

Goal-setting participation, experiencing tensions and budgetary performance: exploring the moderation role of paradox mindset

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Abstract

Purpose – Building on Goal-Setting and Paradox Theory, this study aims to examine the role of perceived tensions and paradox mindset in the relationship between participation in budget goal setting and budgetary performance in hybrid organizations.

Design/methodology/approach – A cross-sectional survey among 72 budget holders working in a hospital was conducted; partial least squares structural equation modeling technique was used to assess the measurement model and to test the research hypotheses.

Findings – The findings reveal that participation in goal setting is negatively associated with experiencing tensions while the relationship between experiencing tensions and budgetary performance was not significant. Moreover, paradox mindset positively moderates the relationship between experiencing tensions and budgetary performance.

Originality/value – This study focuses on the interplay between organizational and individual responses to institutional tensions and examines the role of paradoxical thinking in a participative budget goal-setting environment in influencing budgetary performance. Given the practical and theoretical significance of this issue, this study enhances the understanding of the complex relationship between budgeting practices and human behavior.

Keywords Participation in goal setting, Paradox mindset, Perceived tensions, Budgetary performance, Hospital, Budget, Hybrid manager

Paper type Research paper

1. Introduction

Management Control Systems (MCS) play a significant role in shaping employee behavior by aligning individual actions with organizational goals. Research, predominantly based on Goal Setting Theory (Locke and Latham, 2002), has demonstrated that participation in budget goal setting fosters information sharing and enhances coordination (e.g. Agbejule and



Saarikoski, 2006; Lau and Tan, 2006; Parker and Kyj, 2006; Chong and Johnson, 2007). It also promotes organizational commitment (e.g. Nouri and Parker, 1998; Wentzel, 2002), trust (e.g. Lau and Buckland, 2001), role clarity (e.g. Chenhall and Brownell, 1998; Chong *et al.*, 2006), job satisfaction (e.g. Lau and Chong, 2002; Chong *et al.*, 2006) and enhances managerial performance (e.g. Merchant, 1981; Brownell, 1982; Kren, 1992; Lau and Buckland, 2001; Chong, 2002; Chong and Chong, 2002; Chong and Leung Tak-Wing, 2003; Chong *et al.*, 2006; for a full review, see Derfuss, 2009, 2016). However, limited research has been conducted on the role of MCS in influencing employees' behavior in context of multiple values and logics, such as hybrid organizations (Ewert and Kurunmäki, 2004; Croft *et al.*, 2015; Haigh *et al.*, 2015; Turner *et al.*, 2016; Chenhall *et al.*, 2017; Grossi *et al.*, 2020).

In hybrid organizations, MCS navigate more complex dynamics compared to traditional organizations. This complexity arises from the need to balance competing objectives and stakeholder expectations (Chenhall *et al.*, 2017; Grossi *et al.*, 2020; Campanale *et al.*, 2021). When conflicting logics, such as social and financial priorities, are simultaneously central and perceived as incompatible (Besharov and Smith, 2014), tensions between financial and social goals become a critical challenge, potentially undermining long-term organizational performance. For instance, the devolution of financial accountability and budgetary responsibilities to professionals can amplify the salience of professional identity, prompting hybrid managers to prioritize the professional domain. This inclination may lead managers to perceive tensions as dilemmas – mutually exclusive and irreconcilable – thereby fostering trade-offs, sequential decision-making or the compartmentalization of conflicting demands (Smith *et al.*, 2017a, 2017b; Begkos and Antonopoulou, 2022a, 2022b). Such approaches risk compromising budgetary performance and, ultimately, organizational effectiveness, which depends on the simultaneous achievement of both financial and social objectives.

Scholars have examined the nature of competing demands and goals in hybrid organizations, the responses of organizational members and the related implications through different theoretical lenses (for a review, see Smith *et al.*, 2013a, 2013b). For instance, literature grounded in Institutional Theory suggests organizational solutions to resolve tensions, such as separation or blending (Kraatz and Block, 2008; Jarzabkowski *et al.*, 2009a, 2009b; Reay and Hinings, 2009; Pache and Santos, 2010; Battilana and Dorado, 2010; Greenwood *et al.*, 2011; Tracey *et al.*, 2011; Dalpiaz *et al.*, 2016). However, when tensions are both central and perceived as incompatible by employees, organizational practices and solutions designed to resolve these tensions, may have a limited impact.

Paradox Theory represents a promising, relatively new theoretical framework that helps to understand and manage the complex and often contradictory demands faced by organizations and individuals. According to Paradox Theory, paradoxes are inherent in systems or socially constructed and can be understood as “contradictory yet interrelated elements that exist simultaneously and persist over time” (Smith and Lewis, 2011, p. 382). Unlike other theories, such as Institutional Theory, Paradox Theory posits that the relationship between opposing forces cannot be resolved but can be accepted and accommodated. At the individual level, the concept of a paradox mindset has gained attention in literature as a way to understand how employees effectively handle tensions. A paradox mindset is defined as “the extent to which one is accepting of and energized by tensions” (Miron-Spektor *et al.*, 2018, p. 26). Individuals with this mindset view tensions as paradoxes, rather than dilemmas, and are more likely to embrace and feel motivated by these tensions, which can enhance job performance and foster innovation (Miron-Spektor *et al.*, 2011; Keller *et al.*, 2017; Zheng *et al.*, 2018; Liu *et al.*, 2020a, 2020b; Liu and Pak, 2023).

Research in management accounting regarding the interplay between organizational and individual responses to institutional tension is still in its early stages. To the best of our knowledge, there is a scarcity of studies that have examined the role of paradox mindset in the relationship between participation in goal setting and budgetary performance in hybrid organizations. Contributing to this emerging field, we build on Goal Setting Theory and Paradox Theory. In line with Goal Setting Theory, we posit that participation in goal setting decreases perceived tensions, which then influence budgetary performance. In addition, building on Paradox theory, we focus on the individual differences in budget goals attainment drawing on the concept of paradox mindset and predict that hybrid professionals' ability to think paradoxically is an important individual-level mechanism that accounts for higher budgetary performance. The research was conducted in the Italian public health-care sector, where financial accountability was devolved by decree (D. Lgs. 502/92) to medical doctors as part of the New Public Management (NPM) reforms (e.g. [Hood, 1995](#); [Lapsley and Wright, 2004](#); [Lapsley, 2009](#); [Hoque and Adams, 2011](#)). In this context, senior medical doctors hold budgetary responsibilities, which require them to pursue both high-quality health care and cost efficiency. However, perceived tensions between social and financial objectives can undermine budgetary performance. Although participation in goal setting can reduce perceived tensions between clinical and financial goals, individuals with a paradox mindset embrace a "both/and" thinking approach, enabling them to simultaneously hold two seemingly opposing ideas. This mindset fosters the generation of new solutions that would not typically arise from conventional thinking, thereby contributing to higher budgetary performance.

The results of the tested model, based on a survey of 72 budget holders working in a public hospital, show that participation in goal setting is negatively associated with experiencing tensions. However, the relationship between experiencing tensions and budgetary performance was not significant. Moreover, paradox mindset positively moderates the relationship between experiencing tensions and budgetary performance.

To date, limited studies in behavioral management accounting using a multitheoretical framework have explicitly examined the role of tensions in the relationship between participative goal setting and budgetary performance. Moreover, existing research has yet to explore how paradoxical thinking shapes the effect of tensions on budgetary performance within a hybrid setting. By addressing these gaps, this study provides a novel contribution to management accounting research and advances both Goal-Setting Theory and Paradox Theory.

First, this research extends behavioral management accounting studies ([Covaleski et al., 2003](#)), which primarily draws on the core principles of Goal-Setting Theory. While previous studies have acknowledged that the impact of budgetary participation on managers' attitudes and behaviors may be moderated or mediated by psychological variables (e.g. [Covaleski et al., 2003](#); [Birnberg et al., 2006](#); [Lau and Tan, 2006](#); [Wibbeke and Lachmann, 2020](#)), they have overlooked the specific role of paradox mindset and the experience of tensions between competing objectives. By incorporating these underexplored variables into the budgetary participation-performance link, this study offers a fresh perspective on the cognitive and perceptual dynamics underpinning budgeting practices and results in hybrid organizations.

Second, in response to [Miron-Spektor et al.'s \(2018\)](#) call for a more nuanced investigation into employees' paradoxical cognition and its behavioral outcomes, this study contributes to the growing interdisciplinary dialogue on paradox theory ([Bednarek et al., 2021](#)). Unlike previous research, which has primarily focused on paradox mindset in corporate settings, this study examines its role in a budget-setting environment in a public organization, demonstrating how paradox mindset enables hybrid managers to navigate

competing demands and develop innovative responses to tensions potentially affecting their performance.

Finally, this research advances public sector literature by shedding light on the implications of NPM-related practices. As highlighted by Pollitt (2012), there remains a critical need for studies examining the real-world consequences of NPM-driven reforms. By situating paradox mindset and budgetary participation within a hybrid governance context, such as public health care, this study provides empirical insights into how hybrid managers reconcile institutional tensions while striving for effective budgetary performance.

The remainder of this paper is divided the following sections. Section 2 presents the theoretical background and Section 3 the research hypotheses; Section 4 presents the research method; Section 5 describes the results; Section 6 presents the discussion of the findings; Section 7 concludes the paper; and Section 8 presents the limitations of the study and suggestions for future research.

2. Theoretical background: paradox and goal-setting theory

Paradoxes encompass elements that, while seemingly logical in isolation, appear contradictory or paradoxical when considered together, necessitating responses that both acknowledge and manage these tensions concurrently. Interdependence is a key facet of paradoxes, referring to the interplay between these seemingly opposing elements. While these elements can be isolated, they are, as Lewis (2000, p. 761) notes, “two sides of the same coin”: “the more that members seek to pull the contradictions apart, to separate them so that they will not be experienced as contradictory, the more enmeshed they become in the self-referential binds of paradox” (Smith and Berg, 1987, p. 14). These tensions may emerge from a variety of sources, including competing organizational goals, conflicting stakeholder expectations or the delicate balance between stability and change.

Paradoxical tensions can be both inherent – existing within complex systems where competing demands and goals naturally arise - and socially constructed, created by the ways in which individuals perceive and interpret situations, particularly when individuals must adopt opposing yet coexisting roles and identities (Smith and Lewis, 2011). These inherent tensions can become more salient under certain circumstances, especially in contexts of resource scarcity, which intensify the awareness of conflicting demands (Smith and Lewis, 2011; Miron-Spektor *et al.*, 2018, 2022). When individuals face cognitive conflict between competing demands, their responses may be defensive. For instance, individuals may narrow their focus to factors within their immediate control, collaborating more closely with colleagues who share similar perspectives (Lewis and Smith, 2014, p. 135). Such defensive responses, driven by discomfort with dissonance, can perpetuate reinforcing vicious cycles of behavior that hinder performance (Sundaramurthy and Lewis, 2003; Tsoukas and Cunha, 2017).

Rather than avoiding or denying these tensions, organizational actors in paradoxical settings must work through them and even thrive in the face of such challenges. This approach to paradox requires individuals to embrace tensions, viewing conflicting elements not as contradictions but as complementary, allowing them to integrate these elements into a cohesive strategy. Such integration leads to enhanced individual and organizational performance (Murnighan and Conlon, 1991; Denison *et al.*, 1995; Cameron and Lavine, 2006; Tushman *et al.*, 2010; Smith and Lewis, 2011).

The capacity to recognize, accept and simultaneously navigate contradictory or opposing perspectives is a defining feature of the paradox mindset (Miron-Spektor *et al.*, 2011, 2015, 2018, 2022). This mindset is characterized by a tolerance for ambiguity, complexity and the coexistence of conflicting demands, rather than an effort to resolve or choose between them.

Psychologically, individuals with a paradox mindset are more comfortable with uncertainty and display greater resilience and adaptability. These individuals perceive contradictions not as problems to be resolved, but as opportunities for growth and innovation. The paradox mindset enables individuals to manage tensions without attempting to eliminate them. Rather than adhering to an “either/or” approach, those with a paradox mindset adopt a “both/and” mindset, allowing them to hold two seemingly contradictory ideas simultaneously, which fosters the generation of innovative solutions that would not typically emerge from conventional approaches.

Organizations play a pivotal role in assisting managers to embrace and navigate such tensions. For example, organizational research suggests that collaborative interventions and reflective practices during significant organizational changes can help managers understand and embrace tensions (Lüscher and Lewis, 2008). This role extends to the context of budgeting. Management accounting research has extensively drawn upon Goal-Setting Theory (Locke and Latham, 1990, 2002) to highlight the beneficial effects of participative budgeting (see for a review, Derfuss, 2009, 2016). Goal-Setting Theory posits that consciously set goals serve as a primary driver of employee motivation, directing attention, effort and persistence toward goal-relevant activities, while also promoting the development of strategies for goal achievement. In this context, participative budgeting – defined as “a process whereby subordinates are given the opportunity to get involved in, and have influence on, the budget-setting process” (Chong and Chong, 2002, p. 68) – is a critical organizational practice. It enables employees to comprehend and internalize organizational goals, facilitating knowledge exchange and ensuring that organizational efforts are coordinated to support the achievement of strategic objectives, ultimately leading to enhanced performance (see for a review, Derfuss, 2009, 2016).

However, research indicates that the effectiveness of participative processes in improving performance is contingent upon various factors, including task, organizational and individual variables (Kenis, 1979; Brownell, 1982; Shields and Shields, 1998; Libby and Lindsay, 2010). Locke *et al.* (1981) caution that “individuals can have subconscious conflicts or premises that subvert their conscious goals” (Locke *et al.*, 1981, p. 126). When individual values and demands conflict with organizational goals, cognitive processes are disrupted, influencing intentions and subsequent actions. Specifically, when individuals experience cognitive biases due to conflicting objectives, they tend to prioritize consistency over inconsistency (Smith and Tushman, 2005), leading them to favor one side of the conflict over the other (Birkinshaw and Gupta, 2013; Lin *et al.*, 2013; Bedford *et al.*, 2019).

Early research on the conflict between organizational and individual goals demonstrated that participative goal setting helps reduce tensions arising from the perceived conflict between personal and organizational objectives, thereby aligning the two (Kenis, 1979; Locke and Latham, 1990). More recent studies have expanded this framework to examine the effects of goal setting in the context of multiple organizational goals (Wentzel, 2002; Macinati and Rizzo, 2014; Macinati *et al.*, 2016). In such contexts, the simultaneous pursuit of conflicting goals can lead to dysfunctional outcomes if individuals perceive these tensions as dilemmas and attempt to resolve them. This often results in negative effects on both individual and organizational performance, especially when the processes involved in achieving these goals are seen as incompatible (Pintrich, 2000; Miron-Spektor and Beenen, 2015). For instance, Masuda *et al.* (2015) conducted an experiment examining the simultaneous pursuit of multiple learning and performance goals, finding a negative curvilinear relationship between total goal difficulty and performance, both for self-set and assigned goals.

3. Research hypotheses

Participation in goal-setting processes can significantly guide decision-making toward organizational success, particularly when multiple, seemingly conflicting goals are at play. As Latham (2004, p. 129) asserted, “when there are two or more goals, goal conflict may occur in the absence of employee participation in the process. Performance on both goals may suffer.” This scenario is particularly salient in health care, where medical managers are tasked with simultaneously pursuing high-quality care and cost containment objectives, which are essential to ensuring the accessibility, sustainability and effectiveness of the health-care system. These dual goals, when examined individually or within a social context, may appear as an absurd coexistence of opposites (Lewis, 2000). The tension between these two conflicting dimensions of organizational performance can be amplified by the medical managers’ professional identity and their need to reconcile these seemingly incompatible constructs. Typical responses to these and other conflicting demands often include feelings of threat, defensiveness and a tendency to prioritize one goal over the other (Lewis, 2000). Such tensions, when approached as dilemmas, often lead to dysfunctional responses as individuals seek to resolve the discomfort caused by conflicting demands. The cognitive dissonance arising from competing objectives can push medical managers toward the “medical side,” especially in resource-scarce environments, where the conflict between demands is magnified, triggering recognition of the tension (Smith and Lewis, 2011; Miron-Spektor *et al.*, 2018). Over time, such responses may become resistant to change.

Participation in budget goal-setting processes can aid in clarifying these goals and mitigating tensions by involving managers in the reconciliation process. Through participative goal setting, both hospital management representatives and medical managers are able to share values, demands and information, fostering greater acceptance of both financial and clinical objectives. The cognitive effects of participation serve to flatten the abstractions that often separate polarities by enabling individuals to better understand and critically engage with the underlying demands (Lewis, 2000, p. 764). By examining and reinterpreting the interconnections between multiple, sometimes opposing goals, actors can accommodate these conflicting elements, recognize synergies and reverse the cycle of reinforcing tensions (Lewis, 2000). Hence, we propose the following hypothesis:

- H1.* Participation in budget goal setting significantly reduces the perceived experiencing tensions between competing goals.

Cognitive conflicts arising from tensions between competing objectives can be particularly challenging. If these tensions are not actively embraced, individuals encountering contradictions in goals, ideas or emotions may experience negative consequences (Emmons and King, 1988; De Dreu and Nijstad, 2008; Boudreaux and Ozer, 2013; Schad *et al.*, 2016; Sleesman *et al.*, 2019). Given the human tendency to seek cognitive consistency and order (Festinger, 1957), managers may resort to counterproductive defense mechanisms (Schneider, 1990), such as favoring a preferred or more familiar position. Such tensions have been shown to “potentially impede sense-making, decision-making, and action” (Ingram *et al.*, 2016, p. 164), thereby hindering the execution of organizational tasks (e.g. Liu *et al.*, 2020a, 2020b; Liu and Pak, 2023) and ultimately compromising performance (Lewis, 2000; De Dreu and Weingart, 2003; Raza-Ullah, 2020). Moreover, prioritizing one side of competing demands inevitably amplifies the neglected side (Schad *et al.*, 2016). As a result, paradoxical tensions can overwhelm managers, impairing their analytical and strategic abilities. Research on paradoxes suggests that these dynamics may drive organizations into self-reinforcing negative cycles, ultimately reducing overall effectiveness and performance (Pradies *et al.*, 2020).

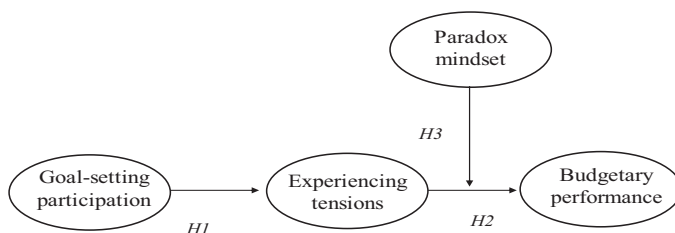
In a budgetary context, managers frequently face conflicting yet interdependent objectives, such as balancing cost containment with high-quality health care in public health systems. Under these conditions, paradoxical tensions can trigger a vicious cycle in which defensive reactions – such as prioritizing one goal at the expense of another – exacerbate the tension and hinder resolution (Schad *et al.*, 2016; Tsoukas and Cunha, 2017). Compared to other organizational settings, hybrid organizations often attach profound symbolic meanings to paradoxical choices, with one side of the paradox frequently perceived as a threat to professional identity. Consequently, defensive strategies such as denial or separation may be more pronounced. While avoiding tension may offer temporary psychological relief by fostering a sense of consistency and control (Tsoukas and Cunha, 2017), it ultimately limits managers' ability to engage with deeper organizational challenges and adapt existing practices to meet multiple objectives (Sundaramurthy and Lewis, 2003). As managers repeatedly favor one perspective over another, the unattended demands become increasingly urgent, fueling entrenched organizational conflicts (Schad *et al.*, 2016). In a budgetary setting, this dynamic can manifest as declining budgetary performance, with professional identity concerns further intensifying the paradox. Thus, a high level of experienced tension – resulting from managerial engagement with multiple conflicting budgetary goals – is likely to have a detrimental impact on budgetary performance. Accordingly, we propose the following hypothesis:

H2. Experiencing tensions significantly reduces budgetary performance.

Despite our postulation that experiencing tensions between multiple goals negatively impacts performance, research suggests that negative outcomes are less likely when individuals approach tensions with a paradox mindset. Previous studies have indicated that a higher paradox mindset is associated with positive work-related outcomes, such as improved in-role job performance and innovation (Miron-Spektor *et al.*, 2018), as well as enhanced innovation performance (Smith and Tushman, 2005) and work engagement (Yin, 2023). Individuals with a paradox mindset are also more likely to exhibit innovative behaviors (Liu *et al.*, 2020a) and greater commitment (Sleesman *et al.*, 2019). Accordingly, we further investigate whether and how paradox mindset influences the relationship between experienced tensions and performance. We posit that embracing the tension should allow medical managers to recognize the delicate balance and the dynamic relationship between efficiency and high-quality care, thus increasing budgetary performance. More specifically, we hypothesize that the negative effects of experiencing tensions on budgetary performance will be attenuated for individuals with a paradox mindset. Those with such a mindset do not prioritize one side of the conflict over the other; instead, they recognize how the two demands can complement each other (Miron-Spektor *et al.*, 2018, 2022), making decisions that leverage synergies and integrate opposing elements into new solutions, which may ultimately lead to superior outcomes (Lewis, 2000; Smith and Lewis, 2011; Leung *et al.*, 2018). Therefore, we propose the following hypothesis:

H3. Paradox mindset significantly moderates the relationship between perceived tensions and budgetary performance.

Figure 1 illustrates the theoretical model, which summarizes the relationships between goal-setting participation, experiencing tensions and budgetary performance. The model implies a moderation effect of paradox mindset in the relationship between perceived tensions and budgetary performance.



Source(s): Authors' own creation

Figure 1. The theoretical model

4. Research methodology

4.1 Data collection and survey design

The data collection process for this study used both a survey and archival data. A cross-sectional, Web-based questionnaire was used to gather information on the key variables of the model – goal-setting participation, experiencing tensions and paradox mindset – along with demographic and organizational data from respondents (e.g. gender, age, tenure, departmental affiliation and size), which served as control variables. Archival data, specifically internal budget variance reports, were analyzed to assess respondents' budgetary performance (for further details, see subsection 4.2).

The survey was administered to 80 budget holders working at a public hospital [1] in Italy. At the research site [2], each budget holder is a senior medical doctor who:

- is designated as a “cost center”;
- is allocated a budget for management and control purposes;
- bears financial responsibility for managerial decisions; and
- reports directly to the General Director of the organization.

The survey was conducted online, following the procedures outlined by Dillman *et al.* (2014) [3].

Out of the 80 questionnaires distributed, 72 were returned, resulting in a response rate of 90%. All returned questionnaires were fully completed and included in the analysis. Despite the high response rate, non-response bias was tested using an independent samples *t*-test. The results revealed no significant differences across any of the study variables, thereby confirming the absence of substantial non-response bias in the sample.

4.2 Variable measurement

We used well-established multi-item instruments to measure goal-setting participation, experiencing tensions and paradox mindset. All multi-item measures were presented on a seven-point Likert-type scale, with response options ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). The specific details of each variable's measurement are outlined below, and the wording of the items used in the questionnaire is provided in Appendix 1.

Goal-setting participation was measured using the two-item scale developed by Locke and Latham (1984, 1990) and Milani (1975), and previously employed by Sholihin *et al.* (2011).

Experiencing tensions and paradox mindset were assessed using two separate scales developed and validated by [Miron-Spektor et al. \(2018\)](#). Specifically, experiencing tensions was measured using a seven-item scale, whereas the paradox mindset was assessed using a nine-item scale.

Budgetary performance was operationalized using a results-oriented objective criterion ([Podsakoff et al., 2003](#)). We retrieved the global performance index (ranging from 0 to 100) from internal budget variance reports, which summarizes the percentage of budget targets achieved for each budget holder (see for similar use: [Macinati et al., 2022](#)).

To control for the effects of other factors that the literature reports as having the potential to influence the study’s dependent variables, we included as control variables: age, gender, tenure, size and departmental affiliation (see, e.g. for similar use: [Chong et al., 2023](#); [Miron-Spektor et al., 2018, 2022](#); [Macinati et al., 2022](#); [Zhang and Bartol, 2010](#); [Cunningham et al., 2012](#)). Specifically, tenure was measured in terms of years of employment in the organization (e.g. [Ng and Feldman, 2013](#)); size was measured by the natural logarithm of the number of full-time employees under each budget holder’s responsibility (e.g. [Maiga et al., 2014](#)); departmental affiliation was measured using two dummy variables – “Dep. 1” and “Dep. 2” – with “Dep. 3” serving as the reference category (e.g. [Boemelburg et al., 2023](#)), and gender was included as a dummy variable, with male respondents serving as the reference category.

[Table 1](#) presents the descriptive statistics and frequencies for all variables considered in the model.

4.3 Common method bias

Given that the data used in this study were collected from a single source, with the same questionnaire administered at a single point in time using self-reported instruments, common method bias (CMB) represents a potential source of measurement error. In accordance with established guidelines ([Podsakoff et al., 2003](#); [Jordan and Troth, 2020](#)), both procedural and statistical strategies were used to mitigate the potential impact of CMB. In terms of procedural strategies, we followed the recommendations of [Podsakoff and Organ \(1986\)](#) to

Table 1. Descriptive statistics (*n* = 72)

Section A: descriptive statistics for multi-items measures and continuous variables		Mean	SD	Theoretical range	Actual range
Goal-setting participation		4,2	1.5	1–7	1–7
Paradox mindset		4.6	1.1	1–7	2–7
Experiencing tensions		5,6	1	1–7	3–7
Budgetary performance		70	11	1–100	60–100
Age (years)		57	5.2	NA	40–67
Tenure (years)		7	3,7	NA	1–24
Size (ln n. employees)		2,8	0.69	NA	1.6–3.9
Section B: frequencies for dummy variables				Frequency	(%)
Gender = 1 (Male)				50	69
Gender = 0 (Female)				22	31
Budget holders in Dep.1				29	40
Budget holders in Dep.2				34	47
Budget holders in Dep.3				9	13
Source(s): Authors’ own creation					

design the survey in a way that minimizes CMB and prevents the reporting of biased responses. Specifically, participants were provided with an information cover sheet that clearly outlined the study's purpose; to enhance the clarity of the scale items, we used a seven-point Likert-type scale anchor for all items; the items within each scale were randomized to reduce the likelihood of respondents making connections between their responses and the underlying constructs (Straub *et al.*, 2004); and respondent anonymity was ensured to mitigate the risk of socially desirable or dishonest responses. In addition, to further minimize CMB, we incorporated measures for both dependent and independent variables from multiple sources, specifically combining survey responses and archival data for budgetary performance (Speklé and Widener, 2018). From a statistical perspective, two tests were conducted to assess the potential presence of CMB in the data: Harman's (1976) one-factor test and the lateral collinearity test (Kock, 2015). According to the first test, the results indicated that CMB was not a concern, as the total variance extracted by a single factor (43.09%) did not exceed the recommended threshold of 50% (Podsakoff *et al.*, 2003). For the second test, we conducted a full collinearity assessment following Kock's (2015) procedure, analyzing the variance inflation factors (VIFs) for all inner model variables. Because all VIFs were below the recommended threshold of 3.3 (see Table A1 in Appendix 2), this confirms that CMB did not pose a threat to the validity of the study's findings (Kock, 2015). Taken together, these results suggest that CMB was not a potential concern for our model (Kock, 2020).

4.4 Structural equation modeling

We used partial least squares structural equation modeling (PLS-SEM) to assess the measurement and perform the structural model. We selected a PLS-SEM approach over a covariance-based SEM (CB-SEM) approach due to its advantages, including the absence of distributional assumptions on the data and its effectiveness in making predictions with small sample sizes [4] (Hair *et al.*, 2020; Sarstedt *et al.*, 2019). The decision to use PLS-SEM was further supported by its suitability for explaining causal-predictive relationships in complex structural models that involve numerous constructs, indicators and relationships (e.g. Hair *et al.*, 2019, 2020). In addition, PLS-SEM provides more accurate estimates of moderation effects by accounting for errors that may otherwise attenuate estimated relationships, thus enhancing the validation of theoretical models (Henseler and Fassott, 2010; Sarstedt *et al.*, 2019). This approach is particularly well-suited for studies in the early stages of theory testing, such as paradox theory, where the analysis context is exploratory and limited confirmed knowledge is available (Hair *et al.*, 2021). The PLS-SEM output includes both the measurement model and the structural model, which are estimated simultaneously but interpreted in two distinct stages, as detailed in the following sections. For the analysis, we used Smart-PLS 4.1.0.6 software (Richter *et al.*, 2022; Ringle *et al.*, 2024). PLS-SEM relies on bootstrapping for significance testing (Henseler *et al.*, 2009) and in line with the recommendations of Hair *et al.* (2019;2020;2021), all calculations were based on 5,000 bootstrap resamples.

5. Results

5.1 Measurement model

In the first stage of the analyses, the PLS measurement model out was examined to check the properties of the reflective scales included in the measurement model to assess their reliability, convergent and discriminant validity. As shown in Table A2 in Appendix 2, most item loadings were larger or very close to the cut-off value of 0.708 and significant at 0.000 level, demonstrating satisfactory indicator reliability [5] (Hair *et al.*, 2020, 2021). Given that

all the composite reliability (CR) scores and Cronbach’s alphas values reported in Table 2 exceeded their cut off value of 0.7, internal consistency of the scales was confirmed. Convergent validity on the construct level was established by the high values of average variance extracted (AVE) that complied with the threshold requirement ($AVE > 0.50$) (see Table 2) (Chin, 1998). Assurance of the constructs’ distinctiveness was provided by the values of the heterotrait–monotrait (HTMT) ratio, which were below the threshold of 0.85, and the bootstrapped confidence intervals do not contain the value one (Table 3) (Henseler *et al.*, 2015). As an alternative and more conservative reflective constructs’ dissimilarity test we also applied the Fornell–Larcker criterion. Table 2 reports that the square roots of the AVEs (diagonal) were all greater than the respective correlations between constructs, thus supporting discriminant validity [6] (Fornell and Larcker, 1981). Therefore, our measurement model exhibits the sound reliability and validity necessary for further testing of our research hypotheses. Table 4 reports the full latent variable correlations between the validated constructs and the other variables included in the model.

5.2 Structural model

In the second stage of the analysis, considering the satisfactory evaluation of the quality of the reflective scales included in the measurement model, the PLS structural model output was examined to test the hypotheses. Before assessing the structural model, we ensured that collinearity was not an issue in our data set by analyzing the collinearity diagnostics. Because all VIFs values for the precursor constructs were below the cut-off threshold of 5 (Hair *et al.*, 2019), this suggests that collinearity does not threaten the robustness of the study’s findings. Next, as recommended by Hair *et al.* (2019), the PLS structural model output was assessed

Table 2. Composite reliability (CR), Cronbach’s alpha, average variance extracted (AVE) and interconstruct correlations with square roots of AVEs shown in diagonal (bold-faced) ($n = 72$)

	CR	Cronbach’s alpha	AVE	GSP	ET	PM
Goal-setting participation (GSP)	0.927	0.844	0.865	<i>0.930</i>		
Experiencing tensions (ET)	0.920	0.899	0.624	−0.353**	<i>0.790</i>	
Paradox mindset (PM)	0.911	0.890	0.536	−0.494***	0.617***	<i>0.732</i>

Note(s): * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed)

Source(s): Authors’ own creation

Table 3. Heterotrait–monotrait (HTMT) ratios and confidence intervals*(CI) ($n = 72$)

	GSP	ET	PM
Goal-setting participation (GSP)	–		
Experiencing tensions (ET)	0.397 CI = 5% (0.206) – 95% (0.597)	–	
Paradox mindset (PM)	0.566 CI = 5% (0.433) – 95% (0.705)	0.797 CI = 5% (0.666) – 95% 0.907)	–

Note(s): **CI for HTMT ratios estimated with 10,000 bootstrap samples (one-tailed)

Source(s): Authors’ own creation

Table 4. Full latent variables correlations matrix between validated constructs and all control variables included in the model ($n = 72$)

	GSP	ET	PM	BP	Age	Gender	Tenure	Size	Dep_1
Goal-setting participation (GSP)									
Experiencing tensions (ET)	-0.353**								
Paradox mindset (PM)	-0.494***	0.617***							
Budgetary performance (BP)	0.272**	0.468***	0.613***						
Age	0.123	-0.029	-0.020	0.088					
Gender ⁺	-0.051	-0.131	-0.091	0.047	-0.014				
Tenure	0.055	-0.032	0.024	0.069	0.351**	-0.232**			
Size	0.105	0.068	0.195*	0.095	0.139	-0.049	0.040		
Dep_1 ⁺⁺	0.116	-0.022	-0.042	-0.038	0.152	-0.218*	-0.146	0.210*	
Dep_2 ⁺⁺	0.095	-0.084	-0.043	-0.022	0.067	-0.023	0.118	0.043	-0.358**

Note(s): * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (using a two-tailed test). ⁺Male is the reference category.

⁺⁺Dep 3 is the reference category. ⁺ Dep 3 reference category

Source(s): Authors' own creation

using the coefficient of determination (R^2), the blindfolding-based cross-validated redundancy measure (Q^2) and the statistical significance and relevance of the path coefficients. In particular, because the objective of PLS is to maximize explained variance rather than model fit, the overall incidence of significant relationships between constructs and the explained variance of the dependent variables (i.e. the R^2 measures) was used to evaluate the PLS model instead of traditional goodness-of-fit measures (Chin, 1998; Hair *et al.*, 2019). Another assessment of the structural model involved evaluating its predictive capability, as indicated by Stone-Geisser's Q^2 measure of predictive relevance. The R^2 and Q^2 values for the study's endogenous variables are reported in Table 5. Overall, the results suggest that the model exhibits good predictive power. Specifically, the R^2 values indicate that 17% of experiencing tension and 49% of budgetary performance are explained by the model, supporting the model's in-sample explanatory power (Hair *et al.*, 2019). In addition, the Q^2 values – obtained through the blindfolding procedure based on the cross-validated redundancy approach – were greater than zero for all endogenous variables, supporting the predictive relevance of the corresponding explanatory variables. Table 6 reports the model's path coefficients and their significance. In particular, the results suggest that goal-setting participation negatively influences experiencing tensions ($\beta = -0.35$, $p = 0.002$), supporting *H1*. In contrast, the relationship between experiencing tensions and budgetary performance was not statistically significant ($\beta = 0.21$, $p = 0.10$), leading to the rejection of *H2*. Finally, the

Table 5. Measures of predictive power and relevance ($n = 72$)

Endogenous variables:	R^2	Q^{2*}
Experiencing tensions	0.17	0.10
Budgetary performance	0.49	0.37

Note(s): * Q^2 values were assessed by blindfolding procedures with an omission distance of $D = 10$

Source(s): Authors' own creation

Table 6. PLS structural model results: path coefficients, standard deviation (SD), *p*-values and *f*² (*n* = 72)

From:	Paths:	to:	Hypothesis/ control	Path coefficient	SD	<i>p</i> -Value	<i>f</i> ²
Goal-setting participation	→	Experiencing tensions	H1	-0.359	0.127	0.002**	0.148
Experiencing tensions	→	Budgetary performance	H2	0.210	0.146	0.101	0.04
Paradox mindset * Experiencing tensions	→	Budgetary performance	H3	0.264	0.074	0.000***	0.178
Paradox mindset	→	Budgetary performance	Control	0.577	0.113	0.000***	0.302
Age	→	Experiencing tensions	Control	0.048	0.088	0.719	0.002
Gender ⁺	→	Experiencing tensions	Control	-0.411	0.132	0.108	0.037
Tenure	→	Experiencing tensions	Control	-0.084	0.256	0.533	0.006
Size (ln)	→	Experiencing tensions	Control	0.119	0.135	0.300	0.016
Dip_1 ⁺⁺	→	Experiencing tensions	Control	-0.19	0.114	0.501	0.007
Dip_2 ⁺⁺	→	Experiencing tensions	Control	-0.247	0.281	0.511	0.007
Age	→	Budgetary performance	Control	0.11	0.376	0.210	0.019
Gender	→	Budgetary performance	Control	0.15	0.088	0.485	0.008
Tenure	→	Budgetary performance	Control	0.049	0.215	0.721	0.004
Size (ln)	→	Budgetary performance	Control	-0.03	0.137	0.785	0.002
Dip_1 ⁺⁺	→	Budgetary performance	Control	0.095	0.109	0.678	0.003
Dip_2 ⁺⁺	→	Budgetary performance	Control	0.089	0.229	0.724	0.001

Note(s): **p* < 0.05; ***p* < 0.01; ****p* ≤ 0.001 (using a one-tailed test for hypotheses and a two-tailed test for control paths). ⁺ Male is the reference category. ⁺⁺ Dep 3 is the reference category

Source(s): Authors' own creation

moderating effect of paradox mindset on the experiencing tensions–budgetary performance relationship was significant and positive ($\beta = 0.26, p = 0.000$), confirming *H3*. In addition, the effect size analysis (f^2) for the structural model's hypothesized relationships, as reported in [Table 6](#), revealed values ranging from 0.04 to 0.17, corresponding to small and medium effects ([Cohen, 1992](#)).

5.3 Further exploratory analysis and robustness tests

To enhance the validity of this study's findings, we performed additional exploratory analyses to address potential alternative explanations and verify the robustness of the results reported in subsection 5.2. First, we investigated whether experiencing tensions exerted an indirect effect on the relationship between goal-setting participation and budgetary performance. The analysis revealed that the indirect effect of experiencing tensions was not statistically significant ($\beta = -0.076, p = 0.122$), indicating that experiencing tensions does not mediate the goal-setting participation–budgetary performance relationship. Second, we expanded the model in [Table 6](#) to include a moderation effect of paradox mindset on the relationship between goal-setting participation and experiencing tensions. Results from this extended moderation model showed that the path coefficient for the added moderation term was not significant ($\beta = 0.10, p = 0.15$). Importantly, all other path coefficients in this model remained consistent with those previously reported in [Table 6](#). Furthermore, to address the potentially spurious effects of omitted control paths on paradox mindset and goal-setting participation, two other additional models were performed. The structural model in [Table 6](#) was retested by including the effect of the control variables on paradox mindset. The findings, detailed in [Table A3](#) ([Appendix 2](#)), confirm that the inclusion of these control paths did not alter the significance or direction of any path coefficients compared to those in the model presented in [Table 6](#). Specifically, previously significant paths remained significant, while nonsignificant paths remained unchanged. Finally, [Table A4](#) in [Appendix 2](#) presents the results of a structural model that incorporates the effects of the control variables on both the dependent and independent variables of the model. The findings are qualitatively similar to those obtained in the model presented in [Table 6](#) without these additional control paths. These additional analyses reaffirm the robustness of findings reported in Section 5.2, further strengthening confidence in the study's results.

6. Discussion

Our findings support two of the three hypothesized relationships. First, we found that participation in goal setting significantly reduces the perceived tensions experienced by budget holders, thereby corroborating our theoretical expectation (*H1*). This suggests that when hybrid managers are actively involved in and exert influence over the goal-setting process, they gain a clearer understanding of the financial objectives' underlying rationale. By acquiring pertinent, goal-related information, these managers experience a positive cognitive effect that alleviates perceived tensions between clinical and financial goals. This result not only supports the extant literature on the beneficial cognitive effects of budgetary participation on mental states (for a comprehensive review, see [Derfuss, 2009](#)) but also provides empirical evidence of its positive impact on mitigating tensions arising from conflicting goals. This reduction in perceived tensions diminishes the likelihood that budget holders interpret these conflicts as dilemmas, which in turn diminishes the potential for dysfunctional behaviors such as trade-offs, sequential decision-making or the compartmentalization of conflicting demands.

Second, our findings reveal that the direct relationship between the experience of tensions and budgetary performance is not statistically significant, thus failing to support *H2*. While

prior research has extensively discussed the deleterious effects of tensions on work outcomes (e.g. [Vince and Broussine, 1996](#); [Lewis, 2000](#); [Liu et al., 2020a, 2020b](#); [Liu and Pak, 2023](#)), our results support the work of [Miron-Spektor et al. \(2018\)](#), who found that merely experiencing tensions does not necessarily affect in-role job performance. While perceived tensions between competing objectives can be prevalent in public health care, this individual-level variable possibly interacts with other individual-level or organizational and context-specific variables in affecting budgetary performance. For example, [Covaleski et al. \(2003\)](#) suggested that performance may be influenced by various factors, including a range of mental states, budget difficulty, budget-based performance evaluation, task uncertainty, data manipulation and communication inaccuracies. Building on this, among the mental states that can influence the relation between tensions and performance, we considered the moderating role of paradox mindset.

Our data confirm the hypothesized positive moderating effect of paradox mindset in the relationship between experiencing tensions and budgetary performance (*H3*). This finding is consistent with previous empirical research ([Miron-Spektor et al., 2018](#)), indicating that budget holders who possess a paradox mindset are more inclined to perceive tensions as opportunities. These individuals derive energy from engaging in a broader search for integrative solutions, thereby facilitating superior budgetary performance. In contrast, those with a less developed paradox mindset tend to focus on eliminating tensions, which ultimately impedes their budgetary performance. Our analysis thus underscores the pivotal role of paradoxical thinking as a key mechanism in mitigating the potential negative effects of experiencing tensions on budgetary performance.

Taken together, our findings contribute to the growing empirical literature exploring the impact of budgeting practices on how individuals navigate tensions and the subsequent effects of these coping strategies on budgetary performance within hybrid organizations.

7. Conclusion

Although prior research, particularly in organizational studies, had explored the role of a paradox mindset in shaping work outcomes, our understanding of how budgeting practices helped hybrid managers navigate tensions remained limited. Moreover, the ways in which a paradox mindset contributed to higher performance levels had yet to be fully examined. Drawing upon the frameworks of Goal-Setting Theory ([Locke and Latham, 1990, 2012](#); [Locke et al., 1981](#)) and Paradox Theory ([Miron-Spektor et al., 2011](#)), we have proposed and tested a model involving 72 hybrid managers (budget holders) working within public hospitals to explore:

- the impact of participation in goal setting on the experience of tensions, and, in turn, the influence of these tensions on budgetary performance; and
- the moderating effect of paradox mindset in the relationship between experiencing tensions and budgetary performance.

Given the discussions above, our study yields theoretical, practical and policy implications.

First, our findings enrich behavioral management accounting research by illuminating the role of two underexplored psychological variables in explaining the mechanisms that link budgeting practices to performance outcomes ([Covaleski et al., 2003](#); [Birnberg et al., 2006](#); [Wibbeke and Lachmann, 2020](#)). To the best of our knowledge, this study is one of the few that explicitly examines the role of experiencing tensions within the budgetary participation–performance relationship and to clarify the function of paradox mindset in mitigating the potential adverse effects of tensions on budgetary performance in a hybrid setting. Second, our results substantiate the fundamental tenets of Goal

Setting Theory, which asserts that participation in goal-setting processes influences cognitive perceptions, such as tensions arising from conflicting goals, behaviors and, ultimately, performance (Locke, 1968; Locke *et al.*, 1984). Furthermore, in response to the call for more research on the potential role of paradox mindset in influencing job outcomes (Miron-Spektor *et al.*, 2018), our study confirms that paradox mindset plays a crucial role as a mechanism through which budget holders can effectively navigate and manage work-related tensions.

The findings of this study have significant practical implications. In public health-care organizations – characteristic examples of hybrid organizations – delegating financial accountability and budgetary responsibilities to professionals may lead hybrid managers to perceive tensions as rigid dilemmas. This perception frequently leads to trade-offs, sequential decision-making or compartmentalized approaches, all of which can ultimately hinder the overall performance of the health-care system. Interestingly, the results suggest that actively involving medical managers in budgeting processes and fostering their paradox mindset can significantly enhance budgetary performance. To achieve this, organizations can create a supportive environment that helps managers effectively navigate and balance the paradox between cost containment and high-quality care. For instance, specialized training programs, leadership development initiatives and cross-functional teams can help professionals reconceptualize tensions between budgetary objectives as complementary rather than contradictory, enabling them to view apparent contradictions as opportunities for innovation rather than as obstacles.

The findings of this study also contribute to illuminating the organizational context within which NPM-inspired reforms have been enacted, shedding light on how budgeting practices influence the beliefs and behaviors of medical managers who have been devolved financial accountability. This research offers critical insights for the formulation and execution of policies that necessitate reconciling potentially competing objectives, thereby fostering enhanced efficiency and effectiveness within the public sector.

8. Limitations of the study and future research suggestions

We acknowledge several limitations in this study, which may inspire future research directions. First, as the sample was drawn from a single organization, the findings are context-specific and may not be generalizable to other settings; thus, caution should be exercised in generalizing these results beyond similar organizational types. Future research could replicate our study using a cross-industry sample and a larger sample size to validate the generalizability of our findings.

Second, the cross-sectional research design used in this study precludes the ability to infer causal relationships, thus limiting our understanding of the causal processes involved. Future studies could adopt a longitudinal or experimental research design to provide stronger evidence of causal relationships between the variables in the proposed model.

Third, our study did not examine the antecedents of goal-setting participation or tensions, nor did it consider other forms of performance beyond budgetary performance. Future research could include the examination of the effects of certain antecedent variables, such as task uncertainty on goal-setting participation and resource scarcity on tensions, as well as introduce additional performance measures, such as supervisors' performance ratings. Furthermore, scholars could explore other individual and job-related variables, including ambidexterity and learning (Smith and Tushman, 2005), design thinking (Gaim and Wählin, 2016) and resilience and well-being (Lomranz and Benyamini, 2016). Finally, our research adopted a general approach to perceived tensions without distinguishing between the three

common types of tensions – learning, performing and belonging – that employees typically face. Future studies could incorporate these distinctions by to offer a more comprehensive view of the tensions under investigation.

Despite these limitations, we believe that this study offers important preliminary evidence regarding the influence of participative goal setting on experiencing tensions and budgetary performance and, more importantly, highlights the crucial role of paradox mindset in moderating the relationship between experiencing tensions and budgetary performance within hybrid organizations.

Notes

1. The real name of the research site was made anonymous for confidentiality reasons.
2. Before selecting this site for the study, we conducted an unstructured interview with the General Director and the head of the Controller's office to obtain permission to carry out this independent research; gather information on the organizational structure and budgeting environment; and confirm that the target hospital had implemented a formal participative budgeting approach.
3. Because the survey was distributed in Italian, it was initially translated from English using the backtranslation procedure described by [Behling and Law \(2000\)](#). Before the full distribution, the questionnaire underwent pilot testing by three university researchers and three budget holders (senior medical doctors not included in the sample) to ensure clarity and face validity ([Dillman et al., 2014](#)). Minor revisions were made to the wording of certain items as a result of this pretest. The survey distribution process consisted of an initial prenotice email to inform potential respondents about the study; a subsequent email containing the study's information cover sheet and a link to the Web-based survey; and two follow-up emails sent before the survey deadline. To encourage participation, respondents were promised a summary of the results and assured confidentiality ([Dillman et al., 2014](#)).
4. The required sample size was determined using G*Power software ([Faul et al., 2007](#)), which recommended a sample size of 68 based on an effect size of 0.15, a significance level (α) of 0.05, and a power ($1 - \beta$) of 0.80 (see for details: [Hair et al., 2021](#)). Therefore, our final sample of 72 is in line with the minimum sample size required for the analysis.
5. In assessing reliability, scholars suggest retaining as many items as possible to ensure the content validity of the instruments ([Henseler et al., 2009](#)). Specifically, indicator reliability is adequate when an item has a factor loading greater than 0.708 on its respective construct ([Hair et al., 2020](#)). Indicators with very low loadings (<0.40) should be permanently removed. In contrast, indicators with loadings between 0.40 and 0.70 should be considered for removal only if they lead to an increase in CR and AVE above the recommended threshold ($CR > 0.70$ – $AVE \geq 0.50$). The indicator with a low factor loading than 0.708 is retained if CR and AVE meet their threshold requirements (Hulland, 1999, p.198). Based on such recommendations, although the loadings for PM5, PM8 and PM9 were somewhat below 0.708 (range between 0.556 and 0.692), they were retained because the values of the CR and AVE complied with their threshold requirements; this choice preserved the content validity of the scales.
6. An additional test for discriminant validity was conducted to verify that each measurement item exhibited a higher loading on its designated construct compared to any other constructs, as recommended by [Chin \(1998\)](#). The analysis of the cross-loadings matrix, derived from the PLS measurement model, confirmed that all measurement items loaded more strongly on their respective constructs than on any alternative constructs. These results provide further evidence supporting the discriminant validity of the measurement scales. Detailed results of this test are available upon request.

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Appendix 1**Unformatted word version of the survey questions (Web-based)****SECTION 1**

Age: _____ Gender: _____ How long have you been working in your current position?
_____ What is the approximate number of full-time employees under your responsibility?

SECTION 2

Think about your regular experience at work when you answer these questions. The response format for is a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

- (1) Participation in goal setting
 - My superior allows me to participate in setting my performance goals/targets.
 - I am highly involved in setting the budget goals/targets.
- (2) Paradox mindset
 - When I consider conflicting perspectives, I gain a better understanding of an issue.
 - I am comfortable dealing with conflicting demands at the same time.
 - Accepting contradictions is essential for my success.
 - Tension between ideas energizes me.
 - I enjoy it when I manage to pursue contradictory goals.
 - I often experience myself simultaneously embracing conflicting demands.
 - I am comfortable working on tasks that contradict each other.

- I feel uplifted when I realize that two opposites can be true.
 - I feel energized when I manage to address contradictory issues.
- (3) Experiencing tensions
- I often have competing demands that need to be addressed at the same time.
 - I sometimes hold two ideas in mind that seem contradictory when appearing together.
 - I often have goals that contradict each other.
 - I often have to meet contradictory requirements.
 - Usually when I examine a problem, the possible solutions seem contradictory.
 - I often need to decide between opposing alternatives.
 - My work is filled with tensions and contradictions

Please note that the wordings “Participation in goal setting, Paradox mindset and Experiencing tensions” were not shown on the online questionnaire and all items were listed randomly.

Appendix 2

Table A1. Inner variance inflation factor (VIF) values for the model’s main variables (n = 72)

Relationships: from to			Inner VIF
Goal-setting participation	>>	Experiencing tensions	1.000
Experiencing tensions	>>	Budgetary performance	2.341
Paradox mindset	>>	Budgetary performance	2.180

Source(s): Authors’ own creation

Table A2. Item loadings from the PLS measurement model (n = 72)

Constructs	Item	Item loadings	p-Values*
Goal-setting participation	GPS1	0.918	0.000
	GPS2	0.941	0.000
Experiencing tensions	ET1	0.845	0.000
	ET2	0.857	0.000
	ET3	0.799	0.000
	ET4	0.737	0.000
	ET5	0.776	0.000
	ET6	0.781	0.000
	ET7	0.725	0.000
Paradox mindset	PM1	0.791	0.000
	PM2	0.732	0.000
	PM3	0.850	0.000
	PM4	0.731	0.000
	PM5	0.692	0.000
	PM6	0.732	0.000
	PM7	0.801	0.000
	PM8	0.665	0.000
	PM9	0.556	0.000

Note(s): All loadings are statistically significant at 0.000 level tested with a two-tailed test
Source(s): Authors’ own creation

Table A3. PLS structural model results with control paths on paradox mindset: path coefficients, standard deviation (SD), *p*-values and f^2 ($n = 72$)

From:	Paths:	To:	Hypothesis/ control	Path coefficient	SD	<i>p</i> -Value	f^2
Goal-setting participation	→	Experiencing tensions	H1	-0.359	0.127	0.002**	0.148
Experiencing tensions	→	Budgetary performance	H2	0.229	0.149	0.092	0.045
Paradox mindset * Experiencing tensions	→	Budgetary performance	H3	0.569	0.119	0.000***	0.179
Paradox mindset	→	Budgetary performance	Control	0.266	0.074	0.000***	0.297
Age	→	Experiencing tensions	Control	0.048	0.132	0.719	0.002
Age	→	Paradox mindset	Control	-0.017	0.112	0.878	0.000
Age	→	Budgetary performance	Control	0.11	0.089	0.214	0.019
Gender ⁺	→	Experiencing tensions	Control	-0.411	0.256	0.108	0.037
Gender ⁺	→	Paradox mindset	Control	-0.266	0.304	0.381	0.014
Gender ⁺	→	Budgetary performance	Control	0.154	0.218	0.481	0.008
Tenure	→	Experiencing tensions	Control	-0.084	0.135	0.533	0.006
Tenure	→	Paradox mindset	Control	-0.017	0.126	0.895	0.000
Tenure	→	Budgetary performance	Control	0.051	0.138	0.715	0.004
Size (ln)	→	Experiencing tensions	Control	0.119	0.114	0.300	0.016
Size (ln)	→	Paradox mindset	Control	0.232	0.136	0.089	0.054
Size (ln)	→	Budgetary performance	Control	-0.031	0.11	0.776	0.002
Dip_1 ⁺⁺	→	Experiencing tensions	Control	-0.19	0.281	0.501	0.007
Dip_1 ⁺⁺	→	Paradox mindset	Control	-0.31	0.35	0.375	0.018
Dip_1 ⁺⁺	→	Budgetary performance	Control	0.096	0.231	0.679	0.003
Dip_2 ⁺⁺	→	Experiencing tensions	Control	-0.247	0.376	0.511	0.007
Dip_2 ⁺⁺	→	Paradox mindset	Control	-0.318	0.409	0.437	0.01
Dip_2 ⁺⁺	→	Budgetary performance	Control	0.082	0.252	0.745	0.001

Note(s): * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (one-tailed test for hypotheses and a two-tailed test for control paths). ⁺ Male and ⁺⁺ Dep 3 = reference category

Source(s): Authors' own creation

Table A4. PLS structural model results with controls paths on all variables: path coefficients, standard deviation (SD), *p*-values and *f*² (*n* = 72)

from:	Paths:	to:	Hypothesis/ control	Path coefficient	SD	<i>p</i> -Value	<i>f</i> ²
Goal-setting participation	→	Experiencing tensions	H1	-0.359	2.773	0.003**	0.148
Experiencing tensions	→	Budgetary performance	H2	0.221	1.537	0.082	0.045
Paradox mindset * experiencing tensions	→	Budgetary performance	H3	0.569	4.776	0.000***	0.297
Paradox mindset	→	Budgetary performance	Control	0.266	3.593	0.000***	0.179
Age	→	Goal-setting participation	Control	0.074	0.533	0.594	0.005
Age	→	Experiencing tensions	Control	0.048	0.363	0.717	0.002
Age	→	Paradox mindset	Control	-0.017	0.153	0.878	0.000
Age	→	Budgetary performance	Control	0.110	1.244	0.214	0.019
Gender ⁺	→	Goal-setting participation	Control	-0.012	0.038	0.97	0.000
Gender ⁺	→	Experiencing tensions	Control	-0.411	1.604	0.109	0.037
Gender ⁺	→	Paradox mindset	Control	-0.266	0.876	0.381	0.014
Gender ⁺	→	Budgetary performance	Control	0.154	0.705	0.481	0.008
Tenure	→	Goal-setting participation	Control	0.031	0.157	0.876	0.001
Tenure	→	Experiencing tensions	Control	-0.084	0.624	0.533	0.007
Tenure	→	Paradox mindset	Control	-0.017	0.132	0.895	0.000
Tenure	→	Budgetary performance	Control	0.051	0.365	0.715	0.004
Size (ln)	→	Goal-setting participation	Control	0.057	0.34	0.734	0.003
Size (ln)	→	Experiencing tensions	Control	0.119	1.034	0.301	0.016
Size (ln)	→	Paradox mindset	Control	0.232	1.703	0.089	0.054
Size (ln)	→	Budgetary performance	Control	-0.031	0.284	0.776	0.002
Dip_1 ⁺⁺	→	Goal-setting participation	Control	0.289	0.863	0.388	0.015
Dip_1 ⁺⁺	→	Experiencing tensions	Control	-0.190	0.672	0.501	0.007
Dip_1 ⁺⁺	→	Paradox mindset	Control	-0.310	0.887	0.375	0.018
Dip_1 ⁺⁺	→	Budgetary performance	Control	0.096	0.414	0.679	0.003
Dip_2 ⁺⁺	→	Goal-setting participation	Control	0.410	1.263	0.207	0.016
Dip_2 ⁺⁺	→	Experiencing tensions	Control	-0.247	0.656	0.512	0.007
Dip_2 ⁺⁺	→	Paradox mindset	Control	-0.318	0.777	0.437	0.01
Dip_2 ⁺⁺	→	Budgetary performance	Control	0.082	0.325	0.745	0.001

Note(s): **p* < 0.05; ***p* < 0.01; ****p* < 0.001 (one-tailed test for hypotheses and a two-tailed test for control paths). ⁺ Male and ⁺⁺Dep 3 = reference category
Source(s): Authors' own creation