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A revisit of the participative budgeting and employees' self-efficacy interrelationship – empirical evidence from Indonesia's public sector

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ABSTRACT

The study aims to investigate the effect of employees' participation in the budget construction process, through *voice* and *trust*, on employee self-efficacy and performance, in public sector organizations. Budgetary participation and employees' performance have been extensively researched in both private sector organizations and from the perspective of top management. We investigated the phenomenon in public sector organizations and from the point of view of lower level participating employees. We gleaned empirical data from 114 respondents in public sector organizations in Lampung, Indonesia, and analyzed it using SmartPLS to test our hypotheses. We found that in the course of budgetary participation, employees' expectancy attitude, in the light of the expectancy theory and Maslow's hierarchy of needs, predicted employees' behavior, and had a significant impact on their self-efficacy and performance. Employees' *voice* and interpersonal *trust* in the budget construction process would reap optimal benefit for the organization when participating employees perceive their participation to be *objectively* appreciated and encouraged by top management. The study has implications for top management's role in the budget construction process, and contributes to the management accounting literature in the context of the public sector in developing countries.

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expectancy theory;
interpersonal trust; voice;
self-efficacy; public sector

1. Introduction

A wide body of literature endorses the fact that different management styles yield different results in terms of employees' 'actual' and 'optimal' performance and contribution to the accomplishment of organizational objectives (see, for instance, Conger & Kanungo, 1988; Cunningham & Hyman, 1999). Authoritative vs. participative management styles, including those perceived to be so by lower level employees, have been extensively debated in the literature to have a positive or negative impact on lower level employees under varying organizational external and internal circumstances (see, for instance, Amerioun, Shokouh, Zarchi, & Mahmoudi, 2011; Ibrahim & Al-Taneiji, 2012; Rausch & Russ, 2011). Lower level

employees' budgetary participation under different management styles, as perceived by the participating employees, should have implications for their efficiency and performance.

Budgeting is undertaken in contemporary business organizations for heterogeneous purposes, including power, control, planning, and so on, depending on their respective institution's complexity and situational factors (Abernethy & Brownell, 1999; Argyris, 1952; Bourmistrov & Kaarbøe, 2013). This study aims to provide empirical evidence that budgeting, among its diverse functions, can be used as a tool to enhance employees' performance and contribution to the organization's success through better 'managing' the budget construction process. Individuals who are trusted and appreciated for their voice in the budget construction process can increase their cognition (self-efficacy), which would translate into better overall organizational performance attained through efficiency gains and employee dedication. How and to what extent employees' participation and voice in the budget construction process reflects their contribution to the organization's success has been debated in the literature, and the effects of the process on individual attitudes and behaviors seem to be inconsistent (Frucot & White, 2006; Jermias & Yigit, 2013; Shields & Young, 1993). Thus, several empirical and theoretical studies that used various indicators have attempted to clarify the relationship between budgetary participation and individual behavior and performance at work.

A sense of empowerment is inculcated in employees under the participative management style that is used when constructing budgets. Previous studies found that budgetary participation has a positive effect on (a) job satisfaction (Chong, Eggleton, & Leong, 2006; Frucot & White, 2006; Leach-López, Stammerjohan, & Sang Lee, 2009), (b) organizational commitment (e.g. Jermias & Yigit, 2013; Noor & Othman, 2012), (c) trust (Ni, Su, Chung, & Cheng, 2009; Sholihin, Pike, Mangena, & Li, 2011), (d) self-efficacy (Ni et al., 2009), and (e) the improvement of managerial and organizational effectiveness, accomplished through subordinate empowerment (Chenhall & Brownell, 1988; Chong et al., 2006; Conger & Kanungo, 1988; Derfuss, 2016; Frucot & White, 2006; Winata & Mia, 2005). Leach-López et al. (2009) explored the relationship between budgetary participation and the performance of managers in South Korea and found that budgetary participation improves job satisfaction, thereby improving performance. However, most studies about budgetary participation focus on developed countries and their private sectors (Jermias & Yigit, 2013; Noor & Othman, 2012). Studies of management accounting in developing countries (Lindquist & Smith, 2009; Scapens & Bromwich, 2010), especially in the public sector (Kihn, 2010) are few. Academic debate on the relationship between budgetary participation and firm performance is continuing and still unresolved (Derfuss, 2016). This paper seeks to present a strong case for a closer interaction between the closely related, yet independent, 'management' and 'management accounting' disciplines. This study investigates the effect of top management 'objectively' acknowledging and appreciating budgetary participation by lower level employees on individual behavior in public sector business organizations in Indonesia. We aim to instigate a fresh debate on the 'real value' of employees' participation in the budget construction process in contemporary business organizations in developing countries.

The remainder of the paper has four sections. The literature review section (Section 2) extends the discussion around the paper's main themes and logically leads readers to the gap in the literature that the paper aims to fill. Section 3 provides a theoretical framework for the study to help understand the interrelationships between the variables analyzed and their theoretical significance. The following section on methodology (Section 4) covers

details of the data collection and analysis techniques used in the study. Lastly, we discuss and summarize our findings.

2. Review of literature and development of hypotheses

Development and successful institutionalization of social practices can only be accomplished after a thorough understanding of human psychology and the factors that have shaped it over the years and those that continuously interact with and impact on it under different social settings. To put human resources to their utmost optimal use in terms of efficiency, self-efficacy and loyalty has been a challenge for the management and management accounting disciplines due to the intricacies of human psychology. The interaction between the two interrelated fields could yield valuable insights into the budget construction process in contemporary organizations, with implications for both theory development and practice. The phenomenon has been extensively debated; however, new issues continue to emerge as new research is undertaken (Derfuss, 2016). This study highlights the significance of top management's better management of employees' expectancy attitudes when involving them in organizational affairs. We argue that top management's *objective* recognition and appreciation of employees' participation and voice in the budget construction process, as perceived by the participating employees, is crucial for achieving employees' self-efficacy and ensuring their optimal contribution to the organization's success. The literature endorses the significance of the existence of a viable culture that allows these practices to institutionalize and flourish in business organizations (see, for instance, Foster-Fishman & Keys, 1997)

Depending on various internal and external factors peculiar to individual business organizations, budgets, as socially constructed phenomena, are one of the most effective and widely used tools in business organization for both explicit and implicit diverse purposes (Amans, Mazars-Chapelon, & Villesèque-Dubus, 2015). The social practice's effectiveness in terms of value for all stakeholders largely depends on how these practices are constructed and institutionalized within the organization. If the process ensures 'objective' and 'dedicated' contribution from top management, who are responsible for implementing the planning and control tool, as well as those whose performance will be evaluated against it, its value for all the stakeholders involved could be greatly enhanced, and vice versa. One of the major contributors to ensuring this 'objectivity' and 'dedication' is to achieve lower level employees' self-efficacy and self-motivation, and the primary aim of this empirical investigation into the process is to understand how this goal could be effectively reached. Jermias and Yigit (2013) assert that individual workers, particularly those in junior grades, who become involved in the budgeting process, feel that they have a high recognition (self-efficacy), because their supervisors respect the opinions of lower ranking staff. Employees feel that they are trusted by supervisors because of their skills and experience. Another factor is that managers need all employees to cooperate and speak freely if they are to reach expected targets in future years. Gist and Mitchell (1992) note that an employee's self-efficacy would be enhanced when managers allow individuals to give their viewpoint verbally. Speaking (to an active listener) is closely related to participation (Magner, Welker, & Campbell, 1995).

As diagrammatically illustrated in the model below (Figure 1), interpersonal trust and individual voice, duly and objectively recognized by top management, mediate the relationship between budgetary participation and self-efficacy and motivation on the part of employees. The model sheds light on the interrelationship between budgetary participation,

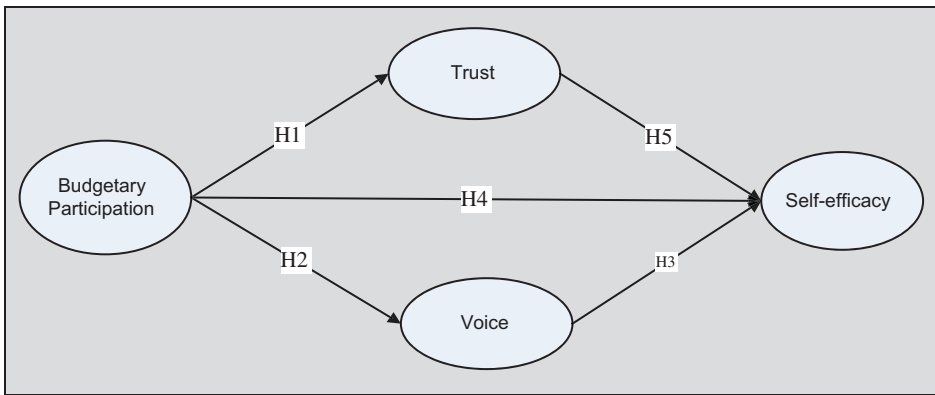


Figure 1. Research framework of the study.

trust in employees, due recognition of employees' voice and employees' self-efficacy and motivation.

Before we develop our hypotheses, we examine the argument that individuals who are involved in budgeting must necessarily be trusted by their supervisor. Superiors will be reluctant to trust individual workers if they (the supervisors) do not believe in the capacity, skills and dedication of their subordinates. Thus, a supervisor's trust in his/her subordinate(s) will be based on: (1) specific individual skills or knowledge appropriate to the budgeting process; and (2) the employee's prior involvement, if any, in budget decision-making and the relevant outcomes for the organization. Prior interactions between the supervisor and his/her subordinate and the outcomes thereof would determine the level of trust the supervisor holds for the subordinate. Interpersonal trust built among members of an organization participating in the budget decision-making process creates higher mutual confidence in accomplishing the agreed plan (Lau & Tan, 2006). If subordinates effectively achieve their budgeted goals, this would have a reinforcing effect on their overall performance levels, and also on their interpersonal trust and recognition of voice in their subsequent interactions with their supervisor.

The aforementioned discussion endorses the fact that prior budget experiences, with outcomes that fulfill the supervisor's and employee's mutual expectations, would also enhance the latter's sense of self-efficacy, which would eventuate in better overall organizational performance. Shields and Young (1993) note that the main advantage of a budget construction process is that it allows stakeholders to share information and gain a better understanding of the budget targets and mutual expectations. Moreover, participants communicate and negotiate both ways to achieve reasonable aspirations (Jermias & Yigit, 2013). Similarly, Lau and Tan (2006) state that communication between superiors and subordinates can be facilitated during the budget setting process by allowing individuals to voice their arguments openly, share information and clarify different perspectives between them before an agreement is reached that would reflect all stakeholders' mutual expectations.

However, how 'objective' the process is, and eventually how valuable the finished product is for the stakeholders involved, including the organization, depends largely on the extent to which top management wholeheartedly accepts lower employees' say in finalizing the finished product for implementation. In other words, *objective* interaction between supervisors

and subordinates to reach a mutually beneficial agreement in the budgeting process makes a significant contribution to the overall organizational performance (see: Derfuss, 2016; Gao, Janssen, & Shi, 2011). This process relies on employees' capacity, willingness and confidence in voicing alternative ideas (Jermias & Yigit, 2013). Lower level employees should have confidence that top management values each employee's ideas and that his/her opinion, ideas and/or suggestions are wholeheartedly welcomed, treated objectively and evaluated for possible implementation by top management. In a nutshell, employees embrace a sense of belonging and value, which, in turn, contributes both to their belief in their ability to achieve their set targets (Schmidt & DeShon, 2010) and to the organization's overall performance. Subordinates who feel their voice is not heard by their supervisors may encounter psychological issues such as stress and frustration (Lau & Sholihin, 2005). Negative feelings about their working environment and their perceived worth in the organization may reduce their self-confidence and, thereby, self-efficacy, which would obviously prove detrimental to the organization's overall goals.

Our study empirically evaluated and confirmed that interpersonal trust and employee voice, duly valued and objectively recognized, enhance the relationship between budgetary participation and self-efficacy in ensuring achievement of set targets. Thus, organizations that not only allow lower level employees to *freely* present their arguments orally, but also value and trust their contribution to setting up budgets, position themselves, through the employees' sense of confidence and self-efficacy thus earned, to better accomplish their overall goals than the organizations that, explicitly or implicitly, avoid such input from lower level employees.

This study contributes to the existing literature in two areas. Firstly, earlier work in the area, through mediating variables such as job satisfaction and organizational engagement, dealt with the issue from the perspective of what lower level employees contributed to the budget construction process and their resulting sense of achievement. This current study, however, sheds light on the budget construction process from the distinct angle of the *objectivity* of top management in the process in allowing and accepting lower level employees' input through a free and independent voice into the budget construction process, which is duly recognized and perceived by the latter group to be *objective*, and the resulting positive psychological effects this has on employees, such as a sense of confidence and trust in *their* organization and management and self-efficacy. Our work, therefore, fills this void and furthers the existing management and management accounting literature. Secondly, this study extends the research field to a different business sector. Earlier research on the related issues in the management and management accounting disciplines covered business organizations in the private sector, leaving relevant issues in public sector organizations requiring empirical investigation. (Zawawi & Hoque, 2010) reviewed 22 leading journals during 2000–2008 for related research and found that only six out of 89 articles researched relevant issues in public sector organizations. Kihn (2010) also concluded that theoretical and empirical research on governmental bodies would enrich existing perspectives on management accounting.

2.1. Budgetary participation and trust

Trust is defined by Rousseau, Sitkin, Burt, and Camerer (1998, p. 395) as 'a psychological state comprising the intention to accept vulnerability based upon positive expectations of the

intention or behaviour of another'. Chenhall and Langfield-Smith (2003) note that within the context of business organizations, trust is created when individuals, both in the upper and lower level employee groups, have the same values and principles govern their actions (e.g.: van der Meer-Kooistra & Vosselman, 2000; Vosselman & Meer-Kooistra, 2009), shedding light on the roots of the social phenomenon, which note that trust originates from the belief that *someone* will consistently behave well in all future transactional relationships. Thus, it is pertinent to note here that the social virtue of trust gets established under a business or non-business relationship between two or more interacting parties and finds a place in one party's heart due to another party's consistently positive and objective demonstrated behavior over time that eventually inculcates a sense of positive, objective, and truthful mutual expectation (reference). The literature suggests that trust is the outcome of an individual's commitment to *preserve* relationships based on voluntary local choices on the part of all stakeholders involved (Vosselman & Meer-Kooistra, 2009).

In the context of budget construction and the role of lower level employees' participation in the process, previous work endorses the fact that trust is an essential variable that is a prerequisite for mutual participation in group tasks and cooperative works throughout an organization (Liao, Chang, Cheng, & Kuo, 2004; Maiga & Jacobs, 2007). Lau and Buckland (2001) further explain how budgetary participation boasts a positive association with trust. Earlier research associated the social phenomenon of trust with actions instigated at top management level. (Lau & Buckland, 2001) assert that given the positive association between trust and budgetary participation, supervisors invite subordinates to become involved in budgetary participation processes and have their say in the process because they trust them. As for empirical evidence in the management accounting context, several studies (e.g. Lau & Buckland, 2001; Ni et al., 2009; Otley, 1978) have found a positive relationship between lower level employees' budgetary participation and their sense of trust.

This current study investigates the real essence of trust that supervisors depict in their subordinates from the point of view of the expectations and perceived objectivity of management actions by the subordinates, and the resulting sense of confidence and self-efficacy that they cherish. Following Lau and Buckland (2001) and Maiga and Jacobs (2007), we propose the following hypothesis:

H1: Budgetary participation by employees, duly perceived to be objectively recognized and valued by supervisors, has a positive effect on employees' sense of trust in their organization and management.

2.2. Budgetary participation and self-efficacy

The literature endorses, both theoretically and empirically, the fact that participation enhances job satisfaction among those involved in the process (Chong et al., 2006; Jermias & Yigit, 2013); however, it has largely ignored how this satisfaction is derived or reached, and this current study aims to fill this void. Job satisfaction results in enhancement of employees' morale (Jermias & Yigit, 2013). In particular, lower level employees who are actively and meaningfully involved in the process of budget construction feel that they have a closer relationship with their supervisor (Jermias & Yigit, 2013). It is pertinent to note that mere engagement on the part of the lower level employees in the process will not enhance their sense of satisfaction with their job; it is their active and meaningful engagement, objectively encouraged and openly acknowledged by their supervisors, as perceived by the subordinates,

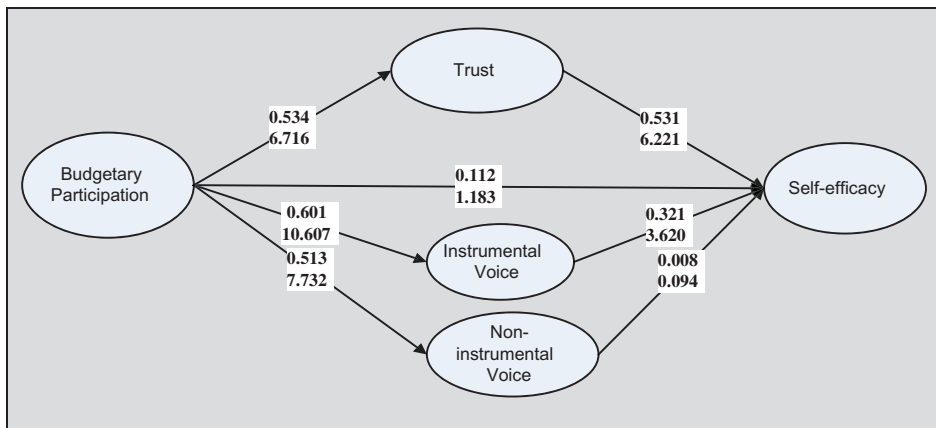


Figure 2. Path analysis of the current study.

that gives them the sense of recognition and job satisfaction,¹ which, in turn, translates into their self-efficacy to achieve or surpass the target set for them (Latham, Winters, & Locke, 1994; Ni et al., 2009). The discussion above results in the following hypothesis:

H2: Budgetary participation by lower level employees, objectively acknowledged and openly recognized by the top management as perceived by the employees, has a positive effect on employees' self-efficacy.

2.3. Budgetary participation and voice

Employee voice refers to 'employees' actual behavior in 'speaking up' with constructive ideas that aim to improve or change the status quo' (Rees, Alfes, & Gatenby, 2013, p. 2784). Employee voice should be prominent in the budget decision process (Magner et al., 1995). For the purpose of this paper, we term 'employee voice' as employees' consistent participation over time, through an active and democratic input, in the process of periodic budget construction, duly recognized and encouraged by top management through their explicit and implicit signals as seen in their actions within the organization *as perceived by the employees*, rather than *as claimed by top management*. It is important to note the significance of the employees' perception of the value or influence of their say or voice in the process. Libby (1999) notes that employees' voice in the budget construction process without any influence on top management's final decision on the finished product causes employees' performance to decline. In a nutshell, if an employee is made to realize, through management's explicit or implicit signals, that his/her input/voice into organizational processes has no influence on top management's final decision-making, he/she will have a lower sense of self-efficacy and, therefore, lower overall performance.

A study by Latham et al. (1994) supports Bandura's (1986) social cognitive theory that individuals' self-efficacy can be improved by making them believe, through explicit actions or verbal expression on the part of their supervisors, that their voice is duly recognized and valued. Libby (1999) asserts that the budget construction process motivates lower echelon workers 'in ways that subordinates prefer' (p. 126). Superiors can consult with subordinates to access better quality information (Libby, 1999) about resources, operational activities, and

interaction with the end users of the organization's products/services and other businesses. In addition, budgetary participation facilitates two-way communication between upper and lower level management, encouraging subordinates to contribute, and the process can be tailored to the benefit of the organization through active and objective recognition of lower level employees' voice/say in the budgeting process. Ni et al. (2009) established a clear correlation between employees' participation in the budget construction process and their voice/say in business processes. Hence, we put forth the following hypothesis:

H3: Budgetary participation has a positive effect on individual voice in the organization's business processes.

2.4. Interpersonal voice and self-efficacy

We argue that interpersonal voice has a positive effect on self-efficacy. The term 'voice', as used in the context of this study, refers to an 'input' or 'contribution' by an employee, whether in writing or spoken words, that helps solve a problem at hand. Gao et al. (2011) claim that voice increases job satisfaction because employees feel comfortable about expressing their opinion to a supervisor, particularly when they feel confident about the supervisor's 'objective' acceptance and appreciation of their 'voice'. Moreover, employees who are allowed to freely comment on the system will build their trust and confidence, and create routines of knowledge sharing in the workgroup (Gao et al., 2011), motivate them to perform better (Brown, Squire, & Blackmon, 2007; Cowling & Newman, 1995), lead to 'greater commitment toward the attainment of strategic goals' (Browning, Edgar, Gray, & Garrett, 2009, p. 744), and lessen conflicts (Chenhall & Langfield-Smith, 2003). Similarly, Shields and Shields (1998) note that individuals who are able to freely express their voice gain self-respect. Bandura (1986) explains that self-efficacy can be achieved from verbal persuasion. In contrast, poor communication between upper and lower level employees triggers anxiety, stress and frustration (Lau & Sholihin, 2005). We argue that employees' voice in the organization's matters, which is objectively accepted and appreciated by top management to employees' satisfaction, will accomplish greater value for the organization in terms of employees' self-efficacy, commitment and dedication to the organization's strategic objectives. As Libby (1999) states, employees' voice in organizational matters with no influence means lower performance. We put forth the following hypothesis:

H4: Employees' interpersonal voice in organizational matters, duly accepted and appreciated by top management, has a positive effect on employees' self-efficacy.

2.5. Trust and self-efficacy

In developing mutual trust, accounting has much leverage in an expected behavioral context (Vosselman & Meer-Kooistra, 2009). Chenhall and Langfield-Smith (2003) say that interpersonal trust improves stakeholders' overall confidence in future achievements. Trust is achieved by incremental monitoring of transactional signals (Vosselman & Meer-Kooistra, 2009). Since both upper and lower interacting levels feel trust, both feel free to express their opinion (Lau & Sholihin, 2005). As a result, they cooperate to solve problems, which would positively contribute to accomplishing success. Lau and Sholihin (2005) assert that a positive behavioral aspect of trust is that it improves the quality of discussions and the resulting decisions, which, in turn, speeds up implementation.

Mutual trust built over time between top management and lower level employees guarantees positive value for the organization as a whole. Lau, Wong, and Eggleton (2008) found a positive relationship between interpersonal trust and job satisfaction that is shown in the literature to have a positive effect on employees' performance. Hartmann and Slapničar (2009) claim that trust reduces conflict-specific issues within the organization, thereby promoting cooperation among employees in the accomplishment of short-term organizational objectives. Trust, then, will improve employee behavior toward planned organizational targets and motivate them to put in their best effort to achieve them (Chenhall & Langfield-Smith, 2003). Thus, trust, through an improved sense of job satisfaction among employees, will motivate employees and improve their overall attitude toward work and colleagues, which is an environment conducive to a business organization's success. The discussion above led us to the following hypothesis:

H5: Lower level employees' perception of upper management's explicit and objective trust in the employees' 'voice' in the organization's affairs has a positive effect on their self-efficacy and organizational performance.

3. Theoretical framework for the study

The construction of social practices and their institutionalization at a wider societal level as legitimate and valuable capital requires a complex and intricate interaction of several variables, and budget construction processes in business organizations is no exception. Expectancy theory and Maslow's hierarchy of needs, through our understanding of human psychology and reward systems, shed light on how budgetary participation could reap real value for the organization.

The expectancy theory and Maslow's (1943) hierarchy of needs helps us to understand how employees behave and become motivated under different organizational settings. Lawler and Suttle (1973) assert that expectancy model predicts individuals' motivation and efficiency toward a task based on their expectations about the accomplishment of their set goal and the resulting inflow of their expected reward. An employee's level of dexterousness, motivation and perception of his/her role interact to determine his/her job behavior and efficiency (Lawler & Suttle, 1973). Hence, consistent with the expectancy theory prediction, this study's empirical data analysis also signaled employees' positive response through improved self-efficacy and efficiency in response to top management's *objective* appreciation and encouragement, as perceived by the participating employees, of their voice in the budget construction process. Putting expectancy theory narratives together with those advocated by Maslow's (1943) hierarchy of needs, demonstration of this behavior on the part of the lower level employees signals their human pursuit of self-actualization needs, which is the top tier human need in Maslow's original categorization.

4. Research method and data analysis

4.1. Sample study

The study employed 'purposive sampling' that involved surveying managers who were actively engaged in the budget construction process at 20 public sector agencies in the Province of Lampung. As the distinct sampling technique required, we imposed and

Table 1. Respondents' demographics.

		(n)	Cumulative	%	Cumulative (%)
Gender	Male	76	76	66.67	66.67
	Female	38	114	33.33	100.00
Age	≤ 30 years	3	3	2.63	2.30
	31 – 40 years	17	20	14.91	17.54
	41 – 50 years	57	77	50.00	67.54
	≥ 51 years	37	114	32.46	100.00
Education	SMA/Diploma	3	3	2.63	2.63
	S1	67	70	58.77	61.40
	S2/S3	44	114	38.60	100.00
	Echelon II	12	12	10.53	10.53
Position	Echelon III	78	90	68.42	78.95
	Echelon IV	24	114	21.05	100.00

observed several criteria in the data collection processes. Firstly, respondents must have been participating in budgetary decision-making for several years.² Secondly, all the respondents were employed in echelons 2, 3 and 4.³ Thirdly, to avoid bias in the study results, we distributed questionnaires to employees in the cost centers, revenue centers, public service centers and administrative centers of the chosen public sector agencies rather than just their finance centers.

Before collecting the data, we undertook a pilot study to eliminate possible misunderstandings of the survey questions (Selvina & Yuliansyah, 2016; Urbach & Ahlemann, 2010; Yuen, 2004; Yuliansyah, Gurd, & Mohamed, 2017; Yuliansyah, Rammal, & Rose, 2016). Suitable revisions were incorporated into the questionnaire before the main task of data collection began. Questionnaires were handed to the appropriate person either directly or through secure organizational channels. We obtained usable data from 114 of the 123 respondents. Table 1 illustrates the respondents' demographics:

4.2. Variables measurement

4.2.1. Budgetary participation

This variable consists of a six-item questionnaire developed by Milani (1975), and is extensively used by scholars (e.g. Lau & Buckland, 2001; Lau & Tan, 2006). Respondents were asked to rate their opinion using a 5-point Likert scale with 1 denoting the highest level of respondents' disagreement to 5 denoting the highest level of respondents' agreement.

4.2.2. Trust

This variable adopts a 5-point Likert scale from Cook and Wall (1980), and it asked respondents to indicate the extent to which they agree or disagree with five levels of agree–disagree intensity (1 = strongly disagree, and 5 = strongly agree).

4.2.3. Voice

This variable uses a 5-point Likert scale that consists of 12 questions developed by Korsgaard and Roberson (1995). This instrument has previously been used by other researchers, such as Elicker, Levy, and Hall (2006) and Noeverman (2010). Respondents were asked to rate their opinion using a 5-point Likert scale (1 = very much disagree to 5 = very much agree).

4.2.4. Self-efficacy

This variable uses an eight-item questionnaire developed by Chen, Gully, and Eden (2001). The questionnaire probes into the respondents' own perceived level of self-efficacy. Respondents were asked to rate their opinion using a 5-point Likert scale (1 = very much disagree to 5 = very much agree).

4.3. Data analysis

We analyzed the usable data with 'SmartPLS' software. To test Explanatory Factor Analysis, we used SPSS. Our findings indicated that, except for 'voice', all variables consisted of one dimension, which is slightly different to the previous approach adopted by Korsgaard and Roberson (1995) in the case of the 'voice' variable, which demonstrated two dimensions for 'voice': instrumental and non-instrumental. However, as the current study implicitly confined the scope of the 'voice' variable to 'instrumental' only, this outcome was not a major deviation from the Korsgaard and Roberson study. Using SmartPLS for analysis of the data, we evaluated the empirical data in two steps, which are briefly elaborated below.

4.3.1. Evaluation of measurement model

We tested the data for reliability and validity using Cronbach's α and Composite Reliability. Validity is assessed using 'convergent' and 'discriminant' validity. Cronbach's α confirms reliability when each construct scores higher than .7 (Hair, Ringle, & Sarstedt, 2011; Hulland, 1999). The results in Table 2 show all constructs score more than .7, which depicts a satisfactory reliability of the constructs employed in the study. The convergent validity test depends on the AVE (Average Variance Extracted) score. A good AVE score is higher than .5 (Hair et al., 2011). This study's AVEs for each of the constructs (Table 2) range from .526 to .635, which depicts adequacy of convergent validity.

Table 2. Factor loadings, composite reliability, Cronbach's α and AVE.

Constructs	Items	Factor Loadings	Composite Reliability	Cronbach's α	AVE				
Budgetary participation	PA 1	0.754	0.866	0.807	0.565				
	PA 2	0.705							
	PA 3	0.795							
	PA 5	0.819							
	PA 6	0.677							
	TR 1	0.791							
Trust	T R2	0.856	0.896	0.854	0.635				
	TR3	0.813							
	TR4	0.838							
	TR5	0.674							
	Instrumental voice	VC1				0.808	0.846	0.769	0.526
		VC2				0.745			
VC3		0.619							
VC4		0.804							
VC5		0.628							
Self-efficacy		SE1	0.806	0.902	0.873	0.569			
	SE2	0.754							
	SE4	0.785							
	SE5	0.810							
	SE6	0.806							
	SE7	0.654							
	SE8	0.645							

Table 3. Latent of variable correlation.

	PA	TR	IV	NIV	SE
Budgetary participation (PA)	0.752				
Trust (TR)	0.534	0.797			
Instrumental voice (IV)	0.601	0.494	0.725		
Non-Instrument Voice (NIV)	0.514	0.515	0.717	0.778	
Self-efficacy (SE)	0.579	0.740	0.636	0.546	0.754

Bold figures indicate relative significance of each of the constructs both horizontally and vertically.

Discriminant validity from the Fornell–Larcker criterion and the examination of cross-loadings assumes that factor loading of each item should be higher than other constructs (Hair et al., 2011). However, for the sake of keeping the information compact for the reader, we did not go into these details in Table 2, but we can confirm that the factor loading of each item is higher than other constructs.

The Fornell–Larcker criterion for satisfactory discriminant validity is that the square root of the AVE along the diagonal is higher than the correlations between constructs (Hair et al., 2011). Table 3 illustrates that all square roots of the AVE are higher than the correlation scores along the diagonal in both rows and columns, which indicates that our measurement model tests are satisfactory.

Following the validity tests, we conducted the assessment of the structural model, which is discussed briefly below.

4.3.2. Evaluation of structural model

We assessed the study's structural model with the score of *coefficient of determination* (R^2) and coefficient tests. By bootstrapping 500 replacements, it can be seen that the R^2 score for 'trust', 'instrumental voice' and 'self-efficacy' are .285, .362, and .651, respectively. In each case, the score revealed is higher than .1, indicating adequacy of significance.

The evaluation of the above discussion indicates that the assessment of our structural model is adequate. The last step in the process, hypotheses testing, follows:

4.3.3. Hypotheses tests

4.3.3.1. Hypothesis 1: Budgetary participation has a positive influence on 'trust'. Hypothesis 1 postulates a positive relationship between budgetary participation and *trust*. According to Table 4, budgetary participation has a positive effect on trust ($\beta = .543$, $t = 6.716$, $p < .01$). Hence, these findings support H1. As data were gleaned from the lower level employees, the term 'trust' obtained its significance from the perspective of it being perceived by the employees rather than top management. The positive relationship exists if budgetary participation from lower level employees is 'objectively' accepted and encouraged by top management as perceived by the participating lower level employees.

Table 4. The evaluation of the structural model.

	PA	TR	IV	NIV	R^2
Trust	0.534 ** (6.716)				0.285
Instrumental voice (IV)	0.601 ** (10.607)				0.362
Self-efficacy	0.112 * 1.183	0.531 ** (6.221)	0.312 **(3.620)	0.008 * 0.094	0.651

Notes:**Significant at 1%; *Significant at 10%.

4.3.3.2. Hypothesis 2: Budgetary participation has a positive influence on ‘voice’. Our statistical analysis of the empirical data found that budgetary participation has a positive effect on *voice*: ($\beta = .601$; $t = 10.607$; $p > .01$). From these findings, H2 is supported. Again, for the purpose of this study, the hypothesis is held true only when lower level employees’ participation in the budget construction process is ‘objectively’ encouraged and appreciated by top management to the satisfaction of participating employees.

4.3.3.3. Hypothesis 3: Trust has a positive influence on self-efficacy. Table 3 above depicts that *trust* has a positive effect on *self-efficacy* ($\beta = .531$; and $t = 6.221$ at $p < .01$). Hence, H3 is accepted. Thus, where top management demonstrates trust in their employees in an objective way and is perceived by the latter group to be the case, it will have a positive impact on employees’ self-efficacy.

4.3.3.4. Hypothesis 4: Employee voice has a positive influence on Self-efficacy. In Table 4 we see that instrumental voice has a positive effect on self-efficacy ($\beta = .321$; $t = 3.620$; $p < .05$), which demonstrates support for H4. Employees’ *voice* recognition and appreciation in the budget construction process on the part of top management must be ‘objective’ and perceived by the former group to be the case.

4.3.3.5. Hypothesis 5: Budgetary participation has a positive influence on self-efficacy. The analysis of the study’s empirical data using SmartPLS and the testing of our last hypothesis revealed that the variable of *budgetary participation* has a positive effect on self-efficacy. However, the structural model found that budgetary participation has *no* effect on self-efficacy ($\beta = .112$; $t = 1.183$; $p < .10$). H5 is therefore rejected. It is pertinent to note that with regard to the outcome of the study’s structural model, budgetary participation overall may not have a positive impact on lower level employees’ self-efficacy unless the employee group is convinced that their participation is ‘objectively’ recognized, appreciated and encouraged by top management.

4.3.4. Path analysis

A path analysis (Alwin & Hauser, 1975; Baron & Kenny, 1986) between employees’ budgetary participation and their self-efficacy was conducted. According to Baron and Kenny (1986), path analyses need to be conducted if all variables depict positive interrelationships. However, as Table 4 depicts, a direct relationship between budgetary participation and self-efficacy does not exist. Thus, further analyses of the relationship between all variables is not necessary. Hence, as the model above indicates, the relationship between employees’ budgetary participation and their self-efficacy is fully mediated by ‘voice’ and ‘trust’, which is in line with the aforementioned hypotheses.

5. Discussion and conclusion

Among the diverse and situational uses of the budgeting social practice in different organizations (Amans et al., 2015), budgetary participation has been extensively researched and still remains on the research agenda (Derfuss, 2016). Most of the previous studies endorse positive outcomes of budgetary participation for all stakeholders involved in the budget construction process. However, these studies explored the phenomenon from the viewpoint

of top management. This study, on the other hand, empirically investigated different variables associated with lower level employees' budgetary participation from the lower level employees' perspective and viewpoint. We aimed to investigate whether individual *trust* and *voice* in the budget construction process, objectively accommodated and appreciated as perceived by the participating lower level employees, can help translate the latter group's budgetary participation into an improved level of self-efficacy. Moreover, most studies on budgetary participation focus on developed countries and their private sectors (Jermias & Yigit, 2013; Noor & Othman, 2012). The literature has a gap in the area of management accounting in developing countries (Lindquist & Smith, 2009; Scapens & Bromwich, 2010), especially in the public sector (Kihn, 2010). This study aims to fill this pertinent gap in the literature.

We surveyed public sector agencies in Lampung, one of the provinces of Indonesia. Gleaning usable data from 114 respondents in 20 public sector agencies, which represented cost centers, revenue centers, administrative centers, and general service centers, we analyzed the data and the phenomena under investigation using *Structural Equation Modeling* (SEM), under SmartPLS. Statistical analysis showed that *voice* and *trust*, duly acknowledged, encouraged and appreciated by top management and perceived by the participating lower level employees to be the case, can effectively leverage the relationship between budgetary participation and employees' self-efficacy. The study endorses employees' active involvement in their organization's matters and top management's objective response to such an involvement where employees feel that they are trusted, and their voice is duly recognized and appreciated by their top management. In addition, they will take responsibility for plans that they help formulate, and will put in their best effort and feel confident in executing them, thereby enhancing their self-efficacy.

This study confirms that budgetary participation, *objectively* recognized and encouraged by top management, as perceived by the participating employees, will not only actively involve employees in the organization's planning activities, but will also have a positive psychological and cognitive effect on them that will greatly enhance their objective and dedicated efforts in the organization's overall performance and success (Dorfuss, 2016). Participating and actively involved employees will feel that they are trusted as valuable persons during the budget-making process, and that their voice is heard by their supervisors, who, in turn, acknowledge and appreciate such involvement. The resulting psychological effect on participating employees will increase morale and, hence, enhance individual self-efficacy.

Like other empirical research studies, this study has some limitations. We investigated the phenomena in the public sector, exclusively in government institutions. Further research in other semi-public organizations would extend its value and instigate a new debate among academics and practitioners. Moreover, an analytical comparison of the outcomes of earlier (or new) studies conducted in private sector organizations in developed countries with the current and proposed studies' outcomes would help draw parallels between the two sectors and benefit each sector from the other's experiences and approaches. The methodology adopted for this study may be another limitation on the generalizability of its outcomes. This study resorted to a single method, which was collecting and analyzing quantitative data through a survey study. Research methodologies experts have argued against the use of quantitative methods as they may have certain limitations, particularly in research endeavors that involve social phenomena. The quantitative method employed by this study, therefore,

may not have provided in-depth analysis of the phenomenon. We recommend further research into the area using the triangulation of methods approach, amalgamating the quantitative approach with the qualitative approach to dig deep into the social phenomena this study considered.

Notes

1. This current study uses the extent of and continuance in the budgetary participation on the part of the lower level employees as a 'proxy' for their 'continued perception' of 'objective' recognition of such participation by top management.
2. Explicit consent was secured from all respondents to participate in the study and confirm their active involvement in their organization's budgeting processes. If a respondent confirmed non-involvement in budgeting, he/she was not included in the study.
3. They are chosen on the basis of their significant role in the design and development of the yearly budget for their respective offices.

Disclosure statement

No potential conflict of interest was reported by the authors.

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