



# Fair design and use of the budgetary process and managerial performance

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
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## ABSTRACT

This study analyzes the impacts of the fair design and use of the budgetary process, from the perspectives of formal and informal justice, on fairness judgments, on budgetary participation, and on managerial performance. Complementarily, it also analyzes the mediating effect. Research on the impacts of budgetary participation on managerial performance presents conflicting and inconclusive evidence. The studies on organizational justice, in turn, mainly focus on individual perceptions of justice, from a descriptive and perceptual perspective, not considering the normative approach, and treating justice rules and fairness judgments as synonymous. That segregation is relevant as it reinforces the importance of the fair design and use of the budgetary process, going beyond considering individual fairness judgments. The research revealed that the fair design and use of the budgetary process influence managerial performance; however, the individual perception of justice (fairness judgments) did not exert a direct influence. These findings are relevant because they highlight the impacts of justice in terms of the effects that a system generates, not only considering individual perceptions. A survey was conducted with a random sample of 110 managers chosen using the LinkedIn social network. For the data analysis, the structural equations modeling technique was applied. The study contributes to the literature that examines behavioral aspects of the relationship between budgetary participation and managerial performance, by seeking to understand in which conditions budgetary participation results in better performance. In this research, these relationships are analyzed in light of the foundations of justice, from the perspective of justice rules and fairness judgments. The evidence suggests that budgetary participation affects managerial performance when it results from the fair design and use of the budgetary process.

**Keywords:** formal justice, informal justice, fairness judgments, budgetary participation, managerial performance.

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## 1. INTRODUCTION

The impacts of budgetary participation on managerial performance are analyzed in various studies, but the theoretical-empirical evidence is conflicting and inconclusive (Derfuss, 2015). Argyris (1952), one of the forerunners in proposing that budgetary participation can influence performance, puts forward that an autocratic budgetary process can cause negative behavioral consequences. Maiga and Jacobs (2007) observed that participative budgets have a positive influence over performance, since when managers are involved in the budgetary process there is an exchange of information and commitment to goals (Hariyanti et al., 2015). Other studies [e.g., Lau & Lim (2002b), Lunardi et al. (2020), and Wentzel (2002)] did not find a direct effect between budgetary participation and performance or even a negative relationship.

These divergences derive from a number of factors, such as the absence of a uniform definition in the literature for performance and the possibility of measuring it at different levels, for example, managerial, departmental, or organizational performance (Derfuss, 2015). In this study, we chose to analyze managerial performance as being the result of the work of each member of the organization in management activities (planning, coordination, supervision, human resources, negotiation, and representation) (Hariyanti et al., 2015), the achievement of budgetary goals (Lau & Lim, 2002a), and general performance.

Another factor to be considered is the theoretical lens for analyzing the relationship of performance with behavioral variables. In this study, it is assumed that justice in the design and use of the budgetary process is one of the requirements for incentivizing budgetary participation, increasing managers' perception of fairness and improving managerial performance. Studies with these elements have been conducted based on two main streams. The first considers that a fair budget promotes managers' participation in the budgetary process (Lau & Lim; 2002b, Libby, 1999; Lindquist, 1995). The second conceives budgetary participation as an antecedent of organizational justice that enables subordinates and superiors to express their concerns in relation to the budgetary procedures (Wentzel, 2002), being reflected in feelings of justice (Lau & Lim, 2002a; Maiga & Jacobs, 2007; Wentzel, 2002).

These different perspectives of studies have generated inconclusive and even conflicting results regarding the role of organizational justice and budgetary participation

in managerial performance. For example, Wentzel (2002) observed a positive and significant relationship between budgetary participation and managerial performance through organizational justice (mediating variable). Lau and Lim (2002b), in turn, verified that budgetary participation mediates the effects of the feelings of justice on managerial performance. In another study of Lau and Lim (2002a), justice acts as a moderating variable in the relationship between budgetary participation and managerial performance.

The absence of a distinction between justice rules and fairness judgments *per se* can contribute to incongruent results in the research (Cugueró-Escofet & Rosanas, 2013). Most of these studies have focused on the justice derived from individuals' subjective evaluations, from a descriptive and perceptual perspective, not considering the concept of justice under the ethical and normative approach (Goldman & Cropanzano, 2015). Individuals' perceptions of justice in the distributive, procedural, and interactional dimensions have been linked to different organizational variables (Cugueró-Escofet et al., 2019), in which the researchers have considered the terms justice and fairness as synonymous, although they are distinct concepts (Goldman & Cropanzano, 2015; Cropanzano & Stein, 2009; Cugueró-Escofet & Rosanas, 2013).

Ambrose and Schminke (2009), Cropanzano et al. (2015), and Goldman and Cropanzano (2015) elucidate that justice can be analyzed from the perspective of justice rules and fairness judgments. For Cugueró-Escofet and Rosanas (2013), justice rules refer to the *ex ante* arrangements of a management control system (MCS) and to the way it is used. They considered two types of justice: (i) formal, which refers to the objectives and rules-based aspects (MCS design); and (ii) informal, which refers to the way a MCS is used (MCS use). They also argued that fairness judgments (*ex post* justice) refer to the perception of the consequences of a MCS and to the form of use.

For Cugueró-Escofet et al. (2019), the separation of these concepts is important because the two types of justice reflect a variety of roles and consequences, but they have been mixed in the literature on organizational justice. *Ex ante* justice (justice rules) is related to the way the system is designed and used, while *ex post* justice (fairness judgments) is related to the consequences of the use of the system and to the perceptions of those affected by the decisions (Cugueró-Escofet & Rosanas, 2013; Goldman & Cropanzano, 2015). Thus, an action that is formally just (e.g., design of the budgetary process)

and informally just (e.g., given the evidence, the manager makes their judgments and decides) may be seen as unfair [e.g., decision perceived as (un)fair by the person implicated] (Cugueró-Escofet & Rosanas, 2013).

Based on the theoretical precepts of Cugueró-Escofet and Rosanas (2013) and of Goldman and Cropanzano (2015), it is assumed that organizations with a fair design and use of the budgetary process are more likely to promote budgetary participation, together with managers' fairness judgments, leading to better managerial performance. It is conjectured that budgetary participation and fairness judgments can mediate the relationship between the formal and information justice of the budgetary process and managerial performance. Thus, the study aims to analyze the impacts of the fair design and use of the budgetary process, from the perspectives of formal and information justice, on budgetary participation, on fairness judgments, and on managerial performance. And, complementarily, it analyzes the mediating effect of fairness judgments and budgetary participation on the relationship between the fair design and use of the budgetary process and managerial performance.

It is considered that justice in the design and use of the budgetary process is implicated in the choice by managers of procedures that enable their subordinates greater participation in the affairs of the organization, as participative procedures are considered fair (Lau & Lim, 2002b) and are reflected in functional behaviors. Justice (formal and informal) is an ethical requirement needed in the design and use of the budgetary process to achieve greater alignment of objectives between individuals and the organization and greater perception of fairness among those who experience the consequences of that system (Cugueró-Escofet et al., 2019). The reflections of organizational justice in managerial performance are analyzed through the lens of managers' participation in the budgetary process, verifying the relevance of the budget in matching employees' activities and efforts with the objectives and strategies of the organization (Libby & Lindsay, 2010).

Therefore, the importance of the fair design and use of the budgetary processes is reinforced, going beyond individual fairness judgments. Thus, the theoretical model of this study, centered on justice rules (separated into formal and informal justice) and fairness judgments, aims to contribute by highlighting the importance of investigating the perceptions of individuals and showing the different stages so that these perceptions can be improved and managed (Cugueró-Escofet & Rosanas, 2013). The literature on organizational justice finds itself in a paradoxical state (Rupp & Paddock, 2010). On one

hand, considerable attention has been paid to specifying employees' perceptions regarding just and unjust treatment at work. On the other hand, there is a parallel movement in the literature arguing for a more holistic approach to studying justice (Rupp & Paddock, 2010).

This study contributes to the literature by empirically addressing the conceptions of formal and informal justice, budgetary participation, fairness judgments, and managerial performance. Ambrose and Schminke (2009) understand that conceptualizing fairness judgments as a mediator of the relationship between the specific facets of justice (in this case, formal and informal) and the results changes the way we think about justice and broadens the research possibilities. For these authors, questions that involve global attitudes, such as organizational commitment or job performance, are more adequately examined with a measure of fairness judgments. Cugueró-Escofet and Fortin (2013) mention that reconciling the psychological-empirical and normative-ethical research on justice is important for theoretical and practical reasons. First, any subjective judgment of fairness is based on some normative judgment through which the individual compares a situation, a decision, or a behavior with an ethical standard. Second, the purpose of implementing justice and addressing injustice in organizations cannot be merely perceptual.

The study also contributes to the literature that examines behavioral aspects of the relationship between budgetary participation and managerial performance, by seeking to understand in which conditions budgetary participation results in better performance. In this research, those relationships are analyzed in light of the foundations of justice. Studies have recognized the need to incorporate considerations of fairness judgments in the conception of MCSs (Voußem et al., 2016), given that they improve performance (Burney et al., 2009), they generate beneficial behaviors, and they contribute to congruence of goals (Cugueró-Escofet & Rosanas, 2013), as well as increasing commitment to the budgetary goals (Lau & Lim, 2002b). The evidence of the present study suggests that budgetary participation affects managerial performance when it results from the fair design and use of the budgetary process. According to Lunardi et al. (2020, p. 30), "antecedent elements to participation, present in budgetary processes, can help in understanding the budgetary configuration of the organization and its consequent effects on attitudes, behaviors, and on performance."

The research also contributes to organizational practice by addressing the aspects of justice that must be considered in the planning and use of MCSs, in this case

in the budgetary process. The results indicate that the fair design of the budgetary process is one of the determinants of managerial performance. Thus, it is important for the configuration of the budgetary process to take into account some premises, for example that the goals are established in a way that includes the individuals and that the evaluations and rewards of the organizational units are linked to the real achievements of each unit and to

the competences of their team, according to the rules and premises established *ex ante* (Cugueró-Escofet & Rosanas, 2013). The results of the research may also be useful for managers of organizations and professionals responsible for designing the budgetary process, by revealing the implications of the aspects of formal and informal justice, budgetary participation, and fairness judgments in terms of managerial performance.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### 2.1 Formal and Informal Justice in the Budgetary Process, Fairness Judgments, and Managerial Performance

Organizational justice is generally addressed in the literature under three dimensions: distributive, procedural, and interactional (Langevin & Mendoza, 2013). Various studies have been conducted highlighting the relationship of each type of justice with attitudes and/or behaviors of individuals with reflections in the organizational environment [see meta-analyses of Cohen-Charash & Spector (2001) and Colquitt et al. (2001, 2013)]. However, Ambrose and Schminke (2009) mention that researchers have come to question the benefits of concentrating on three specific types of justice, suggesting examining fairness judgments in general. According to Greenberg (2001), when individuals form impressions of fairness, they make a holistic judgment.

In this sense, Goldman and Cropanzano (2015) warn that researchers of organizational justice tend to treat the terms justice and fairness as synonyms. After a theoretical discussion, the authors concluded that these concepts are different. They understand that justice should be defined as adherence to rules of conduct, while fairness refers to individual moral evaluations of that conduct. Thus, organizational justice can be analyzed from the perspective of justice rules and fairness judgments. Cugueró-Escofet and Fortin (2013) explain that, in the first approach, justice rules use philosophical theories to prescribe what justice should be, while the second approach is descriptive and proposes to investigate justice as a subjective experience. In this case, it seeks to understand what people perceive to be fair and how they react to this perception of fairness (Cugueró-Escofet & Fortin, 2013).

According to Goldman and Cropanzano (2015), justice denotes morally necessary conduct, while fairness represents an evaluative judgment, regarding whether that conduct is morally commendable. A just procedure, for example, may provide a voice, but the voice may or

may not be seen as fair, depending on the individual and the situation. Cugueró-Escofet and Rosanas (2013) defend the incorporation of justice into the conception of MCSs. They explain that justice refers to a system's *ex ante* arrangements and the way it will be used, while fairness refers to the *ex post* consequences of the system. Cugueró-Escofet and Rosanas (2016) distinguish between two types of justice in the conception of rules: formal justice, which refers to the rules-based aspects of the formal system; and informal justice, which refers to the use of a system that will subsequently be the target of the individual's evaluation/judgment.

In this proposition, the emphasis is placed on the conception and use of more ethical MCSs, where the fairness judgments (individual's evaluation) are consequences of the formal and informal justice (Goldman & Cropanzano, 2015). Therefore, justice rules transcend the normative or prescriptive approach (Cropanzano & Stein, 2009); they are concerned with what is just and consider justice an ideal (Cugueró-Escofet & Fortin, 2013), a necessary condition (Cropanzano et al., 2015). Cugueró-Escofet and Rosanas (2016) also emphasize that the MCS design is related with the respective use, where informal justice is a key element in the dynamics of an MCS.

The design of an MCS understood as just (formal justice) is, according to Cugueró-Escofet and Rosanas (2013), one that: (i) defines goals that include organizational and individual objectives; (ii) distributes resources and responsibilities among the subunits and evaluates them according to the real accomplishments of each one and the competences of their personnel, aligning with the rules explicitly established *ex ante*; (iii) includes the controllability criterion, which means that the managers should only be evaluated in relation to the elements they have some influence over; (iv) establishes a minimum reward to be received by all the participants and defines a limit for rewarding inequalities; and (v) includes formal means to repair injustices and provides

mechanisms to improve the design of the system to make it more just. These authors also proposed that the use of a just system should: (i) include managers' willingness to use a just system and to nurture equity in the results; (ii) include managers' willingness to propose changes in the MCS design to make it more just; (iii) explain and make explicit the specific inequalities in any reward or recognition, with justified criteria, to avoid arbitrariness.

Similarly, Magner et al. (2006, p. 410) understand that a just budget should contemplate the following formal aspects: (i) voice – the formal budgetary procedures should provide the managers with adequate opportunities to express their opinions about the budget decisions that affect their unit; (ii) resources – the formal budgetary procedures should contain arrangements that enable the managers to question the budget decisions that affect their unit; (iii) precision – formal budgetary procedures should ensure that the budget decisions related to the managers' unit incorporate precise information; and (iv) consistency – formal budgetary procedures should be applied consistently among units and to each period. These propositions contemplate the aspects of the design of a just budgetary process (formal justice) and refer to the conducts needed for justice, which may or may not be perceived by the individuals. And it is also necessary to see their use (informal justice), given that it is impossible to establish a contract that anticipates all possible contingences that may arise (Cugueró-Escofet & Rosanas, 2013).

Magner et al. (2006) suggest that the following budgetary procedures are implemented for them to be just: (i) interpersonal sensitivity – the budget decision-makers should show concern about the managers' rights when implementing the budgetary procedures; (ii) consideration of opinions – the budget decision-makers should consider the managers' opinions regarding the budget for their unit, which does not require the decision-makers to incorporate the managers' requests in the budget; (iii) explanations – the budget decision-makers should provide the managers with clear, timely, and adequate explanations about the reasons for their decision; and (iv) suppression of dichotomies – the budget decision-makers should suppress possibilities that could favor one unit over another in the execution of the budgetary procedures.

Thus, it is expected that the conception/configuration and the use of the budgetary process lead to managers' fairness judgments. According to Greenberg (2001), although this distinction may appear trivial, it is at the heart of what is understood as justice. Understanding the concept of organizational justice requires clarifying the basic parameters of the building of justice. Cropanzano

et al. (2015) explain that this distinction is necessary because something important needs to occur before an occurrence is judged as fair (or not). Rupp and Paddock (2010) mention that the rules or activation of them by the individual are often antecedents of an evaluative judgment; that is, it is through the application of these rules that individuals are able to evaluate the fairness. Hence, the following hypothesis was formulated:

H<sub>1a</sub>: the fair design and use of the budgetary process, from the perspective of formal and informal justice, positively influence fairness judgments.

The literature has revealed that certain MCS characteristics lead people to perceive them as (un)fair, which makes the individuals more or less motivated to contribute to the achievement of the organizational objectives (Cugueró-Escofet et al., 2019). Burney et al. (2009) mention that there are certain attributes of MCSs for which users will form perceptions that, in turn, facilitate more effective behaviors, where they behave according to how they perceive the system, and not necessarily its real design. A crucial application of this is that a MCS needs to have formal and informal elements that try to influence people (Cugueró-Escofet & Rosanas, 2016).

The study of Cugueró-Escofet and Rosanas (2013) reveals that different levels of justice in the design and use of an MCS can lead to different levels of objective alignment, where higher levels of congruence of objectives can be achieved by introducing justice in the design and use of the MCSs. The research of Cugueró-Escofet et al. (2019) revealed that formal and informal justice in MCSs favors fairness judgments that are fundamental for the congruence of objectives.

The fair design and use of the budgetary process signals to the managers that they will receive from the organization their fair share of material benefits (e.g., favorable budgets and rewards tied to those budgets) and psychological benefits (e.g., self-esteem) (Magner et al., 2006). Wentzel (2002) even found that some of the negative consequences of scarce resources can be mitigated by the use of budgetary procedures considered as fair.

Libby (1999) observed in his research, for example, that the combination of the opportunity of a voice and the receipt of an explanation for the lack of influence of subordinates over the final budget had a positive effect on performance. For Magner et al. (2006), when budget decision-makers provide explanations for their budgetary decisions, the managers will probably perceive such treatment as a sign that they are valued members of the organization.

With the aim of cultivating and sustaining this beneficial relationship with the organization and the decision-makers and, consequently, receiving these expected benefits in the long run, managers will reciprocate with better performance (Magner et al., 2006). Under this premise, it is argued that managers will have a greater managerial performance in relation to the activities of planning, coordination, supervision, negotiation, and accomplishing budgetary goals, in order to enjoy and maintain the benefits derived from the fair design and use of the budgetary process. Hence, the following hypothesis was formulated:

H<sub>1b</sub>: the fair design and use of the budgetary process, from the formal and informal justice perspective, positively influence managerial performance.

The *ex ante* existence of formal and informal justice and the alignment of interests increase the perceptions of justice of those implicated by the decisions (Cugueró-Escofet & Rosanas, 2013). Perceptions of justice are essential, given that perceived injustice can result in dysfunctional *ex post* behaviors (Burney et al., 2009; Cugueró-Escofet et al., 2019; Goldman & Cropanzano, 2015). Previous research has revealed that fair treatment is associated with favorable attitudes to work and better job performance (Cropanzano et al., 2002).

Ambrose and Schminke (2009) found that global fairness judgments mediate the relationship between specific fairness judgments and workers' attitudes, such as managerial performance. Little et al. (2002) observed that managers with high job performance perceive that both the formal budgetary procedures and the implementation of those procedures are fair. They also observed that when some budgetary procedure is conceived as unfair, managers may make a global judgment that the whole budgetary process (including the formal procedures) is unfair and respond with poor job performance. Cropanzano et al. (2015) and Goldman and Cropanzano (2015) reinforce the idea that fairness judgments originating from rules (formal and informal justice) are related with individuals' behaviors.

Burney et al. (2009) provided evidence that high levels of organizational justice are mechanisms via which the perceived characteristics of the strategic performance measurement system (SPMS) are associated with the worker's (in-role) performance. The implication is that companies do not necessarily need to introduce subjectivity in the incentive system, but can improve performance by linking incentive contracts with their SPMS if the system contains characteristics that improve the workers' perception about fairness.

The premise is that the sense of fairness increases the managers' commitment to the budgetary goals and, consequently, improves performance (Wentzel, 2002). When the individuals perceive that the decisions are based on just processes, they will more probably commit to the goal because that just treatment means that the organization values and worries about the workers' well-being (Libby, 1999). This results in worker reciprocity in the form of better job performance (Libby, 1999; Lindquist, 1995). When the workers perceive the procedures are fair, they reciprocate with more positive attitudes in relation to the organization (Cropanzano et al., 2002), with increased organizational commitment, more job involvement, greater efforts to carry out the tasks and fulfill objectives, and more willingness to cooperate, which are reflected in better performance of their roles (Kramer & Hartmann, 2014).

Therefore, a fair design and use of the budgetary process presume that the managers will receive just and beneficial treatment from the organization (Magner et al., 2006) and in exchange they will reciprocate with better performance in relation to the activities of their area of responsibility. Thus, the fair design and use of the budgetary process are expected to strengthen managers' fairness judgments and, together, will be reflected in better managerial performance. Hence, the following hypotheses were formulated:

H<sub>1c</sub>: fairness judgments positively influence managerial performance.

H<sub>1d</sub>: fairness judgments mediate the positive effect of the fair design and use of the budgetary process, from the perspective of formal and informal justice, on managerial performance.

## 2.2 Formal and Informal Justice of the Budgetary Process, Budgetary Participation, and Managerial Performance

The literature foresees rules for the fair design and use of MCSs; however, it needs to be recognized that the systems do not address all the possible situations and should enable forms of reparation when necessary (Cugueró-Escofet et al., 2019). Thus, organizations need to adopt certain procedures and policies that can ensure formal and informal justice in MCSs (Cugueró-Escofet & Rosanas, 2013). Budgetary participation is one of the mechanisms that can be chosen to achieve these justice rules. Through budgetary participation, organizations can raise various questions contained in a fair design and use of the budgetary process.

The budgetary participation mechanism contains arrangements that enable managers to appeal budgetary decisions (Magner et al., 2006). This participation can be used to share information and for subordinates to reflect their concerns and values (Sholihin et al., 2011), as well as containing arrangements for budgetary procedures to be applied consistently across all units (Magner et al., 2006). Lau and Lim (2002b) argue that the importance that organizations attribute to maintaining justice in the organization drives the use of the participative budget. They clarify that, as justice is one of the main determinants of the choice of procedures, and as the procedures that involve participation tend to be considered fair, organizations committed to maintaining justice in the design and use of an MCS will probably choose participative procedures.

Lau and Lim (2002b) investigated the role of budgetary participation in the relationship between procedural justice and performance of subordinates and they considered procedural justice to be an antecedent of budgetary participation. The procedural justice construct presented a relationship with evaluations of fairness of the procedures adopted to assess performance, communicate feedback, and determine salary increases and promotions, that is, aspects of formal and informal justice proposed by Cugueró-Escofet and Rosanas (2013), as well as some (communication of feedback) of the implementation procedures listed by Magner et al. (2006). Therefore, they are related to the perception of formal and informal justice and do not contemplate fairness judgments.

Kyj and Parker (2008) took this approach further by proposing that when budgetary goals are used to evaluate subordinates, superiors incentivize subordinate contributions in the definition of the budget with a view to perceptions of justice. Zonatto et al. (2019) discovered that incentivizing budgetary participation influences the participation of managers in the budget, where the incentive for participation can be characterized as one of the elements of formal and informal justice. This suggests that the fair design and use of the budgetary process is an antecedent of budgetary participation (Lau & Lim, 2002b). From this perspective, the following hypothesis was formulated:

H<sub>2a</sub>: the fair design and use of the budgetary process, from the perspective of formal and informal justice, positively influence budgetary participation.

Budgetary participation is constituted of a mechanism that can be used for the workers to successfully carry out challenging tasks (Derfuss, 2015). For this author, as it is a cognitive mechanism, it is configured in a process of

information exchange between superior and subordinate, which results in a better understanding of the tasks to be performed, as well as better decision and performance results. Tiller (1983) argues that, even with the absence of performance incentives, budgetary participation results in individuals having greater commitment and better performance in achieving the established goals, given that they consider the process to be fair.

Lunardi et al. (2019) found that the participation of controllers in the budgetary processes of their organizations improves their job involvement and influences their managerial attitudes, their propensity to share information, and their performance. Derfuss (2015) clarifies that, due to the motivation mechanisms, budgetary participation increases the subordinate's trust, sense of control, and their involvement with the organization, which together cause less resistance to change and more commitment to budgetary decisions, which is reflected in performance. Lunardi et al. (2020) indicate that studies reveal that budgetary participation causes better job performance, as subordinates have the perception that they are being treated as valuable partners in the decision-making process.

Budgetary participation is revealed to be a means of communication between subordinates and superiors, not only in questions related to the budget, but also in others that interest them (Lau & Lim, 2002b). It facilitates a greater understanding of the process of defining the budget and of other organizational matters (Milani, 1975; Zonatto et al., 2019), as well as enabling the involvement and influence of managers in determining the budget for their units (Shields & Shields, 1998), which promotes greater acceptance and commitment to achieving the goals (Lau & Lim, 2002b). Hence, the following hypothesis was formulated:

H<sub>2b</sub>: budgetary participation positively influences managerial performance.

Previous studies (Kyj & Parker, 2008; Lau & Lim, 2002b; Lindquist, 1995) have revealed that the budgetary participation mechanism intervenes in the relationship between a just MCS and managerial performance. Lindquist (1995) suggested that an antecedent of budgetary participation is the desire to maintain the justice in the systems for controlling incentive-based remuneration, where the consequences of greater worker participation are greater satisfaction with the budget, job satisfaction, and performance. Lau and Lim (2002b) observed that the reflections of justice in managerial performance can be more complex than a simple direct relationship, and that budgetary participation can act as a mediator. They suggest that increased participation

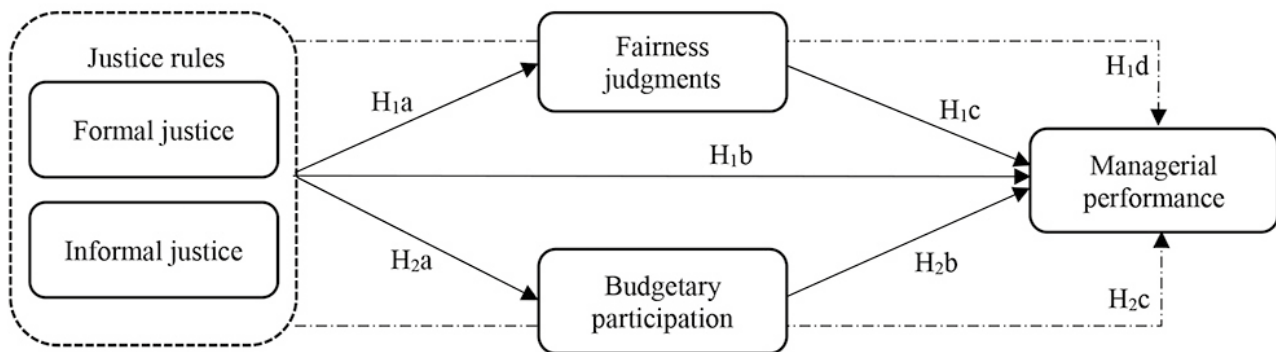
leads to greater communication, trust, and cooperation and, consequently, improved performance.

Kyj and Parker (2008) found that superiors promote budgetary participation when subordinates are evaluated using budget goals. For the authors, these findings reflect the concerns of the organization with fairness in the performance evaluation and indicate that budgetary participation can mediate the relationship between the evaluative use of the budget and job results, which previous research has linked to organizational justice. Thus, it is conjectured that a fair design and use of the budgetary process imply better managerial performance through the

adoption of budgetary participation mechanisms. From this perspective, the following hypothesis was formulated:

H<sub>2c</sub>: budgetary participation mediates the positive effect of the fair design and use of the budgetary process, from the perspective of formal and informal justice, on managerial performance.

Therefore, the theoretical model of the research is based on the premise that perceptions of formal and informal justice in the budgetary process (independent variables) influence managerial performance (dependent variable) through budgetary participation and fairness judgments (mediating variables), as according to Figure 1.



**Figure 1** Theoretical model of the research

**Note:** The dotted lines represent the indirect effects.

**Source:** Elaborated by the authors.

In accordance with Cugueró-Escofet and Rosanas (2013), justice rules are conceived as the *ex ante* arrangements of an MCS and the way it is used, while fairness judgments refer to individuals' perceptions regarding that system (Cugueró-Escofet & Rosanas, 2013).

Thus, justice rules relate to the fair design and use of the budgetary process (organizational scope) and fairness judgments refer to the perceptions of those implicated in it (individual scope).

### 3. METHODOLOGICAL PROCEDURES

#### 3.1 Sample and Collection Procedures

The data were gathered from managers responsible for some organizational/departmental area of the 100 biggest companies in the state of Santa Catarina listed in the *Revista Amanhã* magazine. As they are constituted of the biggest organizations in the state, the assumption was made that they practice a consolidated budgetary process. The search to contact these managers was carried out via LinkedIn. In the search process, the Portuguese terms for "managers," "directors," "coordinators," and "supervisors" were used.

Based on this selection, an invitation was sent to approximately 1,000 managers in order to form part of a network created in LinkedIn. The 442 managers who accepted to form part of the network were sent the research instrument via Google Forms and 114 questionnaires were returned, though four were incomplete. The research sample covered the 110 respondents, a sufficient number to analyze the proposed theoretical model, according to the sample size and statistical power of the analyses conducted with the G\*Power software, which resulted in at least 85 valid responses.



The demographic profile of the respondents indicates that most are male (85.4%), aged between 31 and 40, with an average of approximately 15 years at their company. Most have taken a *lato sensu* specialization course, particularly in the areas of business, accounting, and engineering. The respondents carry out the roles of manager (52), supervisor (20), coordinator (16), controller (12), and director (10) in some organizational area. It was also observed that more than 50% of the respondents work in companies with more than 1000 employees. The respondents were primarily from metallurgical, textile, food and drink, financial sector, and electricity companies.

### 3.2 Measurement of the Research Variables

The constructs were measured by multiple items (Appendix A). A seven-point Likert-type scale was used, varying from totally disagree to totally agree for the variables formal justice, informal justice, fairness judgments, and budgetary participation. The managerial performance scale varied from very low to very high. Budgetary participation was evaluated using six items, in which the respondents evaluated their level of involvement with the budgetary process. These statements were taken from Leach-López et al. (2007) and Milani (1975). The Cronbach's alpha of this construct was 0.926.

Managerial performance was measured based on the scale developed by Mahoney et al. (1963), in which the respondents self-assessed in the following dimensions: planning, coordination, assessment, investigation, supervision, people management, negotiation, and representation (Wentzel, 2002). Two more items were included: general performance assessment (Lau & Lim, 2002b) and achievement of established budget goals. The construct covered 10 items and resulted in a Cronbach's alpha of 0.962. The questions were taken from the study of Lau and Lim (2002b), with the addition of the achievement of budget goals item, given the purpose of this research.

To measure organizational justice, we adopted the criterion proposed by Lind (2001) of indirect and direct measures, whose aim was to distinguish justice rules (formal and informal) from fairness judgments. The indirect measures refer to the rules and ask the respondents about real events in their environments, such as if the remuneration was equitably divided. The direct measures, in turn, refer to the fairness judgments and ask about how the individuals evaluate such events

(Goldman & Cropanzano, 2015). Ambrose and Schminke (2009) explain that the indirect measures operationalize organizational justice by asking about the presence or absence of various events, results, and/or transactions that can be presumed to be causes of fairness judgments. The direct measures, in turn, require a subjective evaluation of fairness or an evaluative judgment (for example, I consider the procedures used to take decisions as fair).

The statements for this construct were taken and adapted from the studies of Colquitt (2001), Sotomayor (2006), and Wentzel (2002). The adaptations relates to the contextualization for the environment of the budgetary process. To classify the statements in the formal and informal justice and fairness judgments constructs, we considered the recommendations for distinguishing between indirect and direct measures proposed by Lind (2001), reinforced and explained by Ambrose and Schminke (2009), Cropanzano and Stein (2009), Cropanzano et al. (2015), and Goldman and Cropanzano (2015). We also considered the propositions of Cugueró-Escofet and Rosanas (2013) regarding procedures that should be observed for the fair design and use of an MCS, as well as the formal elementary procedures prescribed by Magner et al. (2006). The organizational justice construct totaled 15 statements, with five for each perspective investigated. The Cronbach's alphas of the formal justice, informal justice, and fairness judgments constructs were 0.897, 0.933, and 0.909, respectively.

The form of data collection, in which all the measures were collected simultaneously and from the same source, suggests the existence of common method bias. To minimize possible effects of the bias from the use of the common method, some procedural measures, recommended by Podsakoff et al. (2003), were adopted: (i) assuring the anonymity of the respondents; (ii) guidance that there were no right or wrong answers and that the respondents should answer the questions in accordance with the moment; (iii) carrying out a pre-test with two researchers from the area and two managers who participate in the budgetary process of their respective areas of responsibility; (iv) semantic differential in the measures of the criterion and predictive variables. In turn, Harman's single factor test for all the items in the study shows that the first factor explains 41.9% of the variance, which is lower than the usual cut-off point of 50%, above which common method bias should be seen as a threat (Podsakoff et al., 2003).

## 4. DESCRIPTION AND ANALYSIS OF THE RESULTS

To analyze the data and test the hypotheses, we used the structural equation modeling (SEM) technique, estimated based on partial least squares (PLS).

### 4.1 Measurement Model

The first stage of the PLS-SEM consists of the measurement model, in which the reliability (individual and composite) and validity (convergent and discriminant) of the measures of the constructs are analyzed (Hair et al., 2017). In the measurement model validation, it was confirmed that the measures are reliable (individual reliability of items and of construct) and valid (convergent and discriminant validity) (Hair et al., 2017).

All the individual items presented factor loadings higher than 0.70, the lowest one being 0.72 for a budgetary

participation item: “I elaborate the budget for my area of responsibility, but my superior reviews it.” With relation to the reliability of the constructs, the Cronbach’s alphas and the composite reliability were higher than 0.70, which are values that are considered adequate (Hair et al., 2017). The lowest Cronbach’s alphas and composite reliability indices were 0.900 and 0.927 in the formal justice construct.

The convergent validity analysis was conducted using the average variance extracted (AVE), which was greater than 0.50 for all the constructs, varying between 0.717 (formal justice) and 0.793 (fairness judgments). The discriminant validity was evaluated at the level of the indicators and latent variables using the Fornell and Larcker (1981) criterion and was shown to be well-founded for both criteria. Table 1 shows the results of the measurement model.

**Table 1**

*Discriminant validity, convergent validity, and consistency of the constructs*

Constructs	1	2	3	4	5
1 Formal justice	<b>0.847</b>				
2 Informal justice	0.786	<b>0.889</b>			
3 Fairness judgments	0.842	0.786	<b>0.890</b>		
4 Budgetary participation	0.678	0.730	0.706	<b>0.857</b>	
5 Managerial performance	0.524	0.425	0.432	0.542	<b>0.864</b>
AVE	0.717	0.790	0.793	0.735	0.746
Composite reliability	0.927	0.950	0.950	0.943	0.967
Cronbach’s $\alpha$	0.900	0.933	0.935	0.927	0.962

**Note:** *The diagonal elements are the square roots of the average variance extracted (AVE). The elements outside the diagonal are the correlations between the constructs.*

**Source:** *Elaborated by the authors.*

The correlations of formal and informal justice (0.786) and fairness judgments (0.842) were high, as was the correlation between informal justice and fairness judgments (0.786), which may result in discriminant validity problems. These results were convergent with the study conducted by Cugueró-Escofet et al. (2019), who highlight theoretical support that both aspects are different in studies on justice, which justifies the distinction between formal and informal justice, both in more philosophical and in applied studies.

Gefen and Straub (2005, p. 92) consider that “discriminant validity is shown when each measurement item weakly correlates with all the other constructs, except the one with which it is theoretically associated.” In the case of this research, the highest correlations occurred with the justice constructs, which are theoretically associated. In addition,

the correlation between all the items associated with formal justice was higher than the correlation between the items that explain informal justice and fairness judgments. This occurred in the same way with the informal justice and fairness judgments items. Thus, the discriminant validity of the items is considered to be adequate.

### 4.2 Structural Model

After verifying the adequacy of the measurement model, the estimates of the structural equations were made using the bootstrapping analysis, with a sample of 110 cases and 1,000 resamplings, to evaluate the significance of the relationships between the latent variables used in the study (Hair et al., 2017). To evaluate the structural model, the following were considered: (i) the Pearson’s coefficient

of determination ( $R^2$ ) and (ii) the predictive relevance ( $Q^2$ ) or Stone-Geisser indicator (Hair et al., 2017). Table 2

reveals the results of the test of the hypotheses of the path coefficients of the proposed model.

**Table 2**  
*Results of the structural model*

Hypotheses	Structural coefficient	Standard error	t-value	p-value
Formal justice → Fairness judgments	0.587	0.077	7.601	<b>0.000</b>
Informal justice → Fairness judgments	0.325	0.091	3.554	<b>0.001</b>
Formal justice → Budgetary participation	0.273	0.114	2.383	<b>0.019</b>
Informal justice → Budgetary participation	0.516	0.109	4.739	<b>0.000</b>
Formal justice → Managerial performance	0.483	0.135	3.576	<b>0.001</b>
Informal justice → Managerial performance	-0.134	0.119	1.127	0.262
Fairness judgments → Managerial performance	-0.180	0.137	1.311	0.193
Budgetary participation → Managerial performance	0.440	0.118	3.727	<b>0.000</b>

**Note:** Evaluation of the structural model ( $R^2$ ) –  $FJ = 0.749$ ;  $BP = 0.562$ ;  $MP = 0.357$ . Predictive relevance ( $Q^2$ ) –  $FJ = 0.585$ ;  $BP = 0.405$ ;  $MP = 0.255$ .

*MP = managerial performance; FJ = fairness judgments; BP = budgetary participation.*

**Source:** Elaborated by the authors.

The results presented in Table 2 suggest associations between the fair design and use of the budgetary process, from the perspective of formal and informal justice, with fairness judgments, budgetary participation, and managerial performance. Positive and significant relationships are found for formal justice with fairness judgments (0.587,  $p < 0.001$ ), budgetary participation (0.273,  $p < 0.05$ ), and managerial performance (0.483,  $p < 0.05$ ). Positive and significant relationships were also found between informal justice and fairness judgments (0.325,  $p < 0.05$ ) and budgetary participation (0.516,  $p < 0.005$ ).

These results provide support for the non-rejection of hypotheses  $H_{1a}$  and  $H_{2a}$ , that the fair design and use of the budgetary process, from the perspective of formal and informal justice, positively influence fairness judgments ( $H_{1a}$ ) and budgetary participation ( $H_{2a}$ ).  $H_{1b}$  is partially accepted, in that the fair design and use of the budgetary process, from the formal and informal justice perspective, positively influence managerial performance, given that no positive and significant associations were observed between informal justice and managerial performance.

These results are consistent with the propositions of Ambrose and Schminke (2009), Cugueró-Escofet and Fortin (2013), and Goldman and Cropanzano (2015), that the evaluation of rules and events antecedes the evaluative judgments of individuals and reinforces the importance of the conception and fair use of MCSs in organizations. This indicates that perceived justice in the design and use of the budgetary process is reflected in the judgments that the budget attributed to the areas of responsibility is fair and is aligned with the managers' needs (Wentzel, 2002).

It also suggests that budgetary participation is the result of a just system, particularly involving informal justice, and converges with the studies of Lau and Lim (2002b), Libby (1999), and Lindquist (1995).

The research also reveals positive and significant relationships between budgetary participation and managerial performance (0.440,  $p < 0.001$ ). This result coincides with the findings of Argyris (1952), Lau and Lim (2002b), Libby (1999), and Lunardi et al. (2019), which enables the non-rejection of  $H_{2b}$ , which hypothesizes that budgetary participation positively influences managerial performance. No positive and significant relationships were found between fairness judgments and managerial performance, which leads to the rejection of  $H_{1c}$ , that fairness judgments positively influence managerial performance.

To examine the mediating effects of fairness judgments and budgetary participation in the relationship between fair design and use of the budgetary process, from the perspective of formal and informal justice, and managerial performance, we followed the recommendations of Hair et al. (2017), of using the bootstrapping approach instead of the Sobel test and analyzing the direct and indirect effects, including all the mediators simultaneously in the model. According to these authors, three types of mediation can be identified: (i) complementary – the indirect and the direct effect are significant and point in the same direction; (ii) competitive – the indirect and direct effect are significant and point in opposite directions; and (iii) indirect – the indirect effect is significant, but not the direct effect. The results of the mediation tests are presented in Table 3.

**Table 3***Results of the mediation tests*

Relationships	Direct effect	Indirect effect	Type of Mediation
Formal justice → Managerial performance via fairness judgments	0.483**	-0.105	No direct mediation
Informal justice → Managerial performance via fairness judgments	-0.134	-0.058	No effect
Formal justice → Managerial performance via budgetary participation	0.483**	0.120*	Complementary
Informal justice → Managerial performance via budgetary participation	-0.134	0.227**	Indirect

\*\* =  $p < 0.05$ ; \* =  $p < 0.10$ .

Source: Elaborated by the authors.

The results indicate that  $H_{id}$  cannot be accepted, which hypothesizes that fairness judgments mediate the positive effect of the fair design and use of the budgetary process, from the perspective of formal and informal justice, on managerial performance, given that no significant direct effects were observed of formal and informal justice on managerial performance via fairness judgments. However, it was observed that budgetary participation mediates the effects between informal justice and managerial performance. No direct effect of informal justice on performance was observed, but the just use of the budgetary process implies better managerial performance via budgetary participation. Hair et al. (2017) explain that, in this case, the indirect mediation corresponds to the total mediation proposed by Baron and Kenny (1986).

These results indicate that management activities can be improved and reflected in better performance during the budgetary process, providing the system allows for proposals to change the design and provides feedback and explanations of the decisions taken (Cugueró-Escofet & Rosanas, 2013). The results of the mediation tests indicate that budgetary participation is the mechanism that favors the fulfillment of these justice rules.

The results presented indicate that there is complementary mediation between formal justice and budgetary participation. According to Hair et al. (2017), this type of mediation indicates partial mediation, and that there are possibly other mediators that can explain the proposed relationship. Given the partial mediation in relation to formal justice and the total mediation in relation to informal justice, the results enable the non-rejection of  $H_{2c}$ , that budgetary participation mediates the positive effect of the fair design and use of the budgetary process, from the formal and informal justice perspective, on managerial performance.

In general, the empirical results support the theoretical framework proposed by revealing that fair design and use of the budgetary process imply the adoption of the budgetary participation mechanism in organizations, greater fairness judgments of managers, and lead to better managerial performance. They also indicate that

budgetary participation exerts a direct influence over managerial performance and acts as a mediating variable in the relationship between formal and informal justice and performance.

### 4.3 Discussion of the Results

The results denote that formal justice (design) and informal justice (use) influence manager' fairness judgments, with greater predictive power for formal justice. In this aspect, it is necessary for the MCS design, in the case of the budgetary process, to be conceived in a just way, with consistent procedures and no biases (Magner et al., 2006), considering the principle of controllability (Cugueró-Escofet & Rosanas, 2013), with a voice mechanism (Libby, 1999) and possibilities for repairing the system (Langevin & Mendoza, 2013). These results reinforce the importance of the MCS being conceived and used in a just way.

Langevin and Mendoza (2013) indicate that MCSs, when unjustly conceived, without the existence of formal justice, can lead managers to have behaviors that are detrimental to the company. Cugueró-Escofet and Rosanas (2016) warn that if the MCS is formally unjust from the start, the informal injustice will mean remaining in this last stage, causing minimum congruence of goals, a lack of identification with the organization, and dysfunctional learning. Thus, it is necessary for MCSs, in the case of the budgetary process, to be conceived with a certain degree of flexibility, to promote creativity, recognize the existence of flaws in the MCSs, and establish formal means of repairing any injustices (Cugueró-Escofet & Rosanas, 2013). These injustices can be identified in the use and discussed during the participatory budget, which is corroborated in this study, given the greater influence of informal justice on budgetary participation.

In the proposed model, the types of justice (formal and informal) influence the judgments which, in turn, mediate the relationship between the facets of justice and specific results of the justice (Ambrose & Schminke, 2009), in this case managerial performance. However, the

fairness judgments did not present a significant influence on managerial performance, which requires some considerations. Evidence from meta-analyses (Cohen-Charash & Spector, 2001; Colquitt et al., 2001) indicates conflicting results between perceptions of justice and performance. This suggests that the relationship between fairness judgments and managerial performance is not so direct. It is conjectured that fairness judgments cause, firstly, more specific attitudes, such as job satisfaction. The study conducted by Beuren et al. (2017) revealed that fairness judgments are associated with different levels of job satisfaction. Therefore, the relationship between fairness judgments and performance is not direct, but rather influenced by other factors, which calls for future research.

In this research, unlike in previous studies (Lau & Lim, 2002b; Libby, 1999), budgetary participation is predominantly influenced by informal justice, instead of the justice perceived in the design of the budgetary

process. It is argued that this is intensified when the following occur: explanations, proposals for changes, considerations of opinions, monitoring of budgetary goals, performance assessment, and feedback.

In the participatory budget, the information and ideas about management tasks, goals, and financial and non-financial measures can be exchanged (Zonatto et al., 2019). Chong et al. (2005) mention that the benefits of managers' involvement in the process of defining the budget derive, primarily, from the exchange and disclosure of information relevant to the work, so that it facilitates decision making. The emphasis on informal justice derives from the participatory budget facilitating the learning process. Cugueró-Escofet and Rosanas (2013) mention that one of the motives for analyzing informal justice, observing the use of the MCS, is learning, in which the interaction between two people can change their minds about the convenience of some earlier state of the matters.

## 5. CONCLUSIONS

The study analyzed the reflections of the fair design and use of the budgetary process from the perspectives of perceptions of formal and informal justice, in fairness judgments, in budgetary participation, and in managerial performance. And, complementarily, it analyzed the mediating effect of fairness judgments and budgetary participation on the relationship between fair design and use of the budgetary process and managerial performance. The results revealed that managerial performance is greater when organizations worry about questions of justice in the design and, especially, in the use of an MCS, where budgetary participation is one of the mechanisms adopted by organizations to comply with the rules of a fair design and use of the budgetary process.

Budgetary participation presents partial mediation between formal justice and performance and indirect mediation with informal justice. This suggests that consistent procedures, with no biases and with precise information, conceived in the design of the budgetary process, materialize and/or intensify with the representativeness of those involved in the decision-making process. Information, ideas, explanations, and feedback are simultaneously exchanged during the participatory budget. The evidence suggests that formal procedures considered as just, from their conception, aligned with the respective implementation up until use, and combined with budgetary participation, present reflections in managerial performance.

The study contributes to the literature by analyzing organizational justice from the perspective of formal and informal justice and fairness judgments in the context of the budgetary process, where until now this proposition was in the theoretical field; the research possibilities are thus broadened. The empirical studies of organizational justice have mainly focused on individual perceptions of justice and effects on individuals' attitudes and behaviors (Cugueró-Escofet & Fortin, 2013; Goldman & Cropanzano, 2015). However, the results indicated that the justice rules of the design and use of the budgetary process are characterized as antecedents of fairness judgments and are reflected in budgetary participation and in managerial performance. These findings are relevant because they highlight the impacts of justice in terms of the effects that a system generates, and do not merely consider individual perceptions. The research revealed that the fair design and use of the budgetary process influence managerial performance; however, the individual perception of justice (fairness judgments) did not exert a direct influence. These results signal that the justice in the organizational procedures and mechanisms are more salient than merely analyzing the individual's perception (Ambrose & Schminke, 2009).

The results of the research also have implications for the practice of organizations. The study presents evidence that managerial performance can be improved based on the conception of justice in the design and use of

the budgetary process, intensifying with the budgetary participation mechanism. In this sense, organizations need to focus on the formal and informal aspects of MCSs to ensure justice in the budgetary procedures. For Goldman and Cropanzano (2015), perceptions of justice require actions from managers, as individuals tend to react against rules and procedures perceived as unfair. Therefore, the questions of justice should be considered both in the design and in the use of the MCSs (Cugueró-Escofet & Rosanas, 2013), seeking the managers' emphasis on accomplishing the organizational objectives and the effects on carrying out their activities.

The study also contributes to the discussion about the relationship between budgetary participation, perceptions of justice, and performance. Budgetary participation is sometimes treated as an antecedent of feelings of justice and, at other times, as a consequence. In this study, it was found that budgetary participation is one of the mechanisms chosen by organizations to ensure justice in the design and use of the budgetary process. Thus, budgetary participation is a consequence of the formal and informal justice of MCSs and presents indications that the subjective assessments of managers regarding the budgetary process can feature as consequences, which contributes to explaining the different approaches of previous studies regarding the role of justice and budgetary participation in influencing managerial performance.

The limitations of this study call for new research. As the research strategy used was based on the respondents' perception regarding the questions formulated, subjective aspects may be present at the time of the answer, guiding it toward a desired situation. In this aspect, it is highlighted that the measurement of managerial performance was based on the managers' self-assessment. It is possible that the degree of difficulty or ease of achieving the goal

influences the managers' performance, as well as the way the budget is used (with an emphasis on planning and/or assessment), which calls for more studies. In this one, the focus was primarily on rewards statements, so future studies could emphasize other aspects of the budgetary process. The theoretical model itself characterizes a limitation, given that variables needed to be omitted to outline the scope of the study and make it viable. Future studies could also add control variables, such as hierarchical level, manager area, and time at the company, to verify if they affect budgetary participation, fairness judgments, and managerial performance.

Studies separating formal and informal justice and fairness judgments are still in their infancy in the literature. This instigates using other ways of capturing these constructs. The segregation of the theoretical model into justice rules (formal and informal) and fairness judgments may serve as encouragement for new lines of investigation. For example, it could be investigated which aspects of justice (formal, informal, fairness judgments) are most effective for inhibiting counterproductive behaviors in organizations or, in inter-organizational relationships, it could be investigated how the presence of (in)justice in the design and use of the MCS contributes to the organizational identity, trust in the relationship, and the performance of cooperation, and how the justice of the system perceived by those implicated influences their attitudes (e.g., willingness to share knowledge). It is important to highlight that the separation of justice into the formal and informal perspectives represents a new conception of the phenomenon, and this could foster a differentiated line of investigation and contribute to understanding the attitudes and behaviors of individuals in organizations, going beyond the literature on perceptions of organizational justice.

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## APPENDIX A – RESEARCH INSTRUMENT

### Fair design and use of the budgetary process

Scale from 1 (totally disagree) to 7 (totally agree)

#### Formal justice.

Source: Wentzel (2002).

1. The current budgetary procedures contain provisions that allow me to request budget adjustments for my area of responsibility.
2. The budgetary procedures are applied consistently in all areas of responsibility and over time.
3. My area of responsibility receives the budget it deserves.
4. The current budgetary procedures adequately represent the concerns of all areas of responsibility.
5. Budget decisions for my area of responsibility are based on precise information and well-informed opinions.

#### Informal justice.

Source: \* Wentzel (2002); \*\* Adapted from Sotomayor (2006).

1. Your hierarchical superior provided you with feedback about the decisions that they would take regarding the budget for your area of responsibility and the implications of these decisions\*\*.
2. During the budgetary process, your hierarchical superior clearly explained what was expected of you\*\*.



3. During the budgetary process, your hierarchical superior discussed with you plans or objectives to improve the planning, execution, and control of the budget\*\*.
4. My supervisor expresses concern and sensitivity when discussing budgetary restrictions allocated to my area of responsibility\*.
5. During the budgetary process, your hierarchical superior provided you with feedback that enabled you to learn how to better execute your work\*\*.

#### **Fairness judgments.**

Scale from 1 (totally disagree) to 7 (totally agree)

**Source:** \* *Adapted from Colquitt (2001)*; \*\* *Wentzel (2002)*.

1. I consider the budget for my area of responsibility to be fair\*\*.
2. The rewards I receive are fair, considering the stress and pressures of my area of responsibility to comply with the budget\*.
3. I feel fairly compensated with the budget I receive in relation to the other organizational areas\*.
4. The rewards I receive are fair, considering my experience and established goals\*.
5. The budget attributed to my area of responsibility adequately reflects my needs\*\*.

#### **Budgetary participation.**

Scale from 1 (totally disagree) to 7 (totally agree)

**Source:** \* *Milani (1975)*; \*\* *Leach-López et al. (2007)*; *Milani (1975)*.

1. I'm involved in defining all the parts of my budget\*.
2. I have strong influence on the final amount of the budget for my area of responsibility\*.
3. My contributions are important for elaborating the budget for my area of responsibility\*.
4. When the budget is being defined, my supervisor very often seeks to attend to my requests, opinions, and/or suggestions\*.
5. I always participate in the meetings to set the budgetary objectives of my area of responsibility\*\*.
6. I elaborate the budget for my area of responsibility, but my superior reviews it\*\*.

#### **Managerial performance.**

Scale from 1 (very low) to 7 (very high)

**Source:** *Lau & Lim (2002b)*; \* *Elaborated by the authors*.

1. My performance in relation to the planning activities for my area of responsibility.
2. My performance in relation to the activities of coordinating the activities of my area of responsibility.
3. My performance in relation to the activities of evaluating the activities of the subordinates.
4. My performance in relation to the activities of investigating the problems of my area.
5. My performance in relation to the activities of supervising the team.
6. My performance in relation to the activities of obtaining and maintaining the adequate personnel.
7. My performance in relation to the activities of negotiation.
8. My performance in relation to the activities of representing the interests of my area of responsibility.
9. My performance in relation to the activities of achieving the established budgetary goals.
10. My general performance\*.