

# Budget participation and employee performance in real estate companies: the mediating role of budget goal commitment, trust and job satisfaction

Pedro Silva

*CeBER, Faculty of Economics, University of Coimbra, Coimbra, Portugal*

Jorge Mota

*GOVCOPP, Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro, Aveiro, Portugal and  
CICEE, Lisboa, Portugal, and*

Antonio Carrizo Moreira

*GOVCOPP, Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro, Aveiro, Portugal and  
INESCTEC, Porto, Portugal*

## Abstract

**Purpose** – Recent years witnessed an exponential growth of the Portuguese real estate market. This growth has generated the need to implement effective management control tools to allow companies to improve their planning and monitoring of activities. Drawing on the agency and goal-setting theories, this paper explores the impact of companies' participative budgeting processes on employee performance in the real estate industry.

**Design/methodology/approach** – For this purpose, a questionnaire was developed and a sample of 116 employees that participate in the budgeting process of real estate organizations collected, with data analyzed using structural equation modelling.

**Findings** – The results show that participation in the budgeting process has an impact on employees' performance through budget goal commitment, trust and job satisfaction. However, no statistical support was found for the role of budgetary slack in this process.

**Research limitations/implications** – This study was conducted in a single industry and is based on self-reported measures of employees that participate in the budgeting process of their organizations.

**Practical implications** – The findings highlight the need for real estate organizations to involve their staff in the elaboration of budgets, contributing to a higher level of commitment to established goals, job satisfaction, trust and performance. Real estate organizations should provide adequate working conditions, foster their employees' autonomy and recognize their work.

**Originality/value** – The findings encourage real estate companies to extend the participation in the budget process to employees and, ultimately, to mitigate the probability of budget failure.

**Keywords** Budget participation, Budget slack, Budget goal commitment, Job satisfaction, Trust, Employee performance

**Paper type** Research paper

## 1. Introduction

Although the Portuguese real estate market has increased exponentially, there is still a deficit of new construction due to recent years' crises. Because of this high demand and lack of

*Funding:* This work has been funded by national funds through FCT – Fundação para a Ciência e a Tecnologia, I.P., Project UIDB/05037/2020.



supply, it is important for prices not to become speculative, which has generated in real estate companies the need to implement management tools that provide important metrics for budget control (Pereira *et al.*, 2020). Budgets constitute one of the tools that support the fulfilment of objectives. While they have been subjected to criticism due to the costs of preparing budgets, the increased budget gaming and the increasing environmental uncertainty that organizations are facing (Sandalgaard, 2012), they are still recognized as means to attain internal effectiveness and to communicate information to shareholders and other parties (Derfuss, 2009). This is particularly important for the Portuguese real estate industry which has not yet been able to turn into a product of excellence among other reasons, because of cost overruns (Pereira *et al.*, 2020). Therefore, the budgeting process is of great importance and must be included in the management control functions as it supports the prediction of the needs of an organization. The literature suggests that real estate success depends to a large extent on its employees' performance, e.g. providing high-quality construction (Kazaz and Acikara, 2015). Indeed, it can be argued that employees' performance can be precipitated by their active participation in the process of budget formulation (Winata and Mia, 2005). This is one of the reasons why accounting researchers have long tried to understand the relationship between participative budgeting and employees' performance (Nouri and Parker, 1998).

However, the signal of this relationship is not clear as, contrary to theoretical expectations, the participative budgeting-performance relationship seems heterogeneous and not generalizable across public and private sectors, or manufacturing and services (Derfuss, 2016). Nevertheless, both the agency and psychological theories suggest that budget participation should increase performance. However, empirical findings are not consistent as they reveal positive, non-significant and negative relationships for managerial, departmental and organizational performance (Derfuss, 2009, 2016). These different results can be explained by (both) the use of single or multiple-item measurements and as result of industry differences (Derfuss, 2016). For instance, most studies investigating the budget participation-performance relationship have been conducted in manufacturing industries (Winata and Mia, 2005). Chong and Johnson (2007) further add that the inconclusiveness of the results may be due to the lack of understanding about the mechanisms by which budget participation influences subordinates' performance.

As such, further studies conducted in overlooked industries extending the link between budget participation and performance can contribute to clarifying the debate in the field. This paper draws on the agency and goal-setting theories (Locke, 1968; Locke and Latham, 1990) to investigate if and how budget participation is related to employee performance in a service industry as is real estate and how multiple factors, e.g. budget slack, budget goal commitment, trust and job satisfaction can simultaneously mediate this relationship. This study contributes to the budgeting and performance literature by developing a theoretical model and providing empirical evidence on how budget goal commitment, trust and job satisfaction mediate the relationship between budget participation and employee performance in real estate companies.

The remainder of the article is structured as follows. After this introduction, the next section presents the motivation for the study and the development of the hypotheses. Then, the methodology is described, including the results of the structural equations modeling. The article concludes with a discussion of the results, implications for managers, research limitations and future lines of investigation.

## 2. Motivation of the study

This study is motivated by several reasons. Firstly, budgetary participation has long been recognized as a central issue in organizations (Argyris, 1952) and remains an important

element of budgetary control (Duan *et al.*, 2022). Secondly, the real estate industry is among the ones in the Portuguese economy with lower salaries and performance (Rodrigues, 2022). The industry also suffers from other shortcomings, e.g. poor quality, overdue deadlines and budget overruns (Pereira *et al.*, 2020). This means that to be competitive and to fulfil customers' needs and construction obligations, managers should handle properly good governance principles (Gross and Żróbek, 2015). In this sense, past research has shown that participation in budgets is linked with job-related stress, motivation and performance, but results might not hold for all industries (Winata and Mia, 2005). Thirdly, budgets in real estate companies add value as they are related with strategy implementation and performance is an essential outcome for management and budgeting (Hartmann, 2000) which the Portuguese real estate industry needs. Against this background, employees' budgetary participation can motivate them to exchange more information, avoid cost overruns, commit to the company's objectives and better perform their duties.

### 3. Hypothesis development

#### 3.1 Employee performance

Employees' performance is considered a crucial dimension of organizational behavior (Tran *et al.*, 2020). Employee performance has been related with attaining corporate objectives and stakeholder expectations (Pattnaik and Pattnaik, 2020). Organizations can hardly succeed when employees underperform (Cappelli, 2008). Against this backdrop, it is important for managers and researchers to understand what drives the performance of employees (Pattnaik and Pattnaik, 2020). However, this can be particularly challenging as there is no objective performance measurement scale settled (Tran *et al.*, 2020). Motowildo *et al.* (1997, p. 71) argue that employee performance is "the aggregated value to the organization of the discrete behavioral episodes that an individual performs over a standard interval of time". For Diamantidis and Chatzoglou (2019), employee performance is the degree to which the level of productivity meets a company's performance standard. Performance is thus related with both behaviors and results, meaning that employees fully understand their functions and the performance and standards they need to meet (Silva *et al.*, 2022). In this study, employee performance is interpreted as the achievements perceived by individuals in their attempt to reach the established objectives. Highly performing employees can contribute to mitigating or addressing real estate quality issues and time deviations (Pereira *et al.*, 2020).

#### 3.2 Budget participation

Budget participation can be defined as the amount of managers' involvement in and influence on, setting their unit's budget (Dorfuss, 2009; Shields and Shields, 1998). Subordinates' participation in budgets is a way of decreasing the dysfunctional attitudinal and behavioral consequences of using budgets to simultaneously motivate and control employees (Argyris, 1952; Yuliansyah *et al.*, 2019). Top-level managers may establish objectives based on budgets as a way to collect all relevant information for the budgeting process and to obtain higher levels of motivation from their subordinates and more rigorous implementation of the budget (Shields and Young, 1993).

Participation in the budget contributes to decreasing agency because budget-based contracts and bonuses for budget achievements may be used to align the interests of the principal and agent (Sprinkle *et al.*, 2008). As part of these contracts, agents might reveal private information to build more realistic budgets, increase resource allocation efficiency, leading to higher efforts from the agents and increased performance (Shields and Young, 1993). From a psychological standpoint, budget participation increases subordinates' trust, sense of control and involvement with the organization, contributing to decreasing the

resistance to change and increasing the acceptance of budget decisions and ultimately improving performance (Shields and Shields, 1998). However, Derfuss (2016) notes this relationship is not necessarily a direct one, but instead contingent and mediated by other variables.

One of the factors that may influence this relationship is budget slack. Dunk (1993) argues that budget participation and budgetary slack relationship, is dependent on the emphasis on budget and information asymmetry, i.e. the slack of the budget can be influenced by the degree of budget participation. Mowen *et al.* (2018) noted that the probability of creating budgetary slack increases when managers perceive they can participate in the definition of the budget. Cyert and March (1963) argue that the creation of slack constitutes a buffer against uncertainty on the achievement of preset targets. Considering that the real estate industry is characterized by high uncertainty, we expect that participatory budgeting has a positive effect on slack. As such, the following hypothesis is proposed:

*H1.* Budget participation in real estate firms has a positive impact on budget slack.

This study examines whether budget participation has an impact on budget goal commitment. Locke (1968) argued that an effect of participation is to commit the subject with the decision reached. Budget goal commitment is a determination for a budget goal and the persistence in pursuing it over time (Locke *et al.*, 1981). The involvement of employees in the development of budgets makes them feel closely related to and familiar with, the objectives of the budget and the organizational goals (Nouri and Parker, 1998). Chong *et al.* (2006) add that subordinates' involvement and influence on the budgeting-setting process increase their feeling of control and commitment to their goals. Budget participation can work as a motivational driver by providing an opportunity for real estate employees to get involved and influence the budget setting. The commitment of employees to established goals is particularly important in an industry where meeting objectives, deadlines and costs is not always achieved. Following the goal-setting theory, budget participation increases subordinates' motivation through acceptance and commitment to their budgetary goals (Chong and Chong, 2002). Thus, the following hypothesis is proposed:

*H2.* Budget participation in real estate firms has a positive impact on budget goal commitment.

Budget participation may influence trust in the organization. Trust is a form of social capital that contributes to decrease transaction costs within an organization and to increase sociability among employees (Kramer, 1999). When top managers allow subordinates to participate and contribute to the budgeting process, they contribute to developing a sense of trust in their work. The processes that involve participation can influence the feelings of trust towards hierarchical superiors (Maiga and Jacobs, 2007). The psychological theory supports that participative budgeting increases subordinates' trust and ego-involvement with the organization, which in turn increases the acceptance and commitment to the budget decision (Shields and Shields, 1998). As such, the following hypothesis is proposed:

*H3.* Budget participation in real estate firms has a positive impact on trust.

Job satisfaction, an emotional interaction between the individual and the organization, is related to the degree of employees' expectations met within the organization. The psychological theory-based research assumes that budget participation exists to increase job motivation, among others (Shields and Shields, 1998). Research conducted by Leach-López *et al.* (2009) also supports the relationship between budget participation and satisfaction. As such, the following hypothesis is proposed:

*H4.* Budget participation in real estate firms has a positive impact on job satisfaction.

### 3.3 Budget slack

Budgetary slack occurs when “subordinates intentionally build excess requirements for budgets into the budget” (Young, 1985, pp. 829–830). When creating a budget, subordinates may twist their capacities and performance, under- or overestimating revenues and costs. Underestimated budgets increase the likelihood that results will be achieved, decreasing risk, whereas overestimating costs may unnecessarily allocate resources that could be of better use elsewhere. This constitutes a burden potentially misleading top management on the real potential of the company and leading to inefficient resource planning and allocation (Hornngren *et al.*, 2018). Leavins *et al.* (1997) conclude that slack increases when there is a strong link between budgets and reward systems. This is supported by agency-theory research relating subordinates’ incentives to establish lower budgetary goals when their reward system is associated with their ability to reach budget goals (Chong and Johnson, 2007). Employees should feel committed to meeting the goals in which they participated in the setting process and gain the respective rewards. Thus, the following hypothesis is proposed:

H5. Budget slack in real estate firms has a positive impact on budget goal commitment.

Performance is related to the ability to perform a duty. Blumberg and Pringle (1982) note that organizational policies (e.g. reward systems), a function of job-related environmental factors, influence employee performance. Fair reward systems encourage optimal work and effective payment programs for achievements, motivate employees, providing an opportunity to get more by doing so and to establish clear achievement targets (Taba, 2018). Agency theory suggests that subordinates set low budget goals (create slack) when their reward is based on their ability to fulfil budget goals in which they took part in the setting process (Lukka, 1988). Considering that reward systems increase employees’ motivation and compensate for any lack of commitment, particularly when rewards are related to performance (Taba, 2018), employees are expected to attain the objectives they established. The following hypothesis is proposed:

H6. Budget slack in real estate firms has a positive impact on employee performance.

### 3.4 Budget goal commitment

Budget goal commitment reflects an attitude about a goal and the maintenance of that determination (Chong and Chong, 2002). According to the goal-setting theory, having goals can be beneficial for performance and existing research shows that individuals perform better when they accept and commit to reaching a goal (Locke and Latham, 1990). Being committed to budgetary goals is particularly important given the size of real estate projects and the need to build awareness of the objectives. Participating in budgeting will make real estate employees feel more responsible for the organization’s goals leading to a scenario whereby they will perform in order to meet the set objectives. Theoretical and empirical (Chong and Johnson, 2007; Locke and Latham, 1990; Shields and Shields, 1998) evidence seems to support that higher levels of budget commitment are associated with higher levels of subordinates’ performance. Thus, the following hypothesis is proposed:

H7. Budget goal commitment in real estate firms has a positive impact on employee performance.

### 3.5 Trust

Trust is “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (Rousseau *et al.*, 1998, p. 395). Kramer (1999) considers trust a form of social capital in the organizational environment,

underlining its positive effects, e.g. reduced transaction costs within the organization and the increase of sociability among employees. Trust in an organization may work as a complement to management, contributing to decreasing hierarchical distance and mitigating possible opportunistic behaviors (Sako and Helper, 1998). Maiga and Jacobs (2007) argue that subordinates who do not trust their superiors can hardly commit themselves to a vision since that lack of confidence in the superiors decreases the appeal of the vision. Consistent with the arguments above, in a budget setting, the higher subordinates trust colleagues and superiors, the higher their commitment to their budget goals. The following hypothesis is proposed:

*H8.* Trust in real estate firms has a positive impact on budget goal commitment.

Trust emerges as one of the indispensable conditions for employees' well-being and thus contributes to the development of a competitive edge. According to Ning and Jin (2009), trust influences performance, especially if the employees feel psychological security. Silva *et al.* (2022) supports the existence of a positive relationship between organizational trust and employee performance in the construction industry as trust among members of an organization contributes to the sharing of ideas and experiences from which the organization might profit. The following hypothesis is proposed:

*H9.* Trust in real estate firms has a positive impact on employee performance.

### 3.6 Job satisfaction

Job satisfaction can be defined as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” (Locke, 1976, p. 1300). Prior research shows that job satisfaction comprises multiple dimensions, e.g. personal variables and work environment (Scarpello and Vandenberg, 1992). Personal needs are one of the most important aspects of job satisfaction; however, the job itself, its location, the physical conditions, the level of knowledge required, the salary, the relationships between workers and the safety are also considered important variables that affect satisfaction (Tanriverdi, 2008). An organization can be meaningful to employees, contributing to their feeling of protection, safety and confidence, increasing their commitment.

As seen, commitment is a psychological state, a form of loyalty to an organization, with implications on employees' desire to remain a member of the organization, or instead, leave it and search for other jobs (Meyer *et al.*, 2002). High work satisfaction is desired by managers as it is linked with positive results and is indicative of well-run organizations, being an outcome of effective behavior management (Taba, 2018). Employees that feel more satisfied with their work, e.g. because of the company's reward system (agency), feel more motivated towards achieving the goals they are committed to. As such, the following hypothesis is proposed:

*H10.* Job satisfaction in real estate firms has a positive impact on budget goal commitment.

Research shows that satisfaction with budgeting correlates with positive outcomes, e.g. rewarding and evaluation of operational managers (Wagner *et al.*, 2021). When employees feel satisfied with their working conditions, they will most likely contribute with everything possible to successfully perform their duties. An organization with more satisfied employees will tend to perform better. The acknowledgement of the resulting performance also constitutes a reason for employees to be more productive and current research supports the impact that job satisfaction has on the performance of employees (Silva *et al.*, 2022). The following hypothesis is thus proposed:

*H11.* Job satisfaction in real estate firms has a positive impact on employee performance.

## 4. Method

### 4.1 Data and sample

This study follows a quantitative approach with data collected in the real estate industry. As depicted in [Section 2](#), this industry constitutes an interesting ground for research because of its need to improve performance. To collect the data, an online questionnaire was developed. Then, an INCI (Instituto da Construção e Imobiliário) partner was contacted to distribute the survey to its members and, specifically to employees that participate in the budgeting process of their respective companies. The questionnaire began with a summary of the objectives of the study. Respondents were informed that: their participation was voluntary, there were no right or wrong answers, they should answer honestly and that their anonymity was guaranteed to reduce potential evaluation apprehension (see, e.g. [Podsakoff et al., 2003](#)). Nevertheless, some items in the survey, e.g. the ones reporting on budget slack and employee performance were considered highly sensitive and the INCI only agreed to disseminate the survey under the condition that no personal information of any kind about the respondents would be provided to the researchers. Considering this limitation, the questionnaire was distributed to 87 companies from which a sample size of 116 responses was obtained. Only information about the participating companies was disclosed. Data were analyzed with the use of SPSS and AMOS.

### 4.2 Measures

All constructs were measured using multi-item scales adapted from previous studies. The constructs budget participation, budget slack, budget goal commitment, trust and employee performance were assessed using a seven-point Likert scale with “strongly disagree” and “strongly agree” as anchors. Job satisfaction was measured using a five-point Likert scale with the same semantics. Budget participation was measured using items taken from [Milani \(1975\)](#). Budget adequacy was measured through items adapted from [Dunk \(1993\)](#). Budget goal commitment was assessed by adapting items collected from [Maiga and Jacobs \(2007\)](#). To measure trust, items from [Cook and Wall \(1980\)](#) were considered. Job satisfaction was assessed with items taken from [Leach-López et al. \(2008\)](#). Finally, to assess employee performance, items were adapted from [Podsakoff et al. \(1982\)](#).

### 4.3 Measurement model

A two-step approach was used to validate the measurement and the structural model. In the first step, a confirmatory factor analysis (CFA) was run to assess the measurement model. In the second step, the structural model was tested. Common method bias (CMB) constitutes a critical issue if data is collected using the same method for both criteria and prediction variables and from the same set of respondents and within a specific setting ([Podsakoff et al., 2003](#)). Thus, before running the CFA Harman’s single-factor test was conducted. The results confirmed that the extracted factor did not explain a considerable amount of the variance (38.466%), meeting the 50% threshold ([Hair et al., 2010](#)), excluding the possibility of CMB in this study.

The measure’s internal consistency was confirmed by examining Cronbach’s alpha coefficients, whose values ranged between 0.742 and 0.884. The composite reliability (CR) was confirmed by examining the CR values (greater than 0.70) of all the latent constructs, as shown in [Table 1 \(Hair et al., 2010\)](#). The factor loadings for all items were greater than the minimum threshold value of 0.50 ([Hair et al., 2010](#)). The average factor loading for each construct is also larger than 0.70, which is a necessary condition if individual item loadings are below the threshold value (<0.70). Thus, factor loadings of latent construct range between 0.567 and 0.942, confirming their convergent validity. The average variances extracted (AVEs) are above 0.50 for all the constructs, also confirming the convergent validity. Next, the square root of the AVEs was calculated and compared with the inter-construct correlations (see [Table 2](#)). All AVEs were compared and found to be greater than their correlation

Constructs and measurements items	Mean	S.D	Item loading
<i>Budget participation (Cronbach alpha = 0.833, AVE = 0.641, CR = 0.842)</i>			
I am involved in setting all portions of my budget	5.72	1.12	0.777
I have a high amount of influence on the final budget	5.73	0.90	0.832
My contribution to the budget is very important	5.79	1.16	0.791
<i>Budget slack (Cronbach alpha = 0.742, AVE = 0.526, CR = 0.759)</i>			
The goals I set in the budget are not the ones I really foresaw, but the ones that will be possible to achieve	3.93	1.32	0.589
I conveyed information and objectives that I will be able to easily achieve, even though these do not correspond to what, in reality, I could achieve	3.19	1.46	0.942
My opinion that the results present in the budget will be very different from the actual results that can be obtained	2.93	1.39	0.586
<i>Budget goal commitment (Cronbach alpha = 0.884, AVE = 0.662, CR = 0.887)</i>			
It is important for me to achieve the budgeted minimum in my area of expertise	5.76	1.00	0.822
I strive to achieve the budget goals in my area of expertise	5.97	0.91	0.820
Commitment to a goal means accepting it as your personal goal. I feel committed to reaching the budget in the area of expertise	5.91	0.91	0.783
I want to comply with the budget objectives that have been proposed to me	6.13	0.81	0.828
<i>Trust (Cronbach alpha = 0.746, AVE = 0.529, CR = 0.762)</i>			
If I got into difficulties at work, I know my workmates would try and help me out	5.33	1.04	0.635
Management at work seems to do an efficient job	5.49	1.19	0.928
Most of my fellow workers would get on with their work even if supervisors were not around	6.03	0.90	0.567
<i>Job satisfaction (Cronbach alpha = 0.858, AVE = 0.607, CR = 0.860)</i>			
I feel satisfied with the way my job provides for steady employment	3.58	1.13	0.713
I feel satisfied with the way company policies are put into practice	3.49	1.13	0.766
I feel satisfied with the chances for advancement on this job	3.38	1.28	0.804
I feel satisfied with the praise I get for doing a good job	3.60	1.08	0.828
<i>Employee performance (Cronbach alpha = 0.822, AVE = 0.645, CR = 0.841)</i>			
I achieved most of the budgeted goals because it would not be right not to strive for it	5.72	1.12	0.854
I achieved the budgeted goals and objectives because it was important to the organization and to me	5.84	1.14	0.910
I achieved the budgeted goals and objectives because I wanted to progress in my job	5.29	1.24	0.614
<b>Note(s):</b> AVE = Average Variance Extracted, CR = Composite Reliability			

**Table 1.**  
Measurement items and properties

coefficients, confirming the discriminant validity of the proposed model. Finally, the overall measurement model reveals a good model fit:  $\chi^2/df = 1.040$ ; GFI = 0.887; IFI = 0.995; TLI = 0.994; CFI = 0.995 and RMSEA = 0.019 (Hair *et al.*, 2010).

#### 4.4 Structural model

In the second step, the structural model fit statistics indicate good fit according to Hair *et al.* (2010). The overall fit for the model is:  $\chi^2/df = 1.215$ ; GFI = 0.864; IFI = 0.972; CFI = 0.971; TLI = 0.966; RMSEA = 0.043.

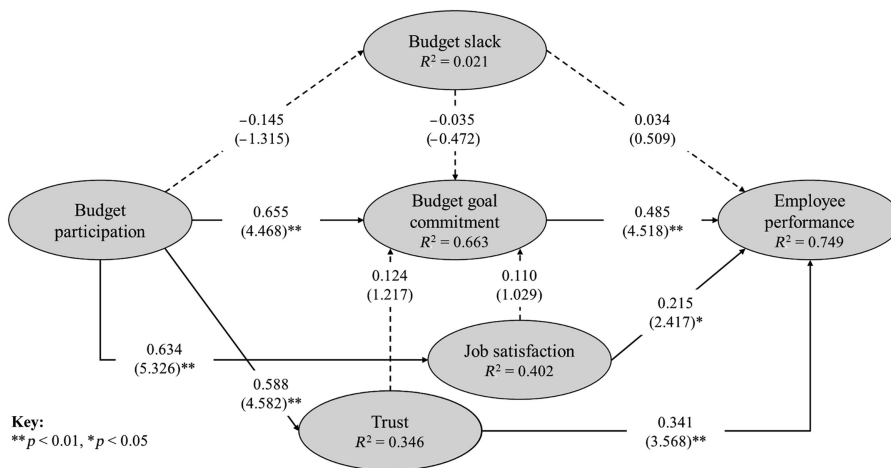
### 5. Results

The total variance explained ( $R^2$ ) and the results of the structural path analysis (standardized path coefficients and  $p$ -values) are shown in Figure 1.

**Table 2.**  
Correlations between  
constructs and  
discriminant validity

	AVE	CR	Budget participation	Budget slack	Budget goal commitment	Trust	Job satisfaction	Employee performance
Budget participation	0.641	0.842	<i>0.800</i>					
Budget slack	0.526	0.759	-0.113	<i>0.725</i>				
Budget goal commitment	0.662	0.887	0.766	-0.166	<i>0.813</i>			
Trust	0.529	0.762	0.499	-0.193	0.576	<i>0.727</i>		
Job satisfaction	0.607	0.860	0.569	-0.159	0.608	0.700	<i>0.779</i>	
Employee performance	0.645	0.841	0.724	-0.134	0.779	0.722	0.704	<i>0.803</i>

**Note(s):** The italic scores are the square root of AVE; the off-diagonal scores are the correlations among constructs



**Figure 1.**  
Structural model path coefficients

The relationship between budget participation and budget slack is not statistically significant, rejecting H1. Budget participation has a positive statistically significant effect on budget goal commitment, trust and job satisfaction, supporting H2, H3 and H4. No empirical support was found for the impact of budget slack on budget goal commitment, nor on employee performance, rejecting H5 and H6. Budget goal commitment has a positive and statistically significant effect on employee performance, supporting H7. Trust has no statistically significant effect on budget goal commitment, rejecting H8; however, it has a positive and statistically significant effect on employee performance, validating H9. Finally, job satisfaction does not have a statistically significant effect on budget goal commitment, therefore rejecting H10, but exerts a positive effect on employee performance, validating H11.

We followed Cheung and Lau's (2008) recommendations for conducting mediation tests. An analysis of mediation was conducted exploring the roles of budget goal commitment, trust and job satisfaction on the relationship between budget participation and employee performance. The relationship between budget participation and performance was initially tested without any mediation, with the results showing a direct effect of 0.721 ( $p = 0.001$ ) with a 95% bias-corrected (BC) confidence interval comprehended between 0.577 and 0.840. Regarding the mediating role of budget goal commitment, the results show that the estimated indirect effect is 0.498. The 95% bias-corrected (BC) confidence intervals for the indirect effect are comprehended between 0.157 and 0.836 ( $p = 0.008$ ), supporting the existence of a full mediation relationship. The estimated indirect effect of budget adequacy on employee performance through trust is 0.279. The 95% BC confidence intervals for the indirect effect are within 0.092 and 0.698 ( $p = 0.001$ ), supporting only a partial mediation relationship. Finally, the estimated indirect effect of budget participation on employee performance through job satisfaction is 0.276. The 95% BC confidence intervals for the indirect effect are between 0.142 and 0.499 ( $p = 0.001$ ), also indicating partial mediation. The results are summarized in Table 3.

The analysis of the total and indirect effects shows that aside from budget participation, budget goal commitment has the second strongest effect on employee performance. Then, trust has a higher effect than job satisfaction, while budget slack is the least important. Detailed results are presented in Table 4.

**Table 3.**  
Analysis of mediation effects between budget participation and employee performance

	Direct effect			Indirect effect			Mediation type
	LB	UB	Effect	LB	UB	Effect	
<i>No mediation</i>							
Budget participation → Employee performance	0.577	0.840	0.721**				
<i>Mediators</i>							
Budget participation → Budget goal commitment → Employee performance	-0.014	0.732	0.331	0.157	0.836	0.498**	Full mediation
Budget participation → Trust → Employee performance	0.295	0.802	0.527**	0.092	0.698	0.279**	Partial mediation
Budget participation → Job satisfaction → Employee performance	0.245	0.784	0.517**	0.142	0.499	0.276**	Partial mediation

**Note(s):** All effects are estimated using the bootstrap resampling procedure (1,000 runs), \*\* $p < 0.01$ , \* $p < 0.05$

**Table 4.**  
Direct, indirect and total effects

	Direct	Indirect	Total
Budget participation → Budget slack	-0.145		-0.145
Budget participation → Budget goal commitment	0.655	0.148	0.803
Budget participation → Trust	0.588		0.588
Budget participation → Job satisfaction	0.634		0.634
Budget participation → Employee performance		0.722	0.722
Budget slack → Budget goal commitment	-0.035		-0.035
Budget slack → Employee performance	0.034	-0.017	0.017
Budget goal commitment → Employee performance	0.485		0.485
Trust → Budget goal commitment	0.124		0.124
Trust → Employee performance	0.341	0.060	0.401
Job satisfaction → Budget goal commitment	0.110		0.110
Job satisfaction → Employee performance	0.215	0.054	0.268

## 6. Discussion

There has been contradictory evidence on the relationship between budget participation and employees' performance (Derfuss, 2016). Our results indicate that budget participation positively, albeit indirectly, influences the performance of employees in the real estate industry. This finding supports previous literature (see Nouri and Parker, 1998; Chong and Chong, 2002; Chong and Johnson, 2007; Leach-López et al., 2009); however, we show that this relationship is mediated by budget goal commitment, trust and satisfaction.

No support was found for the relationships between budget participation and budget slack, nor between budget slack and budget goal commitment and employee performance. Past research on the link between budgetary participation and budget slack has been inconclusive as there is evidence of a positive (weak) effect and even negative effects (Yuen et al., 2015). Some explanations can be advanced. The conflicting mechanisms on the relationship between budgetary participation and slack suggest this relationship may be contingent on the setting. Our research was conducted in real estate, showing that participation on the budget did not contribute to the creation of slack nor of a higher performance through slack as predicted. Real estate characteristics, e.g. high volatility and uncertainty can work as factors that compromise the creation of slack. It can be the case that safety margins (slack) to deal with uncertainty are already introduced in the process and

budget participation itself will not necessarily impact on creating slack. Budget participation alone is not sufficient to create slack, suggesting that may also be created by the interaction between budget participation and other factors. For example, [De Baerdemaeker and Bruggeman \(2015\)](#) found budget participation to be only indirectly related to slack through autonomous budget motivation. In an industry in which participation in the budgeting process is still low and in which efforts are made to encourage it, managers do not need to be worried about employees' slack creation through their participation in the budget as its impact is negligible.

Results show that employees with greater direct participation in the development of the budget demonstrate a greater commitment to fulfilling the established budgetary goals, which in turn, increases performance. Budget participation entitles a sense of duty in real estate employees to fulfil the project's objectives as they were involved in the budgeting process and created expectations in others that they would accomplish them.

Results corroborate the premise that participation in the budget affects trust, e.g. in [Yuliansyah et al. \(2019\)](#). This can be particularly relevant for lower-level employees since they understand their contribution to the budget as important and develop feelings of trust towards the management of the company and in the abilities of colleagues to deliver the budget's objectives. Feelings of interpersonal trust seem to contribute to better performance from the employees.

Participation in budgeting influences satisfaction with the job (see [Chong et al., 2006](#); [Leach-López et al., 2009](#)). Involving employees in preparing the budget can be seen as a job-related factor that leads to greater satisfaction. Results document that job satisfaction positively contributes to performance ([Silva et al., 2022](#)). Employees with good working conditions and personal relationships in the company, who feel duly rewarded and have the autonomy to act, perform better and are more oriented towards the objectives of the budget.

Contrary to what was proposed, trust and satisfaction do not have an impact on budget goal commitment. The lack of support for this relationship can be attributed to the degree of importance attributed to colleagues as the scale used focused on the "I" rather than on the "we". Employees may understand attaining budget goals as an individual rather than a collaborative activity. They may also consider that in real estate, attaining goals is not reliant on the conditions to perform the job but on the agreement on the objectives to reach.

The mediation analysis supports the existence of full (budget goal commitment) and partial (trust and job satisfaction) mediators between budget participation and employee performance. Embedded employees perform better and having them participating and engaged with the budgetary goals is a way to strengthen their commitment, making employees feel more valued and getting the best from them. Moreover, when one considers the indirect role of the variables on the relationship between budget participation and employee performance, aside from budget goal commitment, trust emerged as having a more important role than satisfaction. This suggests that employees participating in the budget make them feel trusted and, in turn, retribute the faith set in them by the organization and exceed job expectations. Likewise, job satisfaction has an important meaning for both employees and organizations meeting the popular notion that a satisfied employee is a productive employee.

## 7. Conclusions and research limitations

### 7.1 Managerial implications

Cost controlling and forecasting are crucial for companies to ensure their survival in the competitive and unpredictable real estate market. It is thus important to develop provisional budgets. Considering that participation in the budget results in improvements in performance, it is important to encourage the involvement of the employees in budget development activities in the real estate and obtain their agreement on the goals to be achieved.

Job satisfaction and trust emerged as relevant variables for increasing the level of real estate employees' performance. Similarly, budget goal commitment and performance. Happiness in the workplace should be a managerial objective. This can be done by encouraging a positive organizational culture and building the company's social capital, which is likely to create a good working environment from a relational perspective. It is also important to grant some degree of autonomy to employees to perform their tasks and to recognize their work. The implementation of these measures leads to a greater identification with the company values, greater trust and better performance.

Overall, real estate managers should promote the involvement of their staff and employees in budgeting processes as this allows them to feel they are an active part of the company and supports them in the establishment of objectives, which in the case they feel committed to, leads to higher performance.

### *7.2 Limitations and future research directions*

Some limitations and future avenues of research can be pointed out. Considering only one industry was examined, the results should not be generalizable to organizations that differ significantly from the featured industry. The use of the survey carries other limitations, e.g. the use of self-reported measures and a lack of tight control over who answers the questionnaire.

Regarding future research opportunities, other variables can be explored as mediators, e.g. the role of employees' motivation, the company's reward system or the role of market uncertainty in the relationship between budget participation and performance. Budget slack is still a relatively underexplored construct. In this sense, new studies could focus on extending this dimension and on differentiating how the various budget goals (e.g. easy, medium, difficult) interact with budget goal commitment and with the organizations' reward system to influence employee performance.

### **References**

- Argyris, C. (1952), *The Impact of Budgets on People*, Controllership foundation, New York.
- Blumberg, M. and Pringle, C. (1982), "The missing opportunity in organizational research: some implications for a theory of work performance", *Academy of Management Review*, Vol. 7 No. 4, pp. 560-569.
- Cappelli, P. (2008), *Talent on Demand: Managing Talent in an Uncertain Age*, Harvard Business School Press, Boston, MA.
- Cheung, G. and Lau, R. (2008), "Testing mediation and suppression effects of latent variables: bootstrapping with structural equation models", *Organizational Research Methods*, Vol. 11 No. 2, pp. 296-325.
- Chong, V. and Chong, K. (2002), "Budget goal commitment and informational effects of budget participation on performance: a structural equation modeling approach", *Behavioral Research in Accounting*, Vol. 14 No. 1, pp. 65-86.
- Chong, V. and Johnson, D. (2007), "Testing a model of the antecedents and consequences of budgetary participation on job performance", *Accounting and Business Research*, Vol. 37 No. 1, pp. 3-19.
- Chong, V., Eggleton, I. and Leong, M. (2006), "The multiple roles of participative budgeting on job performance", *Advances in Accounting*, Vol. 22, pp. 67-95.
- Cook, J. and Wall, T. (1980), "New work attitude measures of trust, organizational commitment and personal need non-fulfilment", *Journal of Occupational Psychology*, Vol. 53 No. 1, pp. 39-52.
- Cyert, R. and March, J. (1963), *A Behavioural Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ.
- De Baerdemaeker, J. and Bruggeman, W. (2015), "The impact of participation in strategic planning on managers' creation of budgetary slack: the mediating role of autonomous motivation and affective organisational commitment", *Management Accounting Research*, Vol. 29, pp. 1-12.

- Derfuss, K. (2009), "The relationship of budgetary participation and reliance on accounting performance measures with individual-level consequent variables: a meta-analysis", *European Accounting Review*, Vol. 18 No. 2, pp. 203-239.
- Derfuss, K. (2016), "Reconsidering the participative budgeting–performance relation: a meta-analysis regarding the impact of level of analysis, sample selection, measurement and industry influences", *The British Accounting Review*, Vol. 48 No. 1, pp. 17-37.
- Diamantidis, A. and Chatzoglou, P. (2019), "Factors affecting employee performance: an empirical approach", *International Journal of Productivity and Performance Management*, Vol. 68 No. 1, pp. 171-193.
- Duan, W., Li, H., Sun, J. and Yang, G. (2022), "Standardization of the strategy translation process, procedural fairness in budgeting and firm performance", *China Journal of Accounting Research*, Vol. 15 No. 3, 100254, doi: [10.1016/j.cjar.2022.100254](https://doi.org/10.1016/j.cjar.2022.100254).
- Dunk, A. (1993), "The effect of budget emphasis and information asymmetry on the relation between budgetary participation and slack", *The Accounting Review*, Vol. 68 No. 2, pp. 400-410.
- Gross, M. and Żróbek, R. (2015), "Good governance in some public real estate management systems", *Land Use Policy*, Vol. 49, pp. 352-364.
- Hair, J., Black, W., Babin, B. and Anderson, R. (2010), *Multivariate Data Analysis*, 7th ed., Prentice-Hall, Upper Saddle River.
- Hartmann, F. (2000), "The appropriateness of RAPM: toward the further development of theory", *Accounting, Organizations and Society*, Vol. 25 Nos 4-5, pp. 451-482.
- Horn gren, C., Datar, S. and Rajan, M. (2018), *Cost Accounting: A Managerial Emphasis*, 16th ed., Pearson, Upper Saddle River, NJ.
- Kazaz, A. and Acikara, T. (2015), "Comparison of labor productivity perspectives of project managers and craft workers in Turkish construction industry", *Procedia Computer Science*, Vol. 64, pp. 491-496.
- Kramer, R. (1999), "Trust and distrust in organizations: emerging perspectives, enduring questions", *Annual Review of Psychology*, Vol. 50 No. 1, pp. 569-598.
- Leach-López, M., Stammerjohan, W. and McNair, F. (2008), "Effects of budgetary participation conflict on job performance of Mexican and US managers", *Advances in Accounting*, Vol. 24 No. 1, pp. 49-64.
- Leach-López, M., Stammerjohan, W. and Lee, K. (2009), "Budget participation and job performance of South Korean managers mediated by job satisfaction and job relevant information", *Management Research News*, Vol. 32 No. 3, pp. 220-238.
- Leavins, J., Karim, K. and Siegel, P. (1997), "An empirical investigation of factors contributing to budgetary slack", *Allied Academies International Conference. Academy of Accounting and Financial Studies*, Jordan Whitney.
- Locke, E. (1968), "Toward a theory of task motivation and incentives", *Organizational Behavior and Human Performance*, Vol. 3 No. 2, pp. 157-189.
- Locke, E. (1976), "The nature and causes of job satisfaction", in Dunnette, M.D. (Ed.), *Handbook of Industrial and Organizational Psychology*, Rand McNally, Chicago, pp. 1297-1349.
- Locke, E. and Latham, G. (1990), *A Theory of Goal Setting and Task Performance*, Prentice-Hall, Englewood Cliffs, NJ.
- Locke, E., Shaw, K., Saari, L. and Latham, G. (1981), "Goal setting and task performance: 1969-1980", *Psychological Bulletin*, Vol. 90 No. 1, p. 125.
- Lukka, K. (1988), "Budgetary biasing in organizations: theoretical framework and empirical evidence", *Accounting, Organization and Society*, Vol. 13 No. 3, pp. 281-301.
- Maiga, A. and Jacobs, F. (2007), "Budget participations influence on budget slack: the role of fairness perceptions, trust and goal commitment", *Journal of Applied Management Accounting Research*, Vol. 5 No. 1, pp. 39-58.

- Meyer, J., Stanley, D., Herscovitch, L. and Topolnytsky, L. (2002), "Affective, continuance and normative commitment to the organization: a meta-analysis of antecedents, correlates and consequences", *Journal of Vocational Behavior*, Vol. 61 No. 1, pp. 20-52.
- Milani, K. (1975), "The relationship of participation in budget-setting to industrial supervisor performance and attitudes: a field study", *The Accounting Review*, Vol. 50 No. 2, pp. 274-284.
- Motowildo, S.J., Borman, W.C. and Schmit, M.J. (1997), "A theory of individual differences in task and contextual performance", *Human Performance*, Vol. 10 No. 2, pp. 71-83, doi: [10.1207/s15327043hup1002\\_1](https://doi.org/10.1207/s15327043hup1002_1).
- Mowen, M., Hansen, D. and Heitger, D. (2018), *Cornerstones of Managerial Accounting*, 7th ed., Cengage Learning, New York.
- Ning, L. and Jin, Y. (2009), "The effects of trust climate on individual performance", *Frontiers of Business Research in China*, Vol. 3 No. 1, pp. 27-49.
- Nouri, H. and Parker, R. (1998), "The relationship between budget participation and job performance: the roles of budget adequacy and organizational commitment", *Accounting, Organizations and Society*, Vol. 23 Nos 5-6, pp. 467-483.
- Pattnaik, S. and Pattnaik, S. (2020), "Exploring employee performance dimensionality in Indian public sector units", *International Journal of Productivity and Performance Management*, Vol. 70 No. 3, pp. 657-674.
- Pereira, L., Ferreira, S. and Santos, J. (2020), "The main causes of risk in residential real estate projects", *Journal of General Management*, Vol. 45 No. 3, pp. 152-162.
- Podsakoff, P., Todor, W. and Skov, R. (1982), "Effects of leader contingent and noncontingent reward and punishment behaviors on subordinate performance and satisfaction", *Academy of Management Journal*, Vol. 25 No. 4, pp. 810-821.
- Podsakoff, P., MacKenzie, S. and Lee, J. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Rodrigues, P. (2022), *The Real Estate Market in Portugal: Prices, Rents, Tourism and Accessibility*, Fundação Francisco Manuel dos Santos, Foundation Series, Lisboa, available at: <https://www.ffms.pt/FileDownload/0f3edf7f-a37f-4796-a909-0aaba5abb71d/o-mercado-imobiliario-em-portugal>
- Rousseau, D., Sitkin, S., Burt, R. and Camerer, C. (1998), "Not so different after all: a cross-discipline view of trust", *Academy of Management Review*, Vol. 23 No. 3, pp. 393-404.
- Sako, M. and Helper, S. (1998), "Determinants of trust in supplier relations: evidence from the automotive industry in Japan and the United States", *Journal of Economic Behavior and Organization*, Vol. 34 No. 3, pp. 387-417.
- Sandalgaard, N. (2012), "Uncertainty and budgets: an empirical investigation", *Baltic Journal of Management*, Vol. 7 No. 4, pp. 397-415.
- Scarpello, V. and Vandenberg, R. (1992), "Generalizing the importance of occupational and career views to job satisfaction attitudes", *Journal of Organizational Behavior*, Vol. 13 No. 2, pp. 125-140.
- Shields, J. and Shields, M. (1998), "Antecedents of participative budgeting", *Accounting, Organizations and Society*, Vol. 23 No. 1, pp. 49-76.
- Shields, M. and Young, S. (1993), "Antecedents and consequences of participative budgeting: evidence on the effects of asymmetrical information", *Journal of Management Accounting Research*, Vol. 5 No. 1, pp. 265-280.
- Silva, P., Moreira, A.C. and Mota, J. (2022), "Employees' perception of corporate social responsibility and performance: the mediating roles of job satisfaction, organizational commitment and organizational trust", *Journal of Strategy and Management*, Vol. ahead-of-print No. ahead-of-print, doi: [10.1108/JSMA-10-2021-0213](https://doi.org/10.1108/JSMA-10-2021-0213).

- 
- Sprinkle, G., Williamson, M. and Upton, D. (2008), "The effort and risk-taking effects of budget-based contracts", *Accounting, Organizations and Society*, Vol. 33 Nos 4/5, pp. 436-452.
- Taba, M. (2018), "Mediating effect of work performance and organizational commitment in the relationship between reward system and employees' work satisfaction", *Journal of Management Development*, Vol. 37 No. 1, pp. 65-75.
- Tanriverdi, H. (2008), "Workers' job satisfaction and organizational commitment: mediator variable relationships of organizational commitment factors", *Journal of American Academy of Business*, Vol. 14 No. 1, pp. 152-163.
- Tran, L., Hien, H. and Baker, J. (2020), "When supportive workplaces positively help work performance", *Baltic Journal of Management*, Vol. 16 No. 2, pp. 208-277.
- Wagner, J., Petera, P., Popesko, B., Novák, P. and Šafir, K. (2021), "Usefulness of the budget: the mediating effect of participative budgeting and budget-based evaluation and rewarding", *Baltic Journal of Management*, Vol. 16 No. 4, pp. 602-620.
- Winata, L. and Mia, L. (2005), "Information technology and the performance effect of managers' participation in budgeting: evidence from the hotel industry", *International Journal of Hospitality Management*, Vol. 24 No. 1, pp. 21-39.
- Young, S. (1985), "Participative budgeting: the effects of risk aversion and asymmetric information on budgetary slack", *Journal of Accounting Research*, Vol. 23 No. 2, pp. 829-842.
- Yuen, D., Law, P. and Tayles, M. (2015), "Exploring budgetary slack: the influence of organizational commitment and job-related tension", *Corporate Ownership and Control*, Vol. 12 No. 2, pp. 577-658.
- Yuliansyah, Y., Triwacananingrum, W., Mohd-Sanusi, Z. and Said, J. (2019), "Enhancing the task performance of bank employees: relevance of trust, self-efficacy and budget participation", *International Journal of Business Excellence*, Vol. 17 No. 4, pp. 397-413.

**Corresponding author**

Pedro Silva can be contacted at: [pedrosilva@fe.uc.pt](mailto:pedrosilva@fe.uc.pt)