

Perceptions of organizational justice in incentive contracts and their effect on congruence between personal and organizational goals

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Recebimento:

10/30/2018

Aprovação:

11/06/2019

Editor responsável:

Prof. Dr. Teresa Proença

Avaliado pelo sistema:

Double Blind Review

Abstract

Purpose – This research aims to verify if perceptions of organizational justice in incentive contracts have a positive effect on the congruence between personal and organizational objectives in companies with decentralized structures.

Design/methodology/approach – The research is quantitative. We used a questionnaire as the form of data collection. The instrument consists of 39 statements to test the theoretical hypotheses through structural equation modeling. The accessibility sample consisted of 140 managers of Brazilian companies.

Findings – The results indicate that: (a) multiple performance measures increase the perception of distributive and procedural justice; (b) quality feedback leads to the understanding that incentive contracts are fair; (c) disregarding uncontrollable aspects by managers in performance evaluations does not lead to the perception of procedural and distributive justice; (d) perceptions of organizational justice have a positive effect on the congruence between personal and organizational goals.

Originality/value – In addition to contributing to the advancement of knowledge in the managerial area, the findings of this research may support policies for the formulation of incentive contracts in Brazilian companies with decentralized structures, and this aspect represents a business and practical contribution for company managers and owners.

Keywords – Organizational Justice; Incentive Contracts; Congruence; Personal and Organizational Objectives.



**Revista Brasileira de Gestão
de Negócios**

DOI:10.7819/rbgn.v22i3.4066

I Introduction

The study aims to verify if perceptions of organizational justice in incentive contracts have a positive effect on the congruence between personal and organizational goals in organizations with a decentralized structure. The investigation envisages that higher levels of perceptions of organizational justice in incentive contracts might be associated with a greater alignment between personal and organizational goals, thus motivating managers to act more consistently as regards to the company's interests.

Brealey, Myers, and Allen (2014) argue that trustees should behave according to owners' interests in order to maximize their own wealth. However, managers also have personal goals, which may not match those of their organizations (Anthony & Govindarajan, 2008). At the core of agency theory is the idea of conflict of interest. Jensen and Meckling (1976) and Easterbrook (1984), among others, describe the agency relationship as both explicit and implicit contracts in which the principal concedes decision-making power to the agent to perform services. In these contracts, it is assumed that the principal will give control of the company to agents with more expertise in the business. In exchange for this, the agents will be rewarded with both financial and non-financial goods.

Usually, contracts established between parties take place in an environment impregnated with informational asymmetry, in which agents have some informational advantage over the principal. So, agents can act according to their own interests, overlooking the principal's wellbeing, as they may feel wronged in a contract relationship, even formal ones.

A typical conflict situation between agent and principal takes place when trustees take conflicting decisions as regards to investments, financing, and the distribution of dividends, since these might affect their share of the company's earnings, when a great extent of their income is based on incentives. Studies suggest a manager

will create additional costs or benefits for the company if their perception of justice regarding their interactions is lower than or above their expectation, respectively (Bosse & Phillips, 2016).

One of the mechanisms to reduce agency costs resulting from agency conflicts is the establishment of a system of incentives focused on improving their individual perception of justice, thus influencing the agents' behavior. Incentive contracts are agency agreements dedicated to aligning interests linked to managers' compensation by means of financial and non-financial performance measurements set by owners (Maher, Stickney, & Weil, 2012; Milgrom & Roberts, 1992).

Anthony and Govindarajan (2008) claim that the more the agent's income depends on performance evaluation parameters, the more they will feel stimulated to improve their performance. Parameters set by owners when designing the system for performance evaluations may affect agents' behavior in several ways, triggering both commitment to the company's scopes (congruence) and perceptions of a lack of organizational justice if they judge there to be inconsistencies in the delineation of the metrics of incentive contracts. Even though one of the main goals of such incentive contracts is to persuade workers to perform in favor of the best interests of the organization (Maher et al., 2012; Milgrom & Roberts, 1992) and contracts can be either individual or collective, monetary or non-monetary, they will not remain unscathed from perceptions of a lack of justice by trustees (agents).

The alignment promoted by performance evaluations is one of the main aspects considered in the formulation of incentive contracts because they cause a direct impact on the intensity of efforts made in task performance in the company (Santos, 2012) and on the organizational climate. The management area literature considers congruence to be the compatibility between the trustees' and the company's interests. Such congruence has an impact on several aspects, including perceptions of justice, worker stability,

efficacy in the organizational environment, and feelings of belonging to the company (Brito & Magalhães, 2018). A lack of congruence between the trustees' and the company's interests can be considered a classic agency problem, which substantially affects the design, symbolism, and acceptance of management control systems, triggering a series of questions that are worth both theoretical and empirical discussion, regarding moral risk, adverse selection, and behavioral aspects related to organizational justice, which will be discussed below.

Cases of establishing contracts among the agents themselves are typical of decentralized companies or those whose responsibility centers are clearly delimited. According to Anthony and Govindarajan (2008, p.180), the concept of responsibility centers applies to any organizational unit driven by a responsible manager. Thus, companies can be composed by several decentralized responsibility centers, each representing a link in the organizational structure. Units acquire inputs and produce outputs, these being either goods or services. Evidently, management units differ in terms of the ease with which outputs can be measured and the controlling rules applied regarding how the inputs are obtained, which can have a clear relationship with measurements of trustees' performance and, consequently, their perceptions of organizational justice.

Maher et al. (2012) state that almost all big, decentralized corporations offer bonuses and financial incentives linked to profit to their responsibility center trustees. However, monetary incentives do not always lead to congruence between organizational and personal goals. In this sense, many studies have suggested that non-economic factors influence agents' decisions. Milgrom and Roberts (1992) state that a given level of revenue can be seen as good or bad, acceptable or unacceptable, according to the financial compensation of people other than those in the reference group, which can result in different behaviors, this being a significant

limitation to the use of any incentive. The authors take a very clear position as to incentive contracts when they state that considering only economic aspects when conceiving incentive schemes may not be enough.

Anthony and Govindarajan (2008, p. 556) argue that trustees must be aware of the fact that "goals, scopes, and rules may offer strong incentives only if trustees see them as *fair*." Kaplan and Atkinson (1998, p.682) are even more incisive and argue that there are important behavioral considerations that performance measurement systems must take into account. They emphasize that "first and above all the individual must believe the system is *fair*. When this belief is absent the motivational potential of incentives compensation will be lost." Therefore, they argue that behavioral aspects must be taken into account in incentive contracts, especially to identify the perceptions of justice in both explicit and implicit incentive contracts.

Omar (2006) warns that if workers see that their company treats them fairly, this will contribute to an increase in positive attitudes as regards to their work, supervisors, and the organization as a whole. On the other hand, if they feel they receive unfair treatment, it will result in tensions, feelings of dissatisfaction, a lack of motivation, absenteeism, reduced quality of work, and lower productivity (Omar, 2006).

Lubatkin, Ling, and Schulze (2007) state that perceptions of injustice trigger behaviors that can be discussed under the lens of agency theory. From the point of view of agency theory, individuals are naturally opportunistic and will always try to maximize their own interests up to the point that their actions are limited by organizational restrictions (incentive contracts). On the other hand, constructs of organizational justice consider that individuals will only behave opportunistically if they perceive unfair treatment. Consequently, perceptions of justice will increase agency costs (Lubatkin, Ling, & Schulze, 2007).

Organizational justice has come under the focus of theoretical and empirical studies that try

to show whether higher levels of perceptions of justice are associated with positive attitudes and behavior at work, but there are still few empirical studies on their effect in the context of agency conflicts (Cohen, Holder-Webb, Sharp, & Pant (2007). In Brazil, the use of agency theory in the management area is still modest and previous research has not linked organizational justice in incentive contracts to congruence between personal and organizational goals according to the perceptions of trustees in decentralized companies. This is one of the advances made by the present research in the area of Accounting Science in Brazil.

It is believed that incentive systems must take the conception of perceptions of justice into account when trying to align trustees' behavior. Studies suggest that trustees will create additional costs or benefits for the company if their perception of justice in their interactions is either lower or higher than their expectation, respectively (Bosse & Phillips, 2016). So, the potential findings in this research, besides contributing to the advancement of knowledge in the management area, will support policies for formulating incentive contracts in structurally decentralized Brazilian companies. A better understanding of the phenomenon can improve the strategies adopted by corporations when issuing and using incentive contracts that lead to better feelings of justice in organizational relations. So, the potential findings in this research, besides contributing to the advancement of knowledge in the management area, will support policies for formulating incentive contracts in structurally decentralized Brazilian companies, and this also represents a corporate and practical contribution for trustees and company owners.

2 Theoretical framework

2.1 Incentive contracts and organizational justice

Agency theory is based on the assumption that private interests will motivate the principal's

and the agent's behavior, in a bilateral relationship presenting information asymmetry and opportunism. The core question in the agency relationship is being able to structure a contract model with incentives leading the agent to choose the best actions and decisions possible from the principal's point of view, while seeking to achieve their own goals (Salas Fumás, 1996). That means models leading to congruence between organizational and individual goals, with the respective decrease in conflicts of interest. The difficulty in finding a coherent link between agents' income and the congruence between organizational and individual goals has prompted research that tries to complement agency theory. One of the strands receiving continuous attention is organizational justice (Bosse & Phillips, 2016; Cohen, Holder-Webb, Sharp, & Pant, 2007; Lubatkin et al., 2007).

The term organizational justice refers to the perception of justice in corporations. The literature discusses organizational justice in three dimensions: (1) distributive justice, which considers equity of income for performance, through promotions, salary increases, New Year rewards, and participation in training schemes, among others; (2) procedural justice, which considers the equity of procedures used in the organization, such as personnel selection, systems for performance evaluation, and procedures adopted by the organization for salary increases and promotions; (3) interactional justice, which focuses on the interpersonal aspect of organizational practices, more specifically interpersonal treatment and communication between bosses and their subordinates (Cohen-Charash & Spector, 2001; Colquitt, 2001). Undoubtedly, incentive contracts have a big impact on perceptions of justice (or injustice) (Bosse & Phillips, 2016; Lubatkin et al., 2007). First, incentive contracts directly affect perceptions of distributive justice since they affect the relationship between the efforts applied and the results obtained by agents. Perceptions of procedural justice are also influenced by

incentive contracts because the procedures used in performance evaluations, the metrics used, and the rewards linked to activities increase or reduce perceptions of procedural justice. Assuming that companies are made up of people, the way agents are treated regarding the conception of incentives, performance evaluations, and rewards for effort directly affect perceptions of interactional justice. Thus, the relationship between incentive contracts and organizational justice is evident, mainly with regards to three aspects discussed in this research: (1) performance evaluation metrics; (2) the controllability principle; and (3) feedback quality.

2.1.1 Multiple performance measurements and organizational justice

Agency theory states that contracts must be established based on multiple performance measurements that can be checked by the principal since agents' actions and abilities cannot be directly observed. Usually the performance measurements used are mainly based on objective measurements, especially financial ones (Chenhall & Langfield-Smith, 2007). However, subjectivity, which is present in non-financial performance measurements, is an important element to be considered in incentive contracts.

A performance evaluation that allows the use of subjective performance measurements can improve perceptions of justice due to several reasons. Firstly, supervisors can use the discretionary power in subjective measurements to reward workers for their efforts in given work dimensions that are hard to capture in an objective way, such as leadership quality, personal integrity, professional attitude, support to workmates, or teamwork (Bol & Smith, 2011). In addition, performance evaluations that use a broad set of performance measurements more precisely reflect different levels of effort made by workers, thus increasing perceptions of distributive justice (Greenberg, 1987). Similarly, a broad set of performance measurements increases perceptions of procedural justice since this leads to a more

precise and less biased performance evaluation procedure (Greenberg, 1987).

Multiple subjective performance measurements can also be used to discourage workers from manipulating objective performance measurements (Gibbs, Merchant, Stede, & Vargus, 2004) the findings suggest that subjective bonuses are used to complement perceived weaknesses in quantitative performance measures and to provide employees insurance against downside risk in their pay. Specifically, use of subjective bonuses is positively related to: (1. Due to the fact that financial measurements are set in numerical terms, they are likely to be manipulated and stimulate dysfunctional behavior (Bol & Smith, 2011). Subordinates who are evaluated exclusively by means of profit can adopt an excessive approach in the short term and reduce quality controls, increasing profits in the short term but compromising the economic viability of the organization in the long term. Moreover, subordinates who observe their peers receiving more rewards due to dubious practices may question the results of the evaluation process, thus lowering their perceptions of distributive and procedural justice.

Subjectivity in performance evaluations can also reveal subtler effects. The literature argues for favorable arbitrary allocations that promote benevolent intentions in regard to supervisors or the organization (Blount, 1995). Also, the use of subjective performance measurements promote the exchange of information and the discussion of results, potentiating the possibility of correcting wrong decisions (Lau & Moser, 2008). The exchange of information and discussion of the evaluation process allow subordinates to better understand supervisors' logic in performance evaluations, thus increasing perceptions of procedural justice. As long as constructive discussions allow subordinates to influence supervisors' decisions so the results will better reflect subordinates' efforts, they will increase perceptions of distributive justice. So, the research hypotheses are the following:

H_{1a}: *The use of multiple performance measurements is positively associated with perceptions of distributive justice in incentive contracts.*

H_{1b}: *The use of multiple performance measurements is positively associated with perceptions of procedural justice in incentive contracts.*

2.1.2 Controllability principle and organizational justice

The controllability principle states that trustees must only be evaluated based on what they can control (Choudhury, 1986). If uncontrollable factors such as unexpected changes in the environment or decisions taken by others in the organization affect trustees' results, the application of the controllability principle would neutralize the impact of such factors on the performance evaluations of the trustees involved.

From the organizational perspective, the application of the controllability principle offers a reliable evaluation of management performance. Since the profit of a division results from both the manager's efforts and uncontrollable factors, it is therefore impossible to consider profit as a way to measure effort unless the impact of uncontrollable factors is neutralized (Choudhury, 1986). In addition, the controllability principle influences trustees' behavior because it is intrinsically linked to the concept of equity (Choudhury, 1986).

Justice is considered as a fundamental condition for the efficacy of performance evaluations (Murphy & Cleveland, 1991). When the evaluation system is seen as unfair, trustees are expected to get involved in protectionist behaviors, such as data manipulation (Eccles, 1991), organizational respite (Merchant, 1989), or directing their efforts to convince their supervisors that the low performance is due to uncontrollable factors (Merchant, 1989). So, there is a link between the controllability principle and organizational justice. Neutralizing the impact of uncontrollable factors reduces

the risk of the performance achieved not being consistent with the effort applied, so the controllability principle would be positively linked to distributive justice (Giraud, Langevin, & Mendoza, 2008). The controllability principle also influences the perceptions of procedural justice. Evidence suggests that perceptions of justice in performance evaluations are also based on the procedures adopted, despite the evaluations received (Greenberg & Folger, 1983). Resentment can be maximized when trustees believe they could have been better evaluated, if their bosses had made use of other procedures (Cropanzano & Folger, 1989). So, the following research hypotheses are put forward:

H_{2a}: *The use of the controllability principle is positively associated with perceptions of distributive justice in incentive contracts.*

H_{2b}: *The use of the controllability principle is positively associated with perceptions of procedural justice in incentive contracts.*

2.1.3 Feedback quality and organizational justice

Performance feedback is the communication of relevant information about the tasks carried out, used to inform its recipients about their performance at work and/or help them in their future performance (Geddes, 1993). When individuals receive their performance feedback, they judge the justice of 1) the feedback, 2) how the feedback was set, and 3) how it was communicated. Thus, good performance feedback is significantly linked to perceptions of procedural justice (Cohen-Charash & Spector, 2001; Roberson & Stewart, 2006).

Roberson and Stewart (2006) showed that precise feedback is not only considered as fair but also promotes interactional justice. Providing feedback promotes communication between managers and their bosses (Colquitt & Jackson, 2006; Erdogan, 2002) interactional, and distributive justice perceptions are examined

in terms of their theoretical and measurement properties. Antecedents of justice perceptions include due process characteristics, organizational culture, pre-appraisal leader–member exchange (LMX). Moreover, bosses who discuss results during and at the end of the year with their workers are seen as more respectful. Quality feedback can indicate that the recipients are valued and respected members of the group.

Such perceptions of justice lead to the acceptance of goals (Colquitt, 2001), which induces motivation and, finally, performance. The literature points out that when the feedback elements lead to perceptions of justice, goals are accepted, workers are motivated, and performance is improved. However, when the feedback elements are perceived as unfair, the acceptance of goals, motivation to work, and performance are inhibited, as well as antisocial behaviors being stimulated. Chory and Hubbell (2008) found that when performance feedback was given in an unfair, insensitive way, the members of the organization were more prone to getting involved in indirect aggression toward their bosses, to cheating, and to jeopardizing organizational processes (Chory & Hubbell, 2008). So, the research hypotheses are the following:

H_{3a}: Quality of feedback is positively associated with perceptions of procedural justice in incentive contracts.

H_{3b}: Quality of feedback is positively associated with perceptions of interactional justice in incentive contracts.

2.1.4 Congruence between personal and organizational goals

According to Creed and Supeli (2014), congruence between personal and organizational goals directly affects trustees' attitudes and behaviors with regards to the organization and has positive links to satisfaction (Supeli & Creed, 2014), work, organizational commitment, and reductions in intentions to leave the organization.

The alignment between goals is also positively related to work and task performance (Cable & Derue, 2002), besides being positively associated with organizational citizenship behaviors (Chen, Lam, Naumann, & Schaubroeck, 2005) 1998. Consequently, congruence between goals promotes satisfaction and commitment, improves performance, and reduces trustees' intentions to leave the organization.

However, in a scenario where ownership and control are separate, organizations can only partially align these goals and so they make use of financial incentives to stimulate individuals to contribute to the global aims of the organization. Anthony and Govindarajan (2008) and Kaplan and Atkinson (2008) highlight the need for perceived justice in incentive contracts because if it does not exist, the motivation potential of the incentives will be innocuous. According to Cugueró-Escofet, Fitó, and Rosanas (2016), perceptions of organizational justice have a positive effect on the congruence between personal and organizational goals. They state that organizational justice encourages people to pursue their organizational goals since it changes attitudes with regards to the organization and, thus, it has the potential to change the interests for future decisions (Cugueró-Escofet, Fito, & Rosanas, 2016).

Trustees are believed to be influenced by incentive contracts and these may affect their perceptions of justice and, consequently, the congruence between personal and organizational goals. Performance evaluations affect trustees' rewards while being intrinsically linked to incentive contracts involving issues of distributive justice. Moreover, incentive contracts are linked to aspects of procedural justice because the definition of goals, performance evaluations, and the establishment of rewards depend on organizational procedures. Incentive contracts can also affect interactional justice, particularly with regards to the interactions between subordinates and their bosses in performance evaluation,

reward establishment, and feedback situations. So, the following hypothesis is put forward:

H₄: *Perceptions of organizational justice in incentive contracts positively affect*

the congruence between personal and organizational goals.

Based on the hypotheses put forward, Figure 1 illustrates the theoretical model proposed in this research:

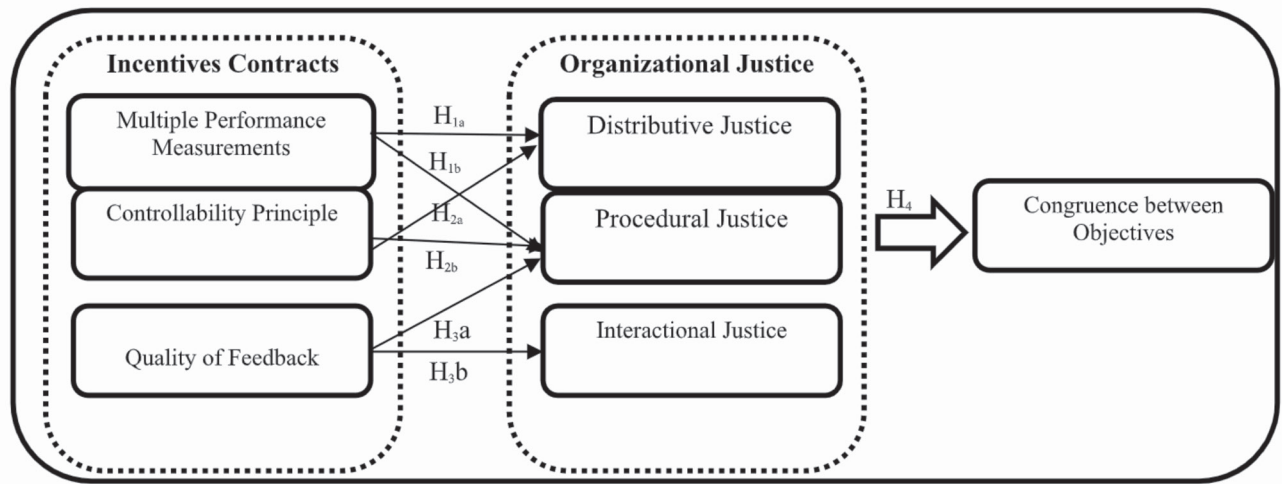


Figure 1. Theoretical model proposed and research

Source: drawn by the author

3 Methodology

Considering the aim of this research is to evaluate if trustees' perceptions of organizational justice in incentive contracts are associated with congruence between personal and organizational goals in structurally decentralized companies, the survey instrument, sampling and data collection, and treatments and data analysis will take the following form.

3.1 Survey instrument

The survey instrument was issued considering the formulation of statements for each hypothesis, in which the trustees indicated their level of agreement on a seven-point scale. They were set based on instruments used in previous studies, as shown in Figure 2.

Variables	Questions used from previous studies
organizational Justice	From Rego's (2002) questionnaire, with 16 statements for organizational justice, only the ones regarding distributive justice were not used.
Controllability Principle	From Giraud, Langevin, and Mendoza (2008), in which six statements related to the controllability principle were used.
Multiple Performance Measurements	The first statement was related to multiple performance measurements, based on Widener's (2006) study. The other three were issued based on Langevin and Mendoza's (2013) study.
Quality of Feedback	From Hartmann and Slapnicar's (2009) questionnaire on quality of feedback, four statements from question 3 were used.
Congruence between goals	For congruence between goals, three statements from Creed and Supeli's (2013) questionnaire were used and three from Cugueró-Escofet, Fitó, and Rosanas's (2016).

Figure 2. Composition of the survey instrument

Source: elaborated by the author

In addition to these 34 statements, three control questions were included to check if the respondents were holding or had previously held management positions, if they were familiar to the practices of incentive contracts, and if they acted in decentralized, hierarchically-structured organizations, with the delegation of power and establishment of responsibilities. It is assumed that the respondents who hold management positions in a corporative environment with such features meet all the viability requirements of the study, since they allow the establishment of incentive contracts among agents to be checked, such as performance measurements linked to such incentives, and consequently what the perception is of organizational justice among those trustees.

The validation of the survey instrument was performed by market experts because the instruments used in Brazil so far come from research applied to other cultures and countries. Therefore, firstly the statements from the original instruments shown in Figure 2 were translated and versed. After that, the instrument underwent a theoretical and grammar review to address any difficulties in understanding the statements and following that it had its content validated

by experts with specific knowledge about the constructs evaluated by the instrument.

For that, six trustees from big Brazilian companies were chosen from different areas and expertise. The six experts have 5 to 10 years of experience in management positions in big companies (family, mixed economy, and private) and an education and specialization in areas linked to Applied Social Sciences. It was also certified that the trustees were familiar with the practices of incentive contracts and hold positions in decentralized, hierarchically-structured organizations in order to assure more accuracy and adaptation of the instrument to the business reality of Brazilian companies. The experts analyzed if the terms or expressions could be generalized to the Brazilian context and if the expressions were suitable for the public to which the instrument is addressed. Another important aspect was the suggestions of including three statements that are particular to the Brazilian context, as according to Figure 3. The survey instrument was validated by means of individual interviews, one hour long on average, which took place from August 20th to September 10th, 2017.

Construct	Statement inserted
Multiple Performance Measurements	I believe my performance evaluation is not always based on information derived from the Management Control System, although it is defended by the company.
Quality of Feedback	I think my manager's leadership profile (close or distant leadership) interferes with the quality of the feedback.
	The options for growth and development in the company are clearly discussed and presented by my manager.

Figure 3. Statements inserted after validation with experts

Source: elaborated by the author

So, the questionnaire sent to sample had 39 questions about the research constructs, as according to Figure 4.

Organizational justice
1. The pay and benefits I get are fair if taking my professional experience into account.
2. The pay and benefits I get are fair if taking my responsibilities in the company into account.
3. The pay and benefits I get are fair if taking the stress and pressures of my activities into account.
4. The pay and benefits I get are fair if taking how seriously I do my job into account.
5. The pay and benefits I get are fair if taking my effort to do my activities into account.
6. I believe the criteria previously established and used for promotions in my company are fair.
7. I believe the procedures (administrative, performance evaluation, operational, presentation of scopes) in my institution help decisions to be taken with no personal favors.
8. I believe the trustees in my company take decisions in a consistent way.
9. I believe the bosses in my company collect precise information before taking professional decisions that affect me.
10. The organization has mechanisms that allow employees to appeal their decisions if they seem to be unfair.
11. My bosses show genuine interest in my professional activities.
12. My bosses treat me honestly and ethically.
13. My bosses are frank and assertive to me in matters that concern me.
14. My bosses listen to my points of view before they decide about matters that concern me.
15. When my bosses make decisions about my work I receive explanations that make sense.
16. When my bosses make decisions about my work they discuss the implications of those decisions with me.
Controllability principle
17. My performance evaluation includes aspects that go beyond my sphere of influence.
18. My performance evaluation includes aspects I cannot control.
19. I believe my performance evaluation is affected by decisions taken by trustees from other departments than mine.
20. I believe my performance evaluation was influenced by decisions taken by higher hierarchical levels.
21. I believe my performance evaluation is affected by macroeconomic factors.
22. I believe my performance evaluation is affected by political factors that are external to the company.
Multiple performance measurements
23. My performance evaluation is based only on financial measures.
24. My performance evaluation is based in both financial and non-financial measures, but there is a minimum limit of financial measures to be reached before considering the non-financial ones.
25. My performance is based on objective information derived from the Management Control System.
26. I believe my performance evaluation is not always anchored in information derived from the Management Control System even though that is defended by the company.
27. My performance evaluation is based on subjective but always well-reasoned information.

Quality of feedback
28. I receive feedback from my bosses about my performance in my occupation at the company.
29. I receive useful, precise feedback from my bosses that reflects my performance.
30. I think my trustee's leadership profile (close or distant leadership) interferes with feedback quality.
31. I receive feedback that can potentially improve my performance in the future.
32. I value the feedback I receive from my boss considerably.
33. The options for growth and development in the company are clearly discussed and presented by my manager.
Congruence between personal and organizational goals
34. Achieving my company's goals also means achieving my personal ones.
35. My personal goals are consistent and match the company's.
36. My organizational goals will allow me to achieve my personal ones in the short and long terms.
37. When I achieve the goals set by my company I feel as if I have achieved my personal ones.
38. I am temporarily willing to waive some personal advantages so the company can get more profit.
39. My personal goals include positive results for both my career and my company.

Figure 4. Adapted survey instrument

Source: elaborated by the author

A seven-point, Likert-type scale expressing the respondent's level of agreement with each item composing the instrument was used for data quantification, and it was subjected to confirmatory factor analysis and structural equation modeling.

3.2 Sampling and Data Collection

The survey sample is composed of trustees familiar with the practices of incentive contracts, who hold or have held management positions in decentralized, hierarchically-structured companies, with clearly established delegation of power and responsibilities. The choice of this sample is due to the fact that respondents who hold management positions in a corporative environment with such features fulfill all the requirements to operationalize the present study.

The sample was estimated using the G*Power 3.1. 9 software (Faul, Erdfelder, Buchner, & Lang, 2009). The methodology of Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014) was observed, using a test power of 0.95 and median effect size (f^2) of 0.15. Considering the number of predictors is 3 (Figure 1) and for PLS this is what decides the minimum sample to be used, the software set the minimum sample

at 119 cases. From 225 answers received, those from trustees fulfilling the previously delimited features were considered valid, so the final sample was composed of 137 managers and suited to estimation of the hypotheses put forward.

The data collection was performed by means of an electronic questionnaire using *Google Docs*. An e-mail containing an invitation to take part in the study was sent, allowing the respondents to access the survey questionnaire. The invitation e-mail was firstly sent to students of the specialization course in Accounting of the Federal University of Paraná because these students may have the professional experience needed to answer the survey instrument. At the same time, the invitation letter containing a link to the questionnaire was sent by private message to LinkedIn users who held management positions. It was also posted on the official Facebook page of the Regional Council of Accounting in Paraná, as well as on their website. The data collection took place from September 13th to October 20th of 2017.

3.3 Treatment and Data Analysis

For the data analysis and estimation of the survey method model, structural equation

modeling (SEM) was used. The model was estimated using the partial least squares path modeling (PLS-PM) method, using the Smartpls v. 3.2.6 software. PLS-SEM is a method designed for studies that seek to make predictions using structural equations, which can estimate complex models using few observations and without imposing assumptions about the statistical distribution of the dataset (F. Hair Jr et al., 2014).

The evaluation of estimations obtained from the PLS-SEM method involves multiple stages, the two most relevant steps being: (a) an evaluation of the measurement model and (b) an evaluation of the structural model. The measurement model is said to be external because it shows relationships between latent constructs and the variables measured. The main purpose of the measurement model is to check if the operational items used for measuring constructs are significant and really measure what was expected of them (Brei & Liberali Neto, 2006; F. Hair Jr et al., 2014) a partir de um estudo comparativo entre os trabalhos publicados na sub-área de marketing do ENANPAD e nas seções de marketing de três dos principais periódicos de administração do Brasil: RAE, RAUSP e RAC, de 1994 a 2003. Os resultados obtidos foram comparados às estatísticas que resumem a utilização de SEM em artigos publicados nos principais journals internacionais de marketing, tabulados e apresentados por Baumgartner e Homburg (1996. After evaluating the measurement model, the structural model is estimated by means of path coefficients by performing linear regressions

among the constructs (structural models) (Brei & Liberali Neto, 2006; F. Hair Jr et al., 2014) a partir de um estudo comparativo entre os trabalhos publicados na sub-área de marketing do ENANPAD e nas seções de marketing de três dos principais periódicos de administração do Brasil: RAE, RAUSP e RAC, de 1994 a 2003. Os resultados obtidos foram comparados às estatísticas que resumem a utilização de SEM em artigos publicados nos principais journals internacionais de marketing, tabulados e apresentados por Baumgartner e Homburg (1996. The criteria proposed by F. Hair Jr et al. (2014) were observed for the evaluation of the formative relationships of the measurement and structural models, according to the analysis of the results.

4 Analysis of the results

4.1 Sample features

The sample profile is shown in Table 1. Of the 137 valid respondents, 74% are male and only 26% are female, showing that, so far, few women hold leadership positions in Brazilian companies. Most of the respondents are 31 to 40 years old (45%), and 42% of them are older than 41 years old. With regards to education, 136 have graduate degree, 33% of which graduated in Administration and 42% in Accounting. Also, 89% have a postgraduate degree, 80% of them in the business area, showing that there is great concern as regards to continuous education among the participants in the survey.

Table 1
Respondents profile

		%	n
Gender	Female	26%	35
	Male	74%	102
Age	Up to 30 years old	12%	16
	31 to 40 years old	45%	61
	Above 41 years old	42%	58
Graduation	Business	33%	45
	Accounting	42%	57
	Economics	4%	6
	Others	20%	28
Post Graduation	Controllership, Finance, and Auditing	50%	69
	Company Management	26%	35
	Personnel Management	4%	5
	Others	9%	12

Source: Survey data.

Table 2 shows the management profile of the respondents. With regards to this, the respondents stated that the average time they had held a management position or function in the company is shorter than 5 years (28%); 28% have 6 to 10 years of experience; and 28% have worked as a trustee from 10 to 15 years. The results also showed that 74% are responsible for up to 20 employees; 14% for up to 50 employees; and 12% for more than 51 employees. Another important piece of data was the finding that 91% report to a

trustee at a higher hierarchical level. With regards to financial incentives linked to the position, 100% answered that they perceive some kind of variable monthly or yearly pay for carrying out their function in the company. So, it is understood that the respondents form part of a complex agency model with multiple principals and/or multiple agents, that is, medium level managers can be the agents for higher level managers and principals in relation to their subordinates.

Table 2
Management Profile

		%	n
Time in the position of Trustee	Less than 5 years	28%	38
	5 to 9 years	28%	38
	10 to 15 years	28%	38
	Over 15 years	17%	23
Number of subordinates in the team	Up to 20 employees	74%	101
	21 to 50 employees	14%	19
	Over 51 employees	12%	17
Report to a hierarchically superior manager	Yes	91%	125
	No	9%	12
Financial Incentives	Yes	100%	137
	No	0%	0

Source: Survey data.

Cases of establishing contracts among agents themselves are typical in decentralized companies with several hierarchical levels or companies with highly delimited responsibility centers. Anthony and Govindarajan (2008) stated that responsibility centers are organizational units headed by a manager who is in charge of their activities, so companies can be composed of several decentralized responsibility centers. In this sense, 62 respondents point out that the company where they carry out their functions are said to be decentralized in structure; on the other hand, 102 respondents point out that the delegation of power and establishment of

responsibilities are clearly enunciated. So, there is concept incoherence regarding decentralized structures and responsibility centers among the respondents. Anthony and Govindarajan (2008) state that organizational units headed by a trustee in charge of delegating, following, and asking for results can be considered as decentralized responsibility centers.

Also with regards to institutional features, as according to Table 3, the predominant institutional feature in the sample is private companies (76%); 18% of the respondents said they carry out their activities in public companies, and 7% in mixed economy companies.

Table 3
Institutional Feature

		%	n
Organizational Structure	Centralization	55%	75
	Decentralization	45%	62
Delegation of power and responsibilities	Yes	74%	102
	No	26%	35
Institutional Feature	Private Company	76%	104
	Public Company	18%	24
	Mixed Economy Company	7%	9

Source: Survey data.

With regards to the respondents' profile, it can be inferred that, in general, the sample is composed mainly of men up to 40 years old who have performed the trustee function or position for a maximum 10 years in private companies. So, the data reveal that the respondents have enough expertise to answer the survey instrument.

4.2 Measurement model

Before evaluating the measurement model, it is important to mention that the survey data in this research were collected by means of self-answered questionnaires. Podsakoff, MacKenzie, Lee, and Podsakoff (2003) remind us that this method can lead to common method bias (CMB). Thus, following the advice of those authors, anonymity was assured to the respondents, as

well as the answers being handled in an aggregate way (Podsakoff et al., 2003). With regards to statistical bias, the Harman single factor test was used, as recommended by the authors, where bias is present if one single factor or a general factor explain more than 50% of the variance of the variables, which was not the case in this research (Harman, 1976).

The evaluation of the measurement model was started by means of the cross loadings matrix analysis. In this analysis, five statements presented cross loadings lower than 0.5, so the respective statements were taken out of the model. These were two statements proposed by the specialists who took part in the validation of survey instrument relating to the construct "multiple measurement performance," another two statements concerning

the construct “controllability principle” from Giraud, Langevin, and Mendoza’s (2008) study, and one statement regarding the construct “congruence between objectives” from Creed and Supeli’s (2013) research. After the exclusions, the factorial loads showed satisfactory values. Next,

the suitability indexes of the adjusted model were analyzed, for convergent validity (AVE – average variance extracted), composite reliability, and internal consistency (Cronbach’s alfa), as according to Table 4.

Table 4
Suitability indexes of SEM-PLS model

	Cronbach’s Alfa	Composite Reliability	Average Variance Extracted (AVE)
Congruence between Goals	0,915	0,936	0,745
Distributive Justice	0,954	0,964	0,844
Interactional Justice	0,939	0,952	0,766
Procedural Justice	0,890	0,920	0,700
Multiple Performance Measurements	0,674	0,795	0,496
Controllability Principle	0,670	0,782	0,477
Quality of Feedback	0,905	0,931	0,731

Source: Survey data.

In the evaluation of internal consistency, the Cronbach’s alfa of the constructs represents the average reliability, which ranges from 0 to 1, and where values that range from 0.60 to 0.70 are considered to be the lower limit for acceptance (Hair, Sant’Anna, & Gouvêa, 2009). The data presented in Table 4 show that all the constructs are over the minimum value specified in the literature, showing they are internally consistent. The composite reliability constructs must present values equal to or higher than 0.7 to be valid (Hair et al., 2009). According to Table 4, all constructs show values higher than those indicated in the literature.

According to Hair et al. (2009), the AVE value must be equal to or higher than 0.5 for latent variables. The data presented in Table 4 show that the constructs “multiple performance measurements” and “controllability principle”

are deficient, with values of 0.496 and 0.497, respectively. However, due to their importance in the literature and because the constructs show satisfactory results for internal consistency and composite reliability, it was chosen to maintain them in the survey. The other constructs presented acceptable values, showing they have convergent validity.

Next, the discriminant validity of the constructs was analyzed according to Hair et al. (2009), showing how much a construct really differs from the others. The analysis consists of checking if the square root of the AVE is higher than the correlations among the other variables. So that there is discriminant validity, the square roots of the AVEs must be higher than the correlations of the constructs (Fornell & Larcker, 1981). According to Table 5 (shaded), all constructs showed suitable results.

Table 5
Discriminant Validity

	Congruence	Distributive J.	Interactional J.	Procedural J.	M. P. Measurements	Controllability	Q. Feedback
Congruence	0,863						
Distributive J.	0,273	0,919					
Interactional J.	0,641	0,506	0,875				
Procedural J.	0,525	0,645	0,754	0,837			
M. P. Measurements	0,434	0,241	0,342	0,468	0,704		
Controllability	0,222	0,079	0,171	0,290	0,563	0,691	
Q. Feedback	0,442	0,409	0,721	0,657	0,202	0,095	0,855

Source: Survey data.

So, it can be stated that the indicators composing the constructs of the measurement model really evaluate dimensions of organizational justice, features of incentive contracts, and congruence between personal and organizational goals. So, the measurement model allows for the satisfactory estimation of casual relationships of the structural model.

4.3 Structural Model and Hypotheses Testing

The next step, according to Hair Jr et al. (2009), is to validate the structural model, which implies checking the R² values, that is, the percentage of variance of a latent variable that is explained by other latent variables, as according to Figure 5.

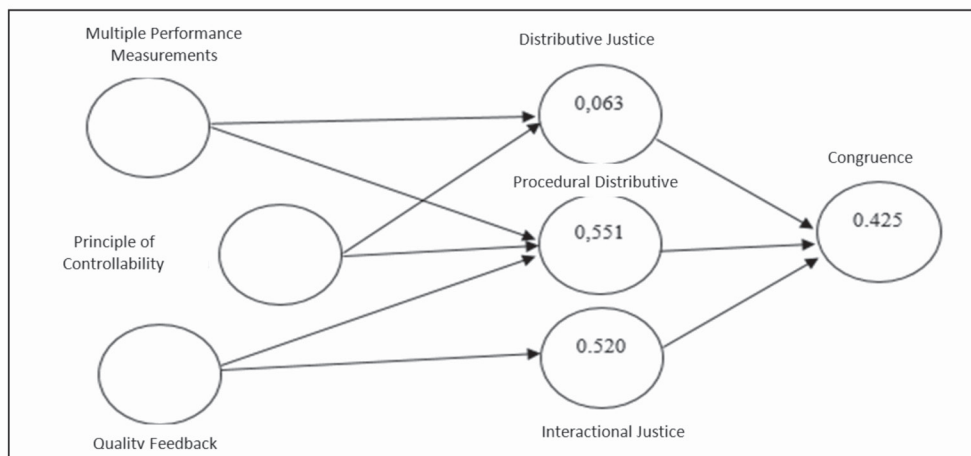


Figure 5. Proposed model with R² values – SEM/PLS

Source: Survey data.

It is seen in Figure 5 that the lowest R² among the constructs was 0.063 for the distributive justice variable, indicating that there are other variables that were not considered in the model that may have stronger explanatory power over the distributive justice variable than

the use of multiple performance measurements and controllability. On the other hand, the latent variables procedural justice, interactional justice, and congruence between goals are explained by the model by 55%, 52%, and 43%, respectively.

Following that, the hypotheses testing was performed for each structural path in the path diagram of the structural model to identify whether the t-values are higher than 1.96 for $p < 0.05$, as according to Hair Jr et al. (2009). To

perform those tests, the bootstrapping analysis was performed with 2,000 different sub-samples for each of the 137 items, as recommended by Hair Jr et al. (2009).

Table 6

PLS Results – Path Coefficients – Total Effect

	Original Sample (O)	t test	p-value	Significance	Hypotheses
M. P. Measurement > Distributive J.	0.288	2.472	0.007***	Significant	H1a
M. P. Measurement > Procedural J.	0.318	3.823	0.000***	Significant	H1b
P. Controllability > Distributive J.	-0.084	0.905	0.183	Non-significant	H2a
P. Controllability > Procedural J.	0.055	0.898	0.185	Non-significant	H2b
Q. Feedback > Interactional J.	0.721	15.266	0.000***	Significant	H3a
Q. Feedback > Procedural J.	0.587	10.658	0.000***	Significant	H3b
Distributive J. > Congruence	0.131	1.598	0.055*	Significant	H4
Interactional J. > Congruence	0.575	5.922	0.000***	Significant	H4
Procedural J. > Congruence	0.176	1.695	0.045**	Significant	H4

Note: *Significant $p < 0.1$; **Significant $p < 0.05$; ***Significant $p < 0.01$.

Source: Survey data.

4.4 Discussion of Results

The results allow for a discussion of the hypotheses. The first hypothesis (H1a and H1b) referred to whether using multiple performance measurements is significantly related to the distributive and procedural justice of incentive contracts. The results were significant at $p < 0.01$, so it can be inferred that, for the sample, the trustees consider the use of a broad set of performance measurements to be positively associated with a more precise evaluation, where comparing to the real level of effort (Greenberg, 1987) contributes to a less tendentious and less biased evaluation system (Giraud et al., 2008), besides giving a “voice” to trustees in order to avoid wrong evaluations (Lau & Moser, 2008), this being aligned to the procedural rules proposed by Leventhal (1980).

The second hypothesis (H_{2a} and H_{2b}) referred to whether the application of the controllability principle is significantly related

to the distributive justice and procedural justice of the incentive contracts. As according to Table 6, the results were not significant. This result goes against those found by Giraud, Langevin, and Mendoza (2008) when researching the perception of French managers, where the managers wished uncontrollable factors to be mitigated. However, it is consistent with studies performed in Brazil (Beuren, Amaro, & Silva, 2015). Giraud, Langevin, and Mendoza's (2008) survey found that there is no concern about the neutralization of uncontrollable factors among Brazilian trustees. Similarly, Klein, Beuren, and Dal Vesco, (2019) Luciana Klein, Ilse Maria Beuren and Delci Dal Vesco. Purpose: This study investigates which dimensions of the management control system (MCS found that when trustees disregard uncontrollable factors when evaluating performance, this has no impact on the perceptions of procedural and distributive justice. Those results must be carefully considered

because the environment the concept was applied to was not investigated; that is, there is the possibility of incomprehension on the part of the respondents of the concept's application (Klein et al., 2019) Luciana Klein, Ilse Maria Beuren and Delci Dal Vesco. Purpose: This study investigates which dimensions of the management control system (MCS. Another point to be highlighted is cultural differences. In his study about cultural dimensions, Hofstede (1980) points out that countries that have a culture of little "aversion to uncertainty" tend to be more tolerant with the things they cannot control, so it is suggested that the influence of cultural dimensions be investigated in the application of the controllability principle.

The third hypothesis (H3a and H3b) referred to whether the feedback quality is significantly related to the procedural and interactional justice of the incentive contracts. The results were significant at $p < 0.01$. This result can be explained by the fact that well-issued feedback is considered more consistent and precise, thus attending to Leventhal's (1980) procedural rules. Providing feedback promotes communication between managers and their bosses (Colquitt & Jackson, 2006; Erdogan, 2002). Also, bosses who discuss results with their workers throughout and at the end of the year can be seen as more respectful. The quality of the feedback can also indicate that the receivers are valued and respected members of the group (Roberson & Stewart, 2006).

The fourth hypothesis (H₄) tested the relationship between organizational justice in incentive contracts and the congruence between personal and organizational goals. The results to the relationship between the perception of distributive justice in incentive contracts and the congruence between personal and organizational goals were significant at $p < 0.10$. This allows it to be stated that the pay and total benefits listed in incentive contracts act to counter the work effort, the stress and pressures of trustee functions, and the responsibility and seriousness

needed to carry out activities, and are associated with the perception of distributive justice and consequently lead to congruence between personal and organizational goals.

The relationship between procedural justice in incentive contracts and the congruence between personal and organizational goals was significant at $p < 0.05$, so it can be stated that procedures (administrative, performance evaluation, operational, scope presentation) are consistent and precise, and they are associated with trustees' perceptions of procedural justice in incentive contracts, thus leading to congruence between personal and organizational goals.

The results to the relationship between the perceptions of interactional justice in incentive contracts and the congruence between personal and organizational goals were significant at $p < 0.01$; that is, it can be inferred that the more sample trustees consider they are treated in an honest, ethical way, having a voice in the organization where they work while their officers really show that they are interested in their activities, thus showing that the sample trustees perceive interactional justice in incentive contracts, the more their personal goals will be aligned to the organization's.

5 Conclusions

The conflict of interest triggered by incongruence between trustees' personal goals and organizational ones is the core discussion of agency theory. One of the main instruments used when seeking to reduce these agency conflicts resulting from those interests are incentives contracts. In complex agency models, incentive contracts can be established among other hierarchical levels besides in the principal to agent relationship, by means of the establishment of contracts among agents themselves, which is a feature of decentralized companies or those whose responsibility centers are well defined.

However, financial incentives may not always lead to congruence between personal and

organizational goals. Observing only economical aspects when conceiving incentive schemes is not enough. The literature suggests that behavioral aspects must also be taken into account in incentive contracts, mainly with regards to justice. So, the aim of this study was to investigate if the perception of trustees regarding organizational justice in the features of incentive contracts is associated with congruence between personal and organizational goals in companies with a decentralized structure.

The findings of the survey allow us to conclude that: 1) the pay and total benefits listed in incentive contracts as a reward for responsibilities, effort, stress, and pressures triggered by holding a management position are strongly related to the perception of distributive justice and consequently lead to congruence between personal and organizational goals; 2) consistent, precise procedures are closely linked to the perception of procedural justice and, consequently, are associated with congruence between personal and organizational goals; 3) the sample trustees consider that they are treated in an honest, ethical way and have a voice in the organizations where they carry out their activities, indicating that the trustees perceive interactional justice in the incentive contracts, and thus their personal goals are aligned to organizational ones. So, it is concluded that trustees' perceptions of organizational justice are positively associated with congruence between personal and organizational goals in Brazilian companies with a decentralized structure.

Our findings are particularly relevant to the literature. Agency theory assumes people make decisions that are exclusively concerned with increasing their own material satisfaction; that is, maximizing their individual utility with the less effort possible. The results of this research point out that clearly there are other variables that influence our choices, such as organizational justice. Thus, such variables should be taken into account when formulating and applying incentive contracts in order to lead to a better

sense of fairness in organizational relations. So, organizational justice in agency contexts can be considered as a potent motivator for mitigating conflicts and aligning both personal and organizational goals.

However, as the environments where incentive contracts were applied were not investigated, the results of the survey have to be carefully considered, especially concerning the results for the controllability principle. The poor explanatory power of multiple performance measurements and the controllability principle in relation to distributive justice is also considered a limitation because it indicates there are other variables not taken into account in the model that can have more explanatory power regarding the distributive justice variable and that have to be investigated.

It is understood that many questions have to be discussed in future research. The relationship between the management profile of the respondents and organizational justice deserves more discussion. The literature on organizational justice has mainly focused on the consequences of perceptions of organizational (in) justice by trustees. But the impact of the sample features, specifically the management profile, on the way organizational justice is seen by trustees, must be considered in future research. Another question to be evaluated is the conflicting findings between the Brazilian and international literature, mainly as regards to the controllability principle. So, it is suggested that the application of incentive contracts be investigated under a qualitative lens.

Another aspect that deserves deeper investigation is the search to understand which other features of incentive contracts could have an impact on perceptions of organizational justice and consequently on the congruence between personal and organizational goals, mainly due to the poor explanatory power of the features "multiple performance measurements" and "controllability principle" of the latent variable "distributive justice."

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Appendix A – Survey instrument

ORGANIZATIONAL JUSTICE							
Organizational justice will be mapped from statements that capture workers' perceptions about how work relations in the organization are considered fair or unfair, in the composition of rewards (both financial and non-financial), in the design and use of administrative procedures, and in interpersonal treatment.							
agreement	Less agreement			More agreement			
	1	2	3	4	5	6	7
The rewards I get are fair if taking my professional experience into account.							
The rewards I get are fair if taking my responsibilities in the company into account.							
The rewards I get are fair if taking the stress and pressures from my activities into account.							
The rewards I get are fair if taking into account how seriously I do my job.							
The rewards I get are fair if taking my effort to do my activities into account.							
I believe the criteria previously established and used for promotions in my company are fair.							
I believe procedures (administrative, performance evaluation, operational, presentation of scopes) in my institution help decisions to be taken with no personal favors.							
I believe my company decisions are taken in a consistent way for all trustees.							
I believe the bosses in my company collect precise information before taking professional decisions that affect me.							
The organization has mechanisms that allow employees to appeal their decisions if they seem to be unfair.							
My bosses show genuine interest in my professional activities.							
My treat me honestly and ethically.							
My bosses are frank and assertive to me.							
My bosses listen to my points of view before they decide about matters that concern me.							
When my bosses take decisions about my work I receive explanations that make sense.							
When my bosses take decisions about my work they discuss the implications of such decisions with me.							

CONTROLLABILITY							
The controllability dimension seeks to identify workers' perceptions of the aspects involved in performance evaluations based on factors that they can either control or not.							
agreement	Less agreement			More agreement			
	1	2	3	4	5	6	7
My performance evaluation includes aspects beyond my sphere of influence.							
My performance evaluation includes aspects I cannot control.							
I believe my performance evaluation is affected by decisions taken by trustees from other departments than mine.							
I believe my performance evaluation was influenced by decisions taken by higher hierarchical levels.							
I believe my performance evaluation is affected by macroeconomic factors.							
I believe my performance evaluation is affected by political factors that are external to the company.							

MULTIPLE PERFORMANCE MEASUREMENTS							
The statements on multiple performance measurements indicate the workers' perceptions about different performance evaluation criteria supporting the establishment of their variable pay.							
agreement	Less agreement			More agreement			
	1	2	3	4	5	6	7
My performance evaluation is based only on financial measures.							
My performance evaluation is based on both financial and non-financial measures but there is a minimum limit of financial measures to be reached before considering the non-financial ones.							
My performance is based on objective information derived from the Management Control System.							
My performance evaluation is based on subjective but always well-reasoned information.							

FEEDBACK QUALITY							
The statements on performance feedback quality identify workers' perceptions with regards to the quality of company communications about the execution of tasks received as support to help them in their future performance.							
agreement	Less agreement			More agreement			
	1	2	3	4	5	6	7
I receive feedback from my bosses about my performance in my occupation at the company.							
I receive useful, precise feedback from my bosses that reflects my performance.							
I think my trustee's leadership profile (close or distant leadership) interferes with feedback quality.							
I receive feedback that can potentially improve my performance in the future.							
I value the feedback I receive from my boss considerably.							
The options for growth and development in the company are clearly discussed and presented by my manager.							

CONGRUENCE BETWEEN PERSONAL AND ORGANIZATIONAL GOALS							
The statements on congruence between personal and organizational goals identify workers' perceptions as to the compatibility between the trustees' and company's interests.							
agreement	Less agreement			More agreement			
	1	2	3	4	5	6	7
Achieving my company's goals also means achieving my personal ones.							
My personal goals are consistent and match the company's.							
My organizational goals will allow me to achieve my personal ones in the short term.							
When I achieve the goals set by my company I feel as if I have achieved my personal ones.							
I am temporarily willing to waive some personal advantages so the company can get more profit.							
My personal goals include positive results for both my career and my company.							
My organizational goals will allow me to achieve my personal ones in the long term.							

CHARACTERIZATION OF THE RESPONDENT

Gender: male female

Year of birth: _____

Position held: _____

Do you hold or have you held a management position:

Yes No

*In the case of a positive answer to the previous question, for how long? _____

Do you receive any type of financial incentive to carry out your activities:

Yes No

Can part of your pay (monthly or yearly) be considered as variable:

Yes No

In the institution you work at, can the hierarchical structure be considered as decentralized:

Yes No

In the institution you work at, are the delegation of power and establishment of responsibilities clearly defined:

Yes No

How many workers are under your management: _____

Do you report to a hierarchically superior trustee:

Yes No

Time working at the current organization:

Up to 05 years

06 to 10 years

11 to 15 years

16 to 20 years

Over 20 years

College education:

Graduate degree No Yes. Which one? _____

Post-graduate degree No Yes. Which one? _____

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Contribution	Luciana Klein	Romualdo Colauto
1. Definition of research problem	√	√
2. Development of hypotheses or research questions (empirical studies)	√	
3. Development of theoretical propositions (theoretical Work)		
4. Theoretical foundation/ Literature review	√	
5. Definition of methodological procedures	√	√
6. Data collection	√	
7. Statistical analysis	√	
8. Analysis and interpretation of data	√	
9. Critical revision of the manuscript		√
10. Manuscript Writing	√	√
11. Other (please specify which)		