mean: 5.78). The perception in relation to the level of budgetary knowledge (mean: 6.22) and of budgetary routines and processes (mean: 6.23) was high, which is to be expected due to these professionals having budgetary responsibility. Table 3 presents the results of the analysis of the construct reliability indicators.

Table 3

Reliability indicators of the measurement constructs

Constructs	CA	CR	AVE
Minimum values expected =>	> 0.70	> 0.50	> 0.50
BP	0.913	0.92	0.66
PC	-	-	-
SE	0.908	0.92	0.65
HO	0.864	0.87	0.53
OP	0.897	0.90	0.62
RE	0.827	0.84	0.51
MA	0.849	0.86	0.55
CBG	0.960	0.96	0.83
MP	0.905	0.91	0.53

SE = self-efficacy; MA = managerial attitudes in relation to the budget; CBG = commitment to the budgetary goals; PC = psychological capital; MP = management performance in budgeting activities; HO = hope; OP = optimism; BP = budgetary participation; RE = resilience.

Source: *Elaborated by the authors.*

The results reveal that the reliability indicators for the constructs chosen for the research are higher than the minimum parameters expected, as recommended by Hair et al. (2009). The lowest Cronbach's alpha and composite reliability values are observed in the resilience construct. With relation to the variance extracted, all the

constructs obtained minimum values of 0.51 (or higher). It can be inferred that there is reliability in the proposed measurement scales, which enables their validation and adequacy for evaluating the structural models tested in this study. The discriminant validity results for the constructs are presented in Table 4.

Table 4
Results of the discriminant validity tests of the measurement constructs

Discriminant validity according to the Bagozzi and Philips (1982) criterion					
Measurement constructs		Constrained (= 1)	Not constrained	Difference of the chi-squared	Sig.
Construct A	Construct B	Chi-squared	Chi-squared		
BP	PC	1,549.127	1,516.617	32.51	0.0000
BP	MA	176.954	88.584	88.37	0.0000
BP	CBG	79.372	69.442	9.93	0.0016
BP	MP	389.467	361.521	27.946	0.0000
PC	MA	1,649.963	1,514.794	135.169	0.0000
PC	CBG	1,544.002	1,497.788	46.214	0.0000
PC	MP	1,948.808	1,882.49	66.318	0.0000
MA	CBG	203.664	108.521	95.143	0.0000
MA	MP	489.22	374.047	115.173	0.0000
CBG	MP	408.124	377.526	30.598	0.0000

MA = managerial attitudes in relation to the budget; CBG = commitment to the budgetary goals; PC = psychological capital; MP = management performance in budgeting activities; BP = budgetary participation.

Source: Elaborated by the authors.

The results found suggest discriminant validity of the constructs chosen to carry out the research. As recommended by Bagozzi and Phillips (1982), it is observed from the results of the significance test of the differences

between the chi-squared of the fixed model and that of the free model that these are statistically significant. Thus, it can be inferred that the discriminant validity of the analysis model of these relationships can be confirmed.

5. ANALYSIS AND DISCUSSION OF THE RESULTS

First, we tested the direct influence of budgetary participation on the other variables investigated and the direct influence of psychological capital and managerial attitudes on performance. In the initial version of the model analyzed, the direct influence of budgetary participation

on management performance was not significant. Thus, a new structural model was elaborated, excluding the direct path between budgetary participation and management performance. Table 5 presents a summary of the results found.

Table 5
Standardized coefficients and significances of the relationships of the model tested in the study

Estimates of the final model										
Structural paths	Estimates	Standard error	t values	ρ	Standardized coefficients	R ²	Hypothesis	Result		
MP ← BP	-	-	-	-	-	-	H1	Not supported		
PC ← BP	0.317	0.046	6.920	***	0.590	0.348	H2	Supported		
MP ← PC	0.349	0.104	3.367	***	0.266	0.361	H3	Supported		
MA ← BP	0.163	0.030	5.460	***	0.427	0.182	H4a	Supported		
CBG ← BP	0.525	0.062	8.536	***	0.561	0.315	H4b	Supported		
MP ← MA	0.513	0.139	3.683	***	0.279	0.361	H5a	Supported		
MP ← CBG	0.219	0.054	4.061	***	0.291	0.361	H5b	Supported		
BP/MP ← PC/MA	-	-	-	-	-	-	H6	Supported		

Note: fit indexes of the initial model: ratio between the chi-squares and the degrees of freedom ($\chi^2/DF = 2.205$); comparative fit index (CFI) = 0.856; Tucker Lewis index (TLI) = 0.848; normed fit index (NFI) = 0.766; goodness-of-fit index (GFI) = 0.715; adjusted GFI (AGFI) = 0.687; root-mean-square error of approximation (RMSEA) = 0.070. Fit indexes of the final model: $\chi^2/DF = 2.204$; CFI = 0.856; TLI = 0.848; NFI = 0.766; GFI = 0.715; AGFI = 0.687; RMSEA = 0.070.

MA = managerial attitudes in relation to the budget; CBG = commitment to the budgetary goals; PC = psychological capital; MP = management performance in budgeting activities; BP = budgetary participation.

Source: Elaborated by the authors.

As can be verified, the final model identifies acceptable fit values, which indicates its predictive validity and good model fit (Hair et al., 2009). Based on the results of the *t* test, it can be observed that the direct relationships tested reveal positive and significant relationships between budgetary participation and the variables psychological capital, managerial attitudes, and commitment to the goals and between these variables and performance.

The direct effects of participation on the controllers' performance are not significant, with respect to the analysis of the joint effects of psychological capital and managerial attitudes on this relationship. These results corroborate the evidence found by Dani et al. (2017) and Derfuss (2016), who based on meta-analyses suggested that the effects of budgetary participation may not occur directly over management performance, but indirectly, through the inclusion of intervening variables. This evidence provides a possible explanation for the conflicting results found regarding these relationships. Jermias and Yigit (2013), Lunardi et al. (2020), Macinati et al. (2016), and Venkatesh and Blaskovich (2012) also did not find significant results in the relationship, which enable H_1 to be rejected. There is a positive relationship between budgetary participation and performance.

It is observed that budgetary participation is a determinant variable for the development of the controllers' psychological capital and proactive managerial attitudes in the budgetary context, which is positively reflected in their management performance. The results revealed that budgetary participation has a direct and positive influence on psychological capital ($\lambda = 0.59$). Effects of psychological capital on management performance in budgeting activities ($\lambda = 0.27$) were also perceived. These results reveal that higher levels of budgetary participation influence the development of controllers' psychological capital and indicate that these variables have an influence on management performance. This evidence enables the acceptance of H_2 – there is a positive relationship between budgetary participation and psychological capital – and H_3 – there is a positive relationship between psychological capital and management performance.

Based on these results, it is noted that budgetary participation tends to influence individuals' cognitive and personal factors and these influence performance in budgeting activities and have indirect effects on the relationship between participation and performance. Cognition consists of mental processes and states that include attitudes and beliefs, where budgetary participation is a key element for positively increasing individuals' mental states in the work environment (Birnberg et al., 2007).

Individuals' mental states intervene in the relationship between participation and performance (Derfuss, 2016), which indicates that most of the participants in the study have developed this positive mental state and, thus, actively participate in budgetary processes and obtain better performance. Evidence found in the literature suggests that budgetary participation positively influences individuals' psychological capital (Nascimento, 2017; Schlup, 2018; Venkatesh & Blaskovich, 2012) and, consequently, this positively influences the individuals' job performance (Nascimento, 2017; Saithong-In & Ussahawanitchakit, 2016; Schlup, 2018; Venkatesh & Blaskovich, 2012).

With regard to the indirect effects of budgetary participation on management performance through the psychological capital variable, evidence was found of these relationships in the studies of Nascimento (2017), Schlup (2018), and Venkatesh and Blaskovich (2012), which corroborate the results of this study. These results suggest that budgetary participation is an element that is likely to increase employees' level of psychological capital and promote positive results in the work environment (Macinati et al., 2016; Venkatesh & Blaskovich, 2012). Therefore, it is observed that psychological capital is one of the determinants of performance in budgeting activities. According to Avey et al. (2011), individuals with greater efficacy make efforts to accomplish goals they believe they can achieve, they have willpower and create solutions to problems, they have expectations regarding the results, and they positively persevere in the face of adversities.

Budgetary participation also influenced managerial attitudes in relation to the budget ($\lambda = 0.43$) and commitment to budgetary goals ($\lambda = 0.56$), which enables the acceptance of hypotheses H_4 – there is a positive relationship between budgetary participation and managerial attitudes in relation to the budget (H_{4a}) and commitment to budgetary goals (H_{4b}). As envisioned by Shields and Shields (1998) and Wentzel (2002), greater commitment to budgetary goals was reflected in better management performance of the controllers ($\lambda = 0.29$). Managerial attitudes in relation to the budget were also positively reflected in performance ($\lambda = 0.28$), as suggested by Lu (2011) and Mia (1988). These results suggest the acceptance of hypotheses H_5 – there is a positive relationship between managerial attitudes in relation to the budget (H_{5a}) and between commitment to budgetary goals (H_{5b}) and management performance.

Therefore, higher levels of budgetary participation enhance controllers' managerial attitudes and have positive effects on their management performance. Consequently, managerial attitudes tend to positively influence the relationship between participation and performance.

Birnberg et al. (2007) suggest that budgetary participation can influence the mind and behavior of individuals and have positive effects on managerial attitudes. Participation in budgetary processes results in favorable behaviors, given that it has effects over the mind of individuals (Birnberg et al., 2007). These are some of the reasons for budgetary participation causing positive behaviors in the work environment, increasing commitment and improving performance, for which reason it should be incentivized (Zonatto & Lavarda, 2013).

The evidence found converges with the findings of Lu (2011), Merchant (1981), and Nascimento (2017), since they also revealed that budgetary participation positively influences managerial attitudes in relation to the budget. Merchant (1981) highlights that managers' managerial attitudes were better in companies in which they actively participated in the budgetary process. In that respect, budgetary participation improves the characteristics of the work environment and leads to positive managerial attitudes among employees (Ni et al., 2009).

The results also revealed the direct and positive influence of budgetary participation over commitment to budgetary goals, which converges with the results of Chong and Johnson (2007), Chong and Tak-Wing (2003), Hashim et al. (2014), Jermias and Yigit (2013), Macinati and Rizzo (2014), Sandalgaard et al. (2011), and Wentzel (2002). Budgetary participation motivates subordinates to accept and commit to the budgetary goals (Chong & Johnson, 2007; Chong & Tak-Wing, 2003; Jermias & Yigit, 2013; Sandalgaard et al., 2011), it promotes an increase in confidence in the subordinate, a sense of control, and involvement of the ego with the organization, which leads to greater acceptance of and commitment to the budgetary goals and decisions (Shields & Shields, 1998). So, if the objective is to increase managers' commitment to the budgetary goals, they should have a greater influence on the budgetary process (Sandalgaard et al., 2011).

The direct effect of managerial attitudes in relation to the budget on management performance in budgeting activities was also found by Nascimento (2017) in the accounting area. Studies they have sought to identify the relationship between personal variables and performance have also revealed that participation in budgetary processes triggers positive managerial attitudes in relation to the budget (Lu, 2011; Merchant, 1981), which tends to positively impact the individual's job performance. According to Lu (2011), managers with positive budgetary attitudes are capable of achieving better results at work.

The direct and positive influence of commitment to budgetary goals on management performance in budgeting activities converges with the findings of Chong

and Johnson (2007), Chong and Tak-Wing (2003), Hashim et al. (2014), Jermias and Yigit (2013), and Wentzel (2002). According to Wentzel (2002), budgetary participation promotes a feeling of fairness among managers, which in turn increases managers' commitment to the budgetary goals and improves their management performance. These results reveal the cognitive benefit of budgetary participation, given that it promotes commitment to budgetary goals and improves job performance (Chong & Tak-Wing, 2003).

Evidence also suggests mediating effects of managerial attitudes on the relationship between participation and performance. Evidence was found of positive and indirect effects of managerial attitudes in relation to the budget (Nascimento, 2017) and of commitment to the budgetary goals on this relationship (Chong & Tak-Wing, 2003; Jermias & Yigit, 2013; Wentzel, 2002). The managerial attitudes analyzed can be considered other determining factors of human action and development (Bandura, 1977), given that behavioral factors presented positive effects on the proposed relationship. This occurs because the relationships between managerial motivations and attitudes within the budgetary context and performance are considered to be complex (Merchant, 1981). Therefore, controllers' managerial attitudes can enhance the relationship between participation and performance.

Besides the aforementioned results, it can be inferred that psychological capital and managerial attitudes positively and jointly influence the relationship between the budgetary participation and management performance of controllers in budgeting activities. These findings enable the acceptance of H_6 – there is a joint indirect effect of psychological capital and managerial attitudes on the relationship between budgetary participation and management performance. Moreover, they are convergent with the theoretical approach proposed by Bandura (1977).

According to SCT (Bandura, 1977), human action and development are determined by the joint influence of cognitive and personal, behavioral, and environmental factors, which through interacting cause triadic reciprocity. This reciprocal causation does not mean that these factors influence human action and development to the same extent. This occurs because individuals can differ in their psychological capacities.

Therefore, these three factors can influence a particular group of people differently (Bandura, 1986), given that some factor can present a greater impact than another on the environment the individual is part of or on their perceptions, which tends to influence their cognitions and judgements (Bandura, 1977). In this sense, the theory establishes reciprocal interactions between the person,

the environment, and the behavior (Bandura, 1977). Thus, under this theoretical approach, it is inferred that management performance was determined by the combined influence of cognitive and personal factors (psychological capital), behavioral factors (managerial attitudes), and environmental factors (budgetary participation).

The results revealed that psychological capital is one of the determinants of performance, as cognition enables individuals to perform their activities successfully. Similarly, managerial attitudes for developing activities and budgetary participation are needed for managers to carry out their activities effectively, and these are, respectively, the behavioral and environmental determinants that also influence job performance. Evidence found in the literature suggests that psychological capital impacts individuals' managerial attitudes, which positively affects their job performance (Avey et al., 2011; Covaleski et al., 2007). It is found based on these joint effects that cognitive

aspects come to influence human decisions and the level of effort individuals are willing to employ in carrying out their activities, which tends to be reflected in their attitudes, behaviors, and job performance (management performance in budgeting activities).

However, it is not enough to have cognitive capacity and willingness to carry out activities, given that there are constraints in the environment (others' actions) that can influence the execution of tasks. In this study, budgetary participation is a determining variable for the development of psychological capital and proactive managerial attitudes within the budgetary context, which was positively reflected in the controllers' management performance in budgeting activities. Therefore, budgetary participation is a determinant for these interactions to occur and enhance management performance in budgeting activities.

Figure 1 presents a summary of the path results of the structural model analyzed.

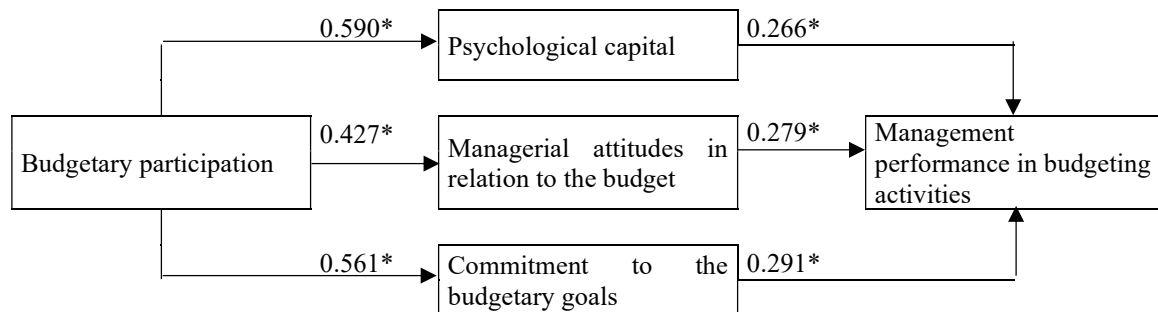


Figure 1 Results of the theoretical analysis model

* Significance at the 1% level.

Source: Elaborated by the authors.

Despite the absence of a consensus in some management accounting research arousing reflections on which path to follow in order to find more robust results, it has to be considered that in this type of investigation the analysis level is the individual. Individuals differ in their

psychological capacities and there are those that are unable to develop (Bandura, 1977). Thus, one opportunity for conducting new research, so as to better understand these interactions, consists of applying SCT when carrying out new studies.

6. CONCLUDING REMARKS

The SCT approach applied to management accounting enables a new vision of budgetary processes, as individuals' mental states and behaviors can be reflected in the work environment. The results did not confirm the direct effects of budgetary participation on management performance in budgeting activities. This result suggests that the effects of budgetary participation on performance can be better

explained when intervening variables are included in the model.

Thus, this study contributes to the literature on management accounting using the psychological and behavioral approach, providing an explanation for the determinants of these effects. The following intervening factors were proposed: cognitive and personal

(psychological capital), behavioral (managerial attitudes and commitment to budgetary goals), and environmental constraints (budgetary participation). Through interacting, these factors influence and determine human action and development within that context of social interaction (budgetary environment).

This study contributes to the accounting literature by adding a base theory from the area of psychology with a view to explaining, from a wider perspective, a specific accounting context. Based on the results, another theoretical contribution stands out that broadened the knowledge regarding the managerial attitudes variable, given that its effects on the relationship between participation and performance were considered to be incipient in the accounting literature.

It is observed that different behaviors influence the individual's actions at work. Thus, to obtain better participation in budgetary processes and management performance, it is advisable to develop actions that seek to stimulate a feeling of utility of the budget for the manager and commitment to the budgetary goals, given that these behaviors positively influence budgetary processes and management performance. Therefore, the presence of positive behaviors in the budgetary process enhances the relationship between participation and management performance in budgeting activities.

Regarding the combined indirect effects on the proposed relationship, the results also showed that psychological capital and managerial attitudes have positive effects and enhance the relationship between budgetary participation and management performance in budgeting activities. These results reveal the contributions of budgetary practices to the performance of controllers in budgeting activities through cognitive and motivational mechanisms. In light of these results, it is denoted that cognitive and personal (psychological capital), behavioral (managerial attitudes), and environmental (situational constraints and others' actions) factors influence the actions and behavior of controllers in the industries analyzed and determine their performance in budgeting activities. Therefore, the relationship between budgetary participation and management performance does not depend on isolated events, but rather on a combination of factors that, through interacting, determine that relationship.

The confirmation of these results presents theoretical, practical, and social contributions. Among the theoretical contributions, there is the understanding of the interactive effects of factors existing within the budgetary context that exert an influence on the relationship between budgetary participation and management

performance, which provides an explanation for the conflicting results found in the literature, denoting under which conditions the effects of participation on performance can be achieved. The results found enabled the confirmation of Bandura's (1977) interactionist approach, as they provide new evidence by observing: a) the existence of a management practice; b) a real context of social interaction; and c) the individual, the focus of analysis, and their cognitive and behavioral aspects (which interact with the environment).

The results contribute to showing that psychological capital, together with managerial attitudes, has a positive impact on individuals' participation in budgetary processes and on their performance. The research innovates by evaluating, based on an interactionist approach, predictive factors for management performance within the budgetary context, contemplating the joint analysis of cognitive and personal, behavioral, and environmental factors.

With regard to the practical contribution, based on the results and on the theoretical framework used, the study seeks to assist academics and professionals from the areas of controllership and organizational management in understanding factors that should be taken into consideration in the work environment so that participation in budgetary process occurs in order to positively influence managerial attitudes and performance, as well as so that management control system designers can understand the interactions that exist between adopted management practices and behavioral aspects and their reflections in human action at work.

Among these factors, the analysis of psychological capital and the feeling of utility of the budget, as well as commitment to the budgetary goals, enable a competitive advantage in relation to the competition, since once managers' psychological capital is enhanced, they tend to present proactive managerial attitudes, they will participate more actively in budgetary processes, and they will present better management performance in those activities, which besides qualifying the management processes will present reflections in organizational effectiveness and in the economic-financial indicators of organizations.

The proposed approach can serve as a guide for efficient management, as psychological capital can be worked on and improved in individuals through capacity building and training. Moreover, the indirect effects of psychological capital and managerial attitudes on the relationship between participation and performance suggest that superiors should stimulate certain practices, such as budgetary participation, so that managers' performance can be positively leveraged in the development of their budgeting activities.

Companies can design organizational practices and resources to develop individuals' psychological capital and managerial attitudes, given that these factors focus on the development of positive forces, instead of their dysfunctions. This is considered a potential innovation of the study, as it contrasts with most of the research on budgetary participation, which has concentrated on the negative consequences of participation.

In these circumstances, the budgetary processes can be developed effectively, given that individuals' psychological capacities become part of their psychological structure, which can also influence their behaviors and the obtainment of challenging budgetary goals and superior performance, a theme that is scarcely investigated in the behavioral research in accounting based on SCT.

The social contribution of this research relates to the benefit that studying psychological capital and managerial attitudes grants to society and managers who have budgetary attributions, as these topics contribute to the proactive development of individuals, to budgetary processes, to organizations as a whole, as well as enabling economic growth to be leveraged, offering a basis for better using company resources, which will be reflected in society and in individuals' employability and quality of life. Thus, the internalization of self-efficacy, optimism, hope, and resilience, as well as positive managerial

attitudes, will lead to organizations obtaining better results, which will impact the economy and even the creation of new jobs.

This evidence, even though it presents limitations, stimulates new research to be conducted. Standing out among the limitations is the analysis of industrial sectors without separating them, as this can cause bias in the data analysis. The adaptation of the instruments used for data collection and the use of a self-completed questionnaire (self-reporting) represent another limitation. However, it is believed that the methodological rigor adopted for the collection and the statistical procedures used for the data analysis minimized these possibilities of biases in the data analyzed. The existence of other intervening variables and hidden indicators in the variables observed, which were not investigated in this research, could impact the relationships analyzed, thus representing another limitation of the study.

We recommend further investigations with the purpose of analyzing other cognitive, personal, and behavioral factors, addressing the indirect effects between budgetary participation, these factors, and management performance in budgeting activities. Conducting new studies on the topics analyzed would contribute to the formation of a consolidated body of literature based on an emerging approach: the behavioral area of accounting.

REFERENCES

- Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, 22(2), 127-152.
- Bagozzi, R. P., & Phillips, L. W. (1982). Representing and testing organizational theories: A holistic construal. *Administrative Science Quarterly*, 27, 459-489.
- Bandura, A. (1977). *Social learning theory*. Prentice-Hall.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bandura, A. (2004). *The growing primacy of perceived efficacy in human self-development, adaptation and change*. Publicacions de la Universitat Jaume.
- Bandura, A. (2011). A social cognitive perspective on positive psychology. *Revista de Psicología Social*, 26(1), 7-20.
- Birnberg, J. G., Luft, J., & Shields, M. D. (2007). Psychology theory in management accounting research. *Handbook of Management Accounting Research*, 1, 113-135.
- Chong, V. K., & Johnson, D. (2007). Testing a model of the antecedents and consequences of budgetary participation on job performance. *Accounting Business Research*, 37(1), 3-19.
- Chong, V. K., & Tak-Wing, S. L. (2003). Testing a model of the motivational role of budgetary participation on job performance. *Asian Review of Accounting*, 11(1), 1-17.
- Confederação Nacional da Indústria (National Confederation of Industry). *Indústrias do Brasil*. <https://www.portaldaindustria.com.br/cni/>
- Covaleski, M., Evans III, J. H., Luft, J., & Shields, M. D. (2007). Budgeting research: Three theoretical perspectives and criteria for selective integration. *Handbook of Management Accounting Research*, 2, 587-624.
- Dani, A. C., Zonatto, V. C. S., & Diehl, C. A. (2017). Participação orçamentária e desempenho gerencial: meta-análise das relações encontradas em pesquisas na área comportamental da contabilidade. *Advances in Scientific and Applied Accounting*, 10(1), 54-72.
- Derfuss, K. (2016). Reconsidering the participative budgeting-performance relation: A meta-analysis regarding the impact of level of analysis, sample selection, measurement, and industry influences. *The British Accounting Review*, 48(1), 17-37.
- Etemadi, H., Dilami, Z. D., Bazaz, M. S., & Parameswaran, R. (2009). Culture, management accounting and managerial

- performance: Focus Iran. *Advances in Accounting, Incorporating Advances in International Accounting*, 25(2), 216-225.
- Frezatti, F., Relvas, T. R. S., Junqueira, E., Nascimento, A. R. do, & 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.
- Hair, J. F., Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2009). *Análise multivariada de dados* (5th ed.). Bookman.
- Hashim, A. W., Hanafi, I., Fitrianto, A., & Darwish, H. (2014). Roles of budgetary participation on leader's performance. *Asian Social Science*, 10(12), 35-40.
- Jermias, J., & Yigit, F. (2013). Budgetary participation in Turkey: The effects of information asymmetry, goal commitment, and role ambiguity on job satisfaction and performance. *Journal of International Accounting Research*, 12(1), 29-54.
- Latham, G. P., & Steele, T. P. (1983). The motivational effects of participation versus goal setting on performance. *Academy of Management Journal*, 26(3), 406-417.
- Lu, C.-T. (2011). Relationships among budgeting control system, budgetary perceptions, and performance. *African Journal of Business Management*, 5(15), 6261-6270.
- Lunardi, M. A., Zonatto, V. C. da S., & Nascimento, J. C. (2020). Efeitos cognitivos mediadores do compartilhamento de informação na relação entre participação orçamentária e desempenho gerencial. *Revista Contabilidade & Finanças*, 31(82), 14-32.
- Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge*. Oxford University Press.
- Macinati, M. S., Bozzi, S., & Rizzo, M. G. (2016). Budgetary participation and performance: The mediating effects of medical managers' job engagement and self-efficacy. *Health Policy*, 120(9), 1017-1028.
- Macinati, M. S., & Rizzo, M. G. (2014). Budget goal commitment, clinical managers' use of budget information and performance. *Health Policy*, 117(2), 228-238.
- Mahlendorf, M. D., Schäffer, U., & Skiba, O. (2015). Antecedents of participative budgeting – A review of empirical evidence. *Advances in Management Accounting*, 25, 1-27.
- Mahoney, T. A., Jerdee, T. H., & Carroll, S. J. (1965). The job(s) of management. *Industrial Relations*, 4(2), 97-110.
- Merchant, K. A. (1981). The design of the corporate budgeting system: Influences on managerial behavior and performance. *The Accounting Review*, 56(4), 813-829.
- Mia, L. (1988). Managerial attitude, motivation and the effectiveness of budget participation. *Accounting, Organizations and Society*, 13(5), 465-475.
- Milani, K. W. (1975). The relationship of participation in budget-setting to industrial supervisor performance and attitudes: A field study. *The Accounting Review*, 50(2), 274-284.
- Nascimento, J. C. (2017). *Efeitos do capital psicológico de controllers em atitudes, comportamentos e no desempenho gerencial sob o contexto orçamentário* [Master's Dissertation]. Universidade Regional de Blumenau.
- Ni, F.-Y., Su, C. C., Chung, S.-H., & Cheng, K.-C. (2009). Budgetary participation's effect on managerial outcomes: Mediating roles of self-efficacy and attitudes toward budgetary decision makers. *NTU Management*, 19(2), 321-347.
- Pajares, F. (2002). *Overview of social cognitive theory and of self-efficacy*. University of Kentucky.
- Parker, R. J., & Kyj, L. (2006). Vertical information sharing in the budgeting process. *Accounting, Organizations and Society*, 31(1), 27-45.
- Revista Amanhã. *500 maiores do Sul*. <https://amanha.com.br/500maiores/#500maiores>.
- Saithong-In, S., & Ussahawanitchakit, P. (2016). Psychological capital and job performance: An empirical research of certified public accountants (CPAs) in Thailand. *The Business & Management Review*, 7(5), 499-506.
- Sandalgaard, N., Bukh, P. N., & Poulsen, C. S. (2011). The interaction between motivational disposition and participative budgeting: Evidence from a bank. *Journal of Human Resource Costing & Accounting*, 15(1), 7-23.
- Santos, V. dos, Beuren, I. M., & Marques, L. (2021). Desenho e uso justos do processo orçamentário e desempenho gerencial. *Revista Contabilidade & Finanças*, 32(85), 29-45.
- Schlup, D. (2018). *Efeitos mediadores do capital psicológico e da síndrome de burnout na relação entre participação orçamentária e desempenho gerencial* [Master's Dissertation]. Universidade Regional de Blumenau.
- Shields, J., & Shields, M. (1998). Antecedents of participative budgeting. *Accounting, Organizations and Society*, 23(1), 49-76.
- Venkatesh, R., & Blaskovich, J. (2012). The mediating effect of psychological capital on the budget participation-job performance relationship. *Journal of Management Accounting Research*, 24(1), 159-175.
- Wentzel, K. (2002). The influence of fairness perceptions and goal commitment on managers' performance in a budget setting. *Behavioral Research in Accounting*, 14(1), 247-271.
- Yuliansyah, Y., & Khan, A. A. (2017). A revisit of the participative budgeting and employees' self-efficacy interrelationship – Empirical evidence from Indonesia's public sector. *International Review of Public Administration*, 22(3), 213-230.
- Zonatto, V. C. da S., Weber, A., & Nascimento, J. C. (2019). Efeitos da participação orçamentária na assimetria informacional, estresse ocupacional e desempenho gerencial. *Revista de Administração Contemporânea*, 23(1), 67-91.
- Zonatto, V. C. da S., & Lavarda, C. E. F. (2013). Evidências dos efeitos da participação orçamentária na assimetria de informação, estresse ocupacional e desempenho no trabalho. *Advances in Scientific and Applied Accounting*, 6(1), 92-111.