



## Accounting and Business Research

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rabr20>

### Testing a model of the antecedents and consequences of budgetary participation on job performance

Vincent K. Chong<sup>a</sup> & Darren M. Johnson<sup>b</sup>

<sup>a</sup> Accounting and Finance (M250) , University of Western Australia

<sup>b</sup> Department of Treasury and Finance , 200 St Georges Terrace, Perth , Western Australia , 6000

Published online: 28 Feb 2012.

To cite this article: Vincent K. Chong & Darren M. Johnson (2007) Testing a model of the antecedents and consequences of budgetary participation on job performance, *Accounting and Business Research*, 37:1, 3-19, DOI: [10.1080/00014788.2007.9730055](https://doi.org/10.1080/00014788.2007.9730055)

To link to this article: <http://dx.doi.org/10.1080/00014788.2007.9730055>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

# Testing a model of the antecedents and consequences of budgetary participation on job performance

Vincent K. Chong and Darren M. Johnson\*

**Abstract**—This paper examines the effect of antecedents (such as task exceptions and task analysability) and consequences (such as job-relevant information, budget goal level, budget goal acceptance and budget goal commitment) of budgetary participation on job performance. The responses of 135 middle-level managers, drawn from a cross-section of manufacturing firms, to a survey questionnaire, were analysed by using a structural equation modelling (SEM) technique. The results of this study suggest that task exceptions and task analysability are important antecedents of budgetary participation. The results further suggest that the cognitive effect of participation in goal-setting allows subordinates to gather, exchange and share job-relevant information. The availability of job-relevant information allows subordinates to develop effective strategies or plans, which will help them to exert effort over time, in an attempt to attain their goals. The results support the proposition that setting difficult but attainable budget goals increases subordinates' budget goal level, acceptance, and commitment to the budget goal, which in turn improves job performance.

**Key words:** Budgetary participation; information processing theory; goal-setting theory; job performance; structural equation modelling (SEM) technique

## 1. Introduction

Subordinate participation in budget-setting is one of the most researched topics in management accounting literature. The results of studies into the effects of budgetary participation on subordinates' job performance have been equivocal.<sup>1</sup> The inconclusive results may be due to the lack of understanding of the mechanism by which budgetary participation may affect subordinates' job performance. Brownell and McInnes (1986), for example, relied on expectancy theory and used motivation as an intervening variable to study the impact of budgetary participation on performance. However, Brownell and McInnes's results failed to

confirm a positive relationship between budgetary participation and motivation. In an attempt to resolve Brownell and McInnes's (1986) inconclusive results, Chong and Chong (2002) relied on goal-setting theory to examine the impact of budgetary participation on performance. They found that budgetary participation affects subordinates' job performance through: (1) the increase in their budget goal commitment, and (2) the cognitive benefits derived from sharing internal information during the budget-setting process.

Nevertheless, three issues merit further investigation. First, we improve on Chong and Chong (2002) by including other important motivational factors such as budget goal level (difficulty) and budget goal acceptance within the goal-setting theory framework. For example, prior studies (e.g., Locke et al., 1981; Wier, 1993) have found that budget goal level has some influence on commitment and job performance. Leifer and McGannon (1986) found that goal acceptance and goal commitment are separate and distinguishable constructs and, as such, should not be treated as the same constructs. Shields and Shields (1998) called for future research in participative budgeting to in-

\*The authors are, respectively, Associate Professor, Accounting and Finance (M250) at the University of Western Australia and Customer Education Officer at the Department of Treasury and Finance, 200 St Georges Terrace, Perth, Western Australia 6000. They would like to thank Mahmoud Ezzamel, Chris Guilding, Chong Man Lau, Ken Peasnell, Geoff Soutar, Pauline Weetman (the editor) and two anonymous reviewers for their helpful comments and suggestions on earlier drafts of this paper. An earlier version of this paper was presented at the 2004 *British Accounting Association (BAA) Annual Conference*, York, UK and 2005 *Asian-Pacific Conference on International Accounting Issues*, Wellington, New Zealand. This research project received financial support from the Research Centre of Accounting and Finance at the University of Western Australia. Questionnaire is available upon request from Professor Chong. Correspondence should be addressed to Professor Chong at UWA Business School, the University of Western Australia, 35 Stirling Highway, Crawley, WA 6009. Tel: +618 6488 2914; Fax: +618 6488 1047; E-mail: Vincent.Chong@biz.uwa.edu.au

This paper was accepted in November 2006.

<sup>1</sup> For example, some studies (e.g. Merchant, 1981) have confirmed that budgetary participation has a positive effect on performance while other studies (e.g. Stedry, 1960; Bryan and Locke, 1967) have found the relationship to be negative and yet, few studies (e.g. Milani, 1975, Kenis, 1979) have found that there were no relationships between budgetary participation and performance.

clude other variables (such as goal acceptance) that intervene between participative budgeting and dependent variables. Second, Chong and Chong relied on a *single* theoretical framework (i.e., goal-setting theory), despite prior researchers (Feyerabend, 1981; Eisenhardt, 1988; Conlon and Parks, 1990) claim that a multi-theoretical framework can enhance our understanding of phenomena.<sup>2</sup> Third, Chong and Chong focused on the *consequences* of budgetary participation without considering its causal antecedents. This has been a major criticism of prior budgetary participation studies (see e.g., Clinton et al., 1992; Shields and Young, 1993; Shields and Shields, 1998).

Thus, the objective of this study is to attempt to partially replicate and extend Chong and Chong (2002) by developing a model (see Figure 1), which relies on a multi-theoretical framework (i.e., goal-setting theory and information-processing theory) to examine the impact of budgetary participation on subordinates' job performance.

Specifically, this study proposes that task uncertainty is an antecedent of budgetary participation. This study focuses on only one of the antecedents of budgetary participation, namely task uncertainty, as the theoretical development underpinning this study is concerned with the *internal* environment. It is suggested that the presence of task uncertainty (in term of task exceptions and task analysability) causes the need for job-relevant information and budgetary participation (Links 1, 2, 3 and 4 of Figure 1). We suggest that subordinates' participation in the budget-setting process provides the opportunity for them to gather job-relevant information which will facilitate their decision making process (Link 5, Figure 1). In addition, we propose that by relying on goal-setting theory, subordinates' participation in the budget-setting process induces higher budget goal level, budget goal acceptance and commitment (Links 6, 7 and 8 of Figure 1). It is suggested that the higher the budget goal level, the higher the level of budget goal acceptance (Link 9 of Figure 1) and

the higher the level of budget goal commitment (Link 10 of Figure 1). In addition, it is proposed that the higher the level of budget goal acceptance, the higher the level of budget goal commitment (Link 11 of Figure 1). Finally, we propose that the use of both information-processing theory and goal-setting theory suggests that the availability of job-relevant information will facilitate subordinates who have high budget goal acceptance and commitment to enhance their job performance (Links 12, 13 and 14 of Figure 1).

The remainder of this paper is organised as follows. In the next section, the theoretical model underlying the study is developed. Subsequent sections present the method employed, results, discussions and limitation of the study.

## 2. Literature review and hypotheses development

### 2.1. The relationship between task uncertainty and budgetary participation

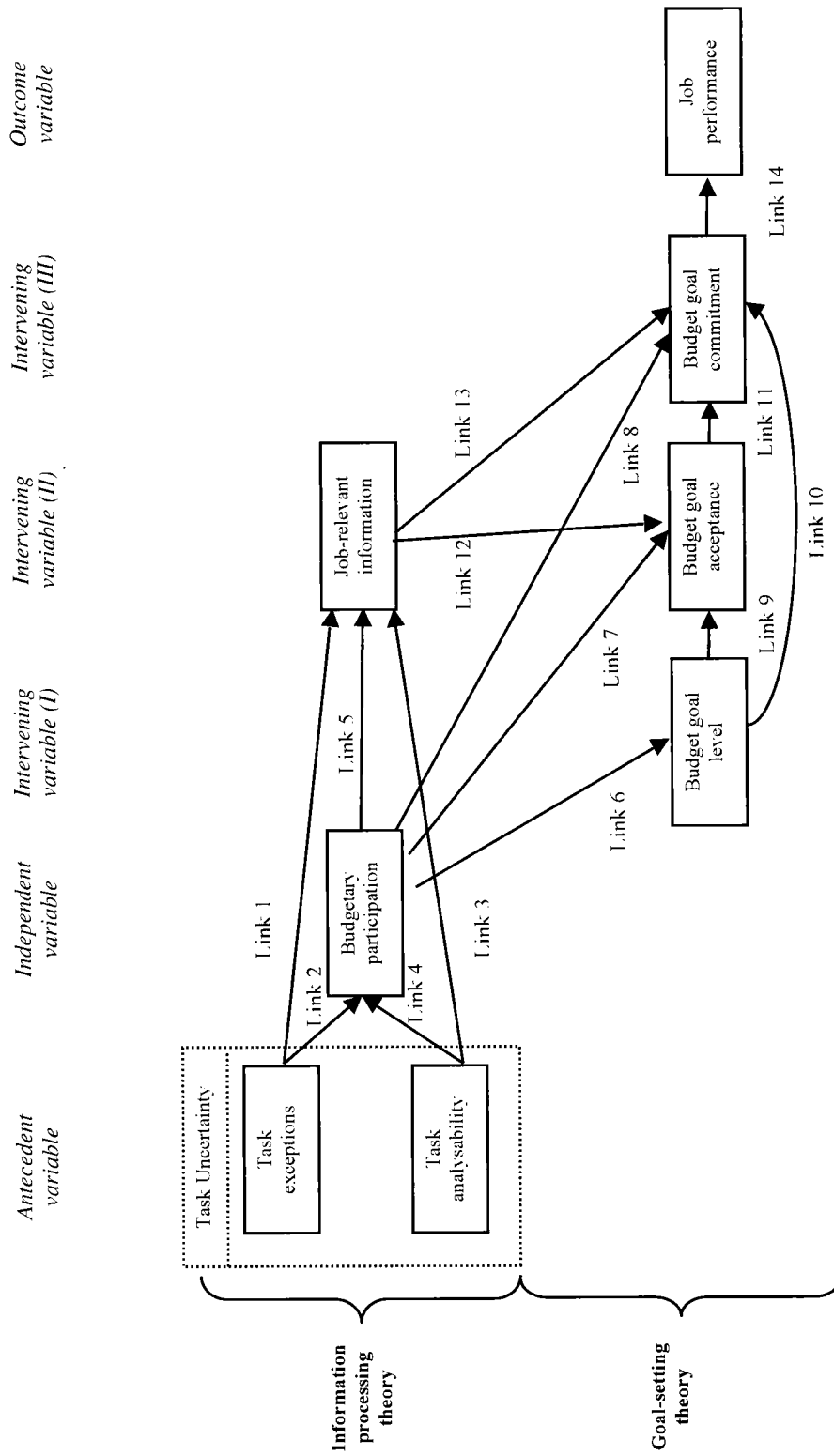
The first two hypotheses are concerned with the relationship between task uncertainty and budgetary participation. Task uncertainty is conceptualised as consisting of two dimensions: task exceptions and task analysability (see Perrow, 1967; Van de Ven and Delbecq, 1974; Withey et al., 1983; Brownell and Dunk, 1991).<sup>3</sup> Task exceptions refer to 'the frequency of unexpected and novel events that occur in the conversion process'; while task analysability refers to 'the extent to which work can be reduced to programmable mechanical steps' (Withey et al., 1983:46; Brownell and Dunk, 1991). Budgetary participation, on the other hand, is defined as "a process in which individuals, whose performance will be evaluated, and possibly rewarded, on the basis of their achievement of budgeted targets, are involved in, and have influence on, the setting of these targets" (Brownell, 1982:124; Greenberg, Greenberg and Nouri, 1984). Relying on information-processing theory (Galbraith, 1973, 1977), it is argued that 'the greater the task uncertainty, the greater the amount of *job-relevant information* that must be processed among decision-makers during task execution in order to achieve a given level of performance' (Galbraith, 1973:4, italicisation added).<sup>4</sup> This view is supported by the extant organisational and behavioural literature (e.g., Hague et al., 1971; Duncan, 1972; Van de Ven et al., 1976; Tushman and Nadler, 1978). For example, Tushman and Nadler (1978) identified that in situations involving simple and routine tasks, information-processing requirements are kept to a minimum; as such tasks can be solved by existing rules and procedures. Tasks that are not well understood prior to execution and complex in nature require additional processing of information by

<sup>2</sup> To date, the participative budgeting studies have relied on agency theory (e.g., Shields and Young, 1993), attribution theory (e.g., Nouri, et al., 1999), expectancy theory (e.g., Brownell and McInnes, 1986), goal-setting theory (e.g., Chong and Chong, 2002), and information-processing theory (e.g., Kren, 1992).

<sup>3</sup> Van de Ven and Delbecq (1974:183–184) conceptualised task exceptions as task variability and defined it as being 'the number of exceptional cases encountered in the work requiring different methods or procedures for doing the work', and task analysability is conceptualised as task difficulty and defined as the "analysability of the work itself and the extent to which there is a known procedure that specifies the sequence of steps to followed in performing the task".

<sup>4</sup> Job-relevant information reduces uncertainty, improves decision-makers' ability to make predictions, or confirms or corrects their prior expectations (see Romney and Steinbart, 2003).

**Figure 1**  
**Theoretical model**



decision-makers. Van de Ven et al. (1976:328) established that further information is necessary when task uncertainty occurs at the work unit level of the organisation; and the additional information would be obtained through the use of horizontal communication channels and both scheduled and unscheduled group meetings. Thus, subordinates faced with a high level of task uncertainty would seek additional job-relevant information through budgetary participation. This viewpoint is further supported by Mia (1987), who argued that when employees participate to obtain and process additional information about their jobs, they get a clearer understanding of their job and their levels of perceived task difficulty are reduced. Shields and Shields (1998) maintained that budgetary participation is for the sharing of internal information that is predicted to be associated with task uncertainty. Specifically, Shields and Shields found that budgetary participation exists for when there is task uncertainty. The foregoing discussion suggests that task uncertainty is an antecedent variable of budgetary participation. It is postulated that the demand for budgetary participation is caused by the subordinates' levels of task uncertainty. Thus, it is argued that the existence of budgetary participation for sharing of internal information is expected to be associated with subordinates' levels of task uncertainty.

As noted earlier, task uncertainty is conceptualised as having two dimensions: task exceptions and task analysability. It is proposed that when task exceptions are low, such tasks would be considered as either repetitious or routine and could be solved through existing procedures and rules (Tushman and Nadler, 1978). When confronted with these tasks, it is expected that subordinates require less job-relevant information for decision-making. However, when task exceptions are high, subordinates would not be able to predict the problems in advance (e.g., Perrow, 1967; Withey et al., 1983). Thus, it is suggested that subordinates who are faced with tasks that have a high number of exceptions will require additional job-relevant information. As noted earlier, subordinates can obtain additional job-relevant information through budgetary participation (e.g. Campbell and Gingrich, 1986; Mia, 1987; Shields and Shields, 1998). Thus, it follows that when task exceptions are high, the need for participation is likely to be high. Hence, it is postulated that task exceptions are expected to be positively associated with job-relevant information and budgetary participation. The following hypotheses, stated formally, are tested:

**H1(a):** There is a positive relationship between task exceptions and job-relevant information.

**H1(b):** There is a positive relationship between task exceptions and budgetary participation.

With respect to task analysability, it is suggested that readily analysable tasks may be solved by existing procedures and rules (e.g., Perrow, 1967; Withey et al., 1983). It is expected that subordinates require less job-relevant information for decision making when confronted with these tasks. However, when the level of task analysability is low, subordinates may need time to think and to search beyond existing procedures and policies. Thus, it is expected that subordinates faced with tasks that have a low level of analysability will require additional job-relevant information. This information will be obtained through participation within the budgeting process (e.g. Campbell and Gingrich, 1986; Mia, 1987; Shields and Shields, 1998). Thus, it follows that when task analysability is low, the need for participation is likely to be high. Hence, it is predicted that task analysability is expected to be negatively associated with job-relevant information and budgetary participation. The following hypotheses, stated formally, are tested:

**H2(a):** There is a negative relationship between task analysability and job-relevant information.

**H2(b):** There is a negative relationship between task analysability and budgetary participation.

## 2.2. *The relationship between budgetary participation and job-relevant information*

Our third hypothesis is concerned with the relationship between budgetary participation and job-relevant information. Job-relevant information is defined as "information that facilitates job-related decision making" (Kren, 1992:511). Prior studies (e.g., Kren, 1992; Magner et al., 1996; Chong and Chong, 2002) have examined the cognitive role of budgetary participation. These studies confirmed that budgetary participation facilitates the gathering of job-relevant information. For example, Kren (1992:513) argued that budget participation can create an environment that encourages the acquisition and use of job-relevant information. Magner et al. (1996) argued that subordinates' participation in the budget-setting process enables them to obtain information that is relevant to performing their jobs.<sup>5</sup> Magner et al. (1996:43) further argued that the act of participation allows subordinates to interact with superiors whereby subordinates can ask questions to clarify goals, work strategies, conditions in the work environ-

<sup>5</sup> Numerous non-accounting studies (e.g., Earley and Kanfer, 1985; Campbell and Gingrich, 1986) also support this argument.

ment, and other factors that are salient to their jobs. In addition, Chong and Chong (2002) found that budgetary participation provided an opportunity for subordinates to gather, exchange, and disseminate job-relevant information with their superiors or peers regarding their work environment and budget goals. Murray (1990), on the other hand, theorised that budgetary participation might help to enhance performance by providing individuals the opportunity to ask questions related to the tasks, thereby increasing their job-relevant information. Shields and Shields (1998:59) suggested that the cognitive role of budgetary participation improves a subordinate's quality of decisions as a result of sharing information with the superior.<sup>6</sup> Based on the preceding discussions, we conclude that the cognitive role of budgetary participation is expected to increase job-relevant information. Thus, stated formally, the following hypothesis is tested:

**H3:** There is a positive relationship between budgetary participation and job-relevant information.

### 2.3. The relationships between budgetary participation, budget goal level, budget goal acceptance, and budget goal commitment

Relying on goal-setting theory (Locke, 1968; Locke et al., 1981; Locke and Latham, 1990; see also Murray, 1990; Chong and Leung, 2003), it is suggested that participation in setting budget goals can influence subordinates' budget goal level and motivation.<sup>7</sup> It is suggested that setting difficult but attainable goals leads to higher performance than setting either specific moderate or easy goals (e.g., Murray, 1990; Locke and Latham, 1990). The mechanisms by which difficult goals lead to greater action is centred around three elements of motivation. These are: (1) intensity of effort, (2) duration or time, and (3) direction towards an activity (see Locke and Latham, 1990). Specifically, Locke and Latham (1990) argued that specific and difficult goals caused a greater effort to be expended over a greater period of time in comparison to those goals considered as easy or 'do your best'. They (p. 92) suggested that goals have two directional effects. 'First, they *orient* the individual toward goal-relevant activities and materials, and away from goal irrelevant ones. Second, they *activate* stored knowledge and skills that the individual possesses that are perceived as relevant to the task.' Therefore, if effort is directed towards the activity or goal, then it is more likely the goal can be reached. Thus, difficult goals in comparison to easy goals will lead to greater effort being expended, over an extended period of time providing that effort is expended towards some goal.<sup>8</sup>

Participation enhances an individual's feeling of involvement in the budget goal-setting process.

Numerous studies (Latham et al., 1978; Kenis, 1979; Kren and Liao, 1988; Murray, 1990; Wier, 1993) have proposed that budgetary participation is positively associated with budget goal level. Kren and Liao (1988), for example, argued that subordinates may be motivated to disclose information during the participation process that results in the setting of more difficult budget goal level. Murray (1990) theorised that budgetary participation may result in increased budget goal level. Wier (1993) found that budgetary participation was positively associated with budget goal level. Thus, the existing theoretical and empirical evidence suggest that budgetary participation is positively related to budget goal level.

Budget goal acceptance refers to the extent to which an individual's willingness to accept a budget goal level. Budget goal commitment, on the other hand, refers to 'the determination to achieve a goal, and the willingness to put forth effort to attain a goal' (Renn et al., 1999:107–108; see also Naylor and Ilgen, 1984; Leifer and McGannon, 1986). Prior studies (see e.g. Argyris, 1952; Becker and Green, 1962; Murray, 1990; Shields and Shields, 1998; Chong and Chong, 2002) suggested that subordinates who are allowed to participate in setting their budget goals are more likely to *accept* and *commit* to the budget goals than subordinates who are not allowed to participate in the budget-setting process. Shields and Shields (1998) argued that budgetary participation increases an individual's trust, sense of control, and ego-involvement with the organisation. Consequently, this individual is more likely to be less resistance to change and more acceptance of, and commitment to, the budget decisions.

<sup>6</sup> A number of non-accounting studies also confirmed the cognitive role of budgetary participation (see e.g., Locke et al., 1981; Locke and Latham, 1990; Latham et al., 1994).

<sup>7</sup> The implications of these studies suggested that budgetary participation provides 'positive' communication between superiors and subordinates. It is argued that budgetary participation motivates subordinates to reveal their private information in their budgets. In other words, individuals who participate in the budget-setting process do not incorporate budgetary slack in their budget and as a result, set higher goals for themselves. However, other study studies (e.g., Shields et al., 2000; Lukka, 1988) predicted and found a negative association between participative budgeting and goal level. These studies, however, relied on the economic theory of agency. Agency theory-based studies predict that subordinates have the incentive to set an *easy* (lower) budget goal level especially their rewards are based on their ability to attain the budget goal level which they participated in the setting process. The present study relies on goal-setting theory.

<sup>8</sup> Evidence from previous research (e.g. Bavelas and Lee, 1978) confirmed that goals that are specific and difficult will cause individuals to work longer and harder compared goals that are easy. For example, Bavelas and Lee (1978) found that individuals with easy goals generally stopped working on their goals sooner than those individuals who had difficult or harder goals.

Furthermore, it is argued that the intention or actions of the individual cannot be translated into the appropriate goals or behaviours without the individual acceptance of a goal (Locke 1968). Erez and Kanfer (1983) argued that employees who participated in establishing their annual budget goals, experienced the feeling of involvement and less resistance toward the goal-setting process than the employees who were not allowed to participate. Specifically, Erez and Kanfer found that budgetary participation was a valuable motivational tool in ensuring subordinates' acceptance of the budget goals. It is argued that a goal is more likely to be accepted by subordinates when they have a *voice* in setting it (see Locke and Latham, 1990).<sup>9</sup> Renn (1998:116) found that 'participation enhances one's feeling of involvement in the goal-setting process. In so doing, participation lower one's resistance to accepting an externally imposed goals'. Several studies supported the positive association between budgetary participation and budget goal commitment (see e.g., Locke, 1968; Erez et al., 1985; Erez and Arad, 1986).

In summary, the preceding discussions suggest that *budgetary participation exists to induce higher budget goal level, and promote more acceptance of, and commitment to, budget goals*. These ideas are expressed in the following hypotheses:

- H4:** There is a positive relationship between budgetary participation and budget goal level.
- H5:** There is a positive relationship between budgetary participation and budget goal acceptance.
- H6:** There is a positive relationship between budgetary participation and budget goal commitment.

#### *2.4. The relationships between budget goal level, budget goal acceptance, and budget goal commitment*

Relying on goal-setting theory, it is argued that an individual's behaviour is regulated by his or her conscious ideas and intentions. A goal is viewed as the objective or the performance level that an individual seeks to attain. If an individual is committed to goal attainment, it will influence the individual's actions and consequently performance. Furthermore, it is suggested that goal-setting influences the amount of, and duration of the effort expended (Murray, 1990; see also Locke et al., 1981; Locke and Latham, 1990). Murray (1990) argued that a more difficult goal (assuming that it has been accepted and committed) should induce more effort. Prior studies (Murray, 1990; Shields and Shields, 1998) have proposed that when sub-

ordinates are given the opportunity to set their budget goal levels, they are more likely to accept and commit to the budget goals than subordinates who are not allowed to participate in the budget goal-setting process. Furthermore, participative budgeting increases an individual's trust, sense of control, and ego involvement with the organisation (Shields and Shields, 1998). Hence, it is argued that a budget goal level is more likely to be accepted and committed by an individual who participated in setting such goal level. Thus, it is predicted that budget goal level is positively associated with budget goal acceptance and budget goal commitment. Thus, stated formally, the following hypotheses are tested:

- H7:** There is a positive relationship between budget goal level and budget goal acceptance.
- H8:** There is a positive relationship between budget goal level and budget goal commitment.

Prior studies (Locke et al., 1981; Leifer and McGannon, 1986) have confirmed that there is a positive and direct effect of goal acceptance on goal commitment. Locke et al. (1981) recognised that goal acceptance and goal commitment were similar yet separate concepts. They referred goal acceptance as being the initial agreement or acceptance of a goal, whereas goal commitment is the determination to try for a goal until it has been reached. Determination, of course, implies the expending of effort, time and direction towards the relevant activity or goal. It is argued that once a goal has been accepted, then there is subsequent commitment to that goal. In analysing studies from 1960 to 1980, Locke et al. (1981) found that in those studies where acceptance had been measured and included, most of the participants showed complete and substantial commitment to the goal. Leifer and McGannon (1986) proposed that higher levels of goal acceptance should always lead to higher levels of goal commitment. Thus, it can be concluded that when a subordinate accepts a budget goal, there will be a greater commitment to that goal in comparison to a subordinate that does not accept the budget goal. Thus, it is predicted that budget goal acceptance is positively associated with budget goal commitment. These ideas are expressed as the following hypotheses:

- H9:** There is a positive relationship between budget goal acceptance and budget goal commitment.

#### *2.5. The relationship between job-relevant information and budget goal acceptance and budget goal commitment*

Existing studies (e.g., Kren, 1992; Magner et al., 1996; see also Chong, 1996) and information-pro-

<sup>9</sup> Voice provides a subordinate with an opportunity to express his/her views about a decision (Earley and Lind, 1987).

cessing theory (see Galbraith, 1973, 1977; Tushman and Nadler, 1978) have provided evidence to suggest that as task uncertainty increases, the need for job-relevant information becomes increasingly important and useful to managers for decision-making purposes.

Relying on goal-setting theory, it is argued that once a subordinate has accepted a budget goal, which is specific and difficult but attainable, the three direct mechanisms (i.e., effort, persistence and direction of attention) of goal-setting are brought into play.<sup>10</sup> These three direct mechanisms of goal-setting are motivational because it requires individuals to take actions involving hard works to accomplish the objective. If an individual finds that these mechanisms are not sufficient (e.g., due to the presence of task uncertainty), he/she may attempt to discover other better strategies for performing the task. Thus, we argue that with the presence of task uncertainty, the three direct mechanisms *alone* are not sufficient to help a subordinate to attain his/her goal. This is because subordinates need to develop task-relevant strategies, in order to discover *how* their goal can be reached. Thus, we postulate that the presence of task uncertainty motivates subordinates to exert *greater effort* directed toward strategy development (Locke and Latham, 1990; see also Hirst, 1987). The cognitive effect of budgetary participation enables subordinates to develop strategies to achieve the relevant task, and consequently these task strategies ensure that the subordinates direct their effort and attention towards the appropriate goal (see Chong and Chong, 2002). Campbell et al., (1970), for example, argued that goal-setting helped to clarify the task to be performed to the extent that they give subordinates explicit knowledge of where to direct their effort. Hirst (1987) theorised that the cognitive activities, such as the interpretation, search and selection of job-relevant information, would allow subordinates to put forth additional effort to attain their goal.

In summary, we expect that with the presence of task uncertainty, participative budget goal-setting stimulates individual to develop effective strategies, which involves both the search for, and selection of, valid strategies, for attaining goals (Locke et al., 1981; Naylor and Ilgen, 1984; Hirst, 1987; Locke and Latham, 1990). In the present study, we expect that there is no direct relationship between job-relevant information and job performance for our structural model (see Figure 1). We offer the following two plausible reasons. First, our structural model includes task uncertain-

ty as an antecedent variable to budgetary participation. Second, relying on information-processing theory and goal-setting theory, we argue that the presence of task uncertainty will initially direct subordinates' effort toward strategy development and task learning, rather than the three direct goal mechanisms (i.e., effort, persistence and direction of attention) of goal setting. Effort directed toward strategy development and task learning, leads to delayed performance increases (Locke et al., 1981; Hirst, 1987; Locke and Latham, 1990; Bonner and Sprinkle, 2002). This view is consistent with Locke et al. (1981) who suggest that the cognitive factors (such as job-relevant information) are indirectly associated with performance. We propose that the availability of job-relevant information would enable subordinates to formulate effective strategies or plans, which will assist them to exert additional effort for budget goal attainment. We argue that the availability of job-relevant information would *initially* increase subordinates' budget goal acceptance.<sup>11</sup> Budget goal acceptance is subordinates' initial agreement with the budget goal (Locke, 1968; Locke and Latham, 1990). It implies moderated degree of acceptance of budget goal. Budget goal commitment, on the other hand, suggests subordinate's resistance to changing the budget goal at a later point in time. We further argue that as subordinates gather more job-relevant information which enables them to formulate effective strategies or plans for budget goal attainment, they will exert higher degree of commitment towards budget goal. In other words, a higher degree of commitment is viewed as the more inclusive concept in that it refers to one's attachment to or determination to achieve a budget goal. Taken together, we postulate that job-relevant information is positively associated with budget goal acceptance and budget goal commitment. This idea is expressed in the following hypotheses:

- H10:** There is a positive relationship between job-relevant information and budget goal acceptance.
- H11:** There is a positive relationship between job-relevant information and budget goal commitment.

## 2.6. The relationship between budget goal commitment and job performance

The last hypothesis is concerned with the relationship between budget goal commitment and job performance. As noted earlier, a primary prediction of goal-setting theory is that setting specific, difficult but attainable goals will be beneficial to performance compared to easy goals. Reviews of goal-setting studies showed that, in general, once individuals are committed to the budget goals, they will increase the effort required to achieve those goals. Individuals who are committed to spe-

<sup>10</sup> See Locke et al. (1981) for a detailed discussion of the terms effort, persistence and direction.

<sup>11</sup> Budget goal acceptance is subordinates' initial agreement with the budget goal (Locke, 1968; Locke and Latham, 1990).



cific, difficult but attainable goals will try harder and persist longer, and will be more effective than less committed individuals (Locke and Latham, 1990). As a result, the more effort that is applied to goal attainment, the greater the chance of goal attainment, thus improving job performance. Thus, it is concluded that budget goal commitment should be positively associated with job performance. Numerous studies (see e.g., Earley and Kanfer, 1985; Erez et al., 1985; Erez, 1986; Erez and Arad, 1986; Locke et al., 1988; Locke and Latham, 1990; Wofford et al., 1992; Shields and Shields, 1998; Fisher et al., 2002; Wentzel, 2002) provided empirical support for this proposed relationship between budget goal commitment and job performance. Shields and Shields (1998) argued that the motivational role of budgetary participation enhances budget goal commitment, which in turn, improved performance. Fisher et al. (2002:32) argued that 'there should be a positive relation between commitment and subordinates performance'. Specifically, they found that subordinates in dyads that do reach agreement will be more committed to attaining their budget goals and perform at higher levels. In contrast, subordinates in dyads that do not reach agreement will be less committed to attaining their budget goals and perform at lower levels. Thus, the existing theoretical and empirical evidence suggest that the higher the level of budget goal commitment, the higher the level of subordinates' job performance. Stated formally, the following hypothesis is tested:

**H12:** There is a positive relationship between budget goal commitment and job performance.

### 3. Research method

#### 3.1. Sampling selection

A survey methodology approach was used in this study. A total of 185 manufacturing firms located in Western Australia and New South Wales were randomly chosen from the 2001 *Who's Who of Australia* electronic database. The criterion for the sample inclusion was that all respondents are middle-level managers and they have budget responsibility. A total of 435 middle-level managers were identified from the 185 manufacturing firms for the project. Telephone contact was then made with each organisation to verify and confirm that the managers selected were still the incumbent of the position. From this confirmation, 355 middle-level managers were then selected as part of the final sample. Eighty managers were not included in the final sample for a number of reasons. First, 43 managers had since left their respective organisation; second, 16 managers had retired; and third, 21 managers had moved to other areas of their organisation.

Each participant was sent a covering letter, a questionnaire and a prepaid self-addressed envelope. The prepaid self-addressed envelope facilitates correspondence and ensures that the questionnaires are returned directly to one of the researchers. The questionnaires were pre-coded to identify those non-respondents so that follow-up letters can be sent. A total of 162 questionnaires were received, giving a response rate of 45.63%. Of the 162 questionnaires, 24 were excluded from the study for incomplete responses and three were considered as outliers.<sup>12</sup> This resulted in 135 usable responses for our data analysis.

The organisations have an average of 202 employees. Each manager, on average, had a responsibility for 30 employees. The average age of each participant was 43 years. The average length of time spent in the position was nearly five years and each manager had, on average, 12 years experience in his or her current area of responsibility. Most managers had been employed by their respective organisation for an average of 10 years.

#### 3.2. Measurement of variables

*Task exceptions and task analysability* were evaluated by a nine-item, seven-point Likert-type scale developed by Withey et al. (1983). Budgetary participation was measured by a six-item, seven-point Likert-type scale developed by Milani (1975). *Job-relevant information* was measured by a three-item, seven-point Likert-type scale developed by Kren (1992). *Budget goal level* was measured by a five-item, five-point Likert-type scale developed by Kenis (1979). *Budget goal acceptance* was measured by a three-item, seven-point Likert-type scale developed originally by Leifer and McGannon (1986), which was subsequently validated by Renn et al. (1999). *Budget goal commitment* was measured by a two-item, five-point Likert-type scale developed by Tubbs (1993). Job performance was measured by a scale developed by Mahoney et al.

<sup>12</sup> In this study, three responses were considered as outliers. These three responses were from firms, which have employed relatively more employees than the rest of the firms. These three firms have employed 2,200, 10,000 and 15,000 employees, respectively. A univariate assessment of the values of the standardized scores reveals that two responses exceeded the recommended threshold standardised values (Z scores) range from  $\pm 3$  to  $\pm 4$  (Hair et al., 1998:65). The third response has a standardised value (Z score) of 1.18, but given that the firm has employed 2,200 employees and the average mean score for employees in other firms was 202, we treat this third response as an outlier. We believe these three responses are 'truly aberrant' and not representative of any observations of the population (see Hair et al., 1998:66). The structural equation modeling (SEM) analyses were repeated before the exclusion of the three outliers. The results revealed that there were no differences between SEM results based on 138 (before exclusion of the three responses) and those based on 135 responses (after the exclusion of the three responses). These results imply that the results are relatively robust to variations in the size (i.e. number of employees) of sample organisations.

**Table 1**  
**Descriptive statistics and Pearson correlation matrix (n = 135)**

Variable	Actual (Theoretical) Range	Mean	S.D.	1	2	3	4	5	6	7	8
1. Task exceptions	1.80-7.00 (1.00-7.00)	4.640	1.183	1.000							
2. Task analysability	1.00-6.25 (1.00-7.00)	3.632	1.160	0.454**	1.000						
3. Budgetary participation	1.17-7.00 (1.00-7.00)	5.188	1.171	-0.249**	0.058	1.000					
4. Job-relevant Information	2.33-7.00 (1.00-7.00)	5.082	1.060	-0.030	0.320**	0.251**	1.000				
5. Budget goal level	1.80-4.80 (1.00-5.00)	3.693	0.620	-0.186*	-0.025	0.194*	0.007	1.000			
6. Budget goal acceptance	1.33-7.00 (1.00-7.00)	5.084	1.252	-0.216*	0.161	0.540**	0.268*	0.337**	1.000		
7. Budget goal commitment	1.00-5.00 (1.00-5.00)	4.385	0.775	-0.118	0.199**	0.491**	0.317**	0.347**	0.678**	1.000	
8. Job performance	4.00-7.00 (1.00-7.00)	5.733	0.725	0.007	0.142	0.263**	0.145	0.242**	0.187*	0.357**	1.000

\*Significant at the 0.05 level (two-tailed); \*\*Significant at the 0.01 level (two-tailed)

(1963, 1965). This instrument is a nine-item, seven-point Likert-type scale.<sup>13</sup> Consistent with prior research (e.g., Kren, 1992; Chong and Chong, 2002), this study use the single overall job performance rating in our data analysis and hypothesis testing.

## 4. Results

Table 1 shows the descriptive statistics and Pearson correlation for the independent and dependent variables used in the study.<sup>14</sup>

### 4.1. Analytical technique

The structural equation modeling (SEM) technique was used to test our theoretical model (Figure 1) and hypotheses. The SEM technique is based on the *EQS* structural equation computer program (Bentler, 1995). *EQS* provides a variety of statistics to assess the validity of our model. Evaluation of the model fit was assessed by three fit indices: (1) the Bentler-Bonnet normed fit index (NFI), (2) the Bentler-Bonnet non-normed fit index (NNFI) and (3) the comparative fit index (CFI) (Bentler and Bonnet, 1980; Bollen and Long, 1992). Values greater than 0.90 are desirable for each fit index. *EQS* includes sophisticated model specification techniques such as the Lagrange Multiplier (LM) and Wald's test (Bentler, 1996). This study adopted a two-step approach recommended by Anderson and Gerbing (1988). First, the measurement model is evaluated by confirmatory factor analysis. Second, the structural model is used to test for the hypothesised relationships.

### 4.2. Measurement model

The measurement properties of the various scales used in our study were examined through estimation of a measurement model. Table 2 shows the maximum likelihood standardised loadings along with composite reliability and variance extracted estimates.

Three indices from the measurement model provide strong support for the convergent validity of our scales (i.e., task exceptions, task analysability, budgetary participation, job-relevant information, budget goal level, budget goal acceptance and budget goal commitment). First, the standardised loadings, which are indicators of the degree of association between a scale item and latent variable,

were each significant ( $p < 0.05$ ). Second, the composite reliability, analogous to Cronbach alpha coefficient (Cronbach, 1951), was 0.79 or greater for each scale. These results suggest high internal consistency of the items comprising the various scales. Third, each of the *variance extracted estimates*, which represent the amount of variance captured by a construct relative to the variance due to random measurement error, exceeded the minimum level of 0.50 that was recommended by Fornell and Larcker (1981). Discriminant validity of the seven scales was assessed by comparing the variance extracted estimates with the squared correlations between the latent constructs (Fornell and Larcker, 1981). Table 3 reveals that the squared correlations were all less than the variance extracted estimates (see Table 2). Taken together, these results provided strong support for the discriminant validity of the seven scales.

### 4.3. Structural model and tests for hypotheses

Our structural model is analysed by aggregating only those items reflecting a common construct based on the measurement model analysis. Our structural model shows a very good fit to the data ( $\chi^2 = 19.05$ ,  $df = 13$ ,  $p < 0.122$ ;  $NFI = 0.925$ ,  $NNFI = 0.943$ ,  $CFI = 0.973$ ). To test our hypotheses, we rely on the standardised parameter estimates for our structural model, as shown in Figure 2.

The results revealed that there was a positive *but* not significant relationship between task exceptions and job-relevant information (standardised path coefficient = 0.088, n.s.). Thus, hypothesis H1(a) is not supported. As expected, the results indicated that there was a positive and statistically significant association between task exceptions and budgetary participation (standardised path coefficient = 0.323,  $p < 0.05$ ). This result supports hypothesis H1(b). Consistent with our theoretical expectations, the standardised parameter estimates between: (1) task analysability and job-relevant information (standardised path coefficient =  $-0.355$ ,  $p < 0.05$ ) and (2) task analysability and budgetary participation (standardised path coefficient =  $-0.261$ ,  $p < 0.05$ ), were both negative and statistically significant. Thus, hypotheses H2(a) and H2(b) are supported.

The results presented in Figure 2 revealed that there was a positive and statistically significant relationship between budgetary participation and job-relevant information (standardised path coefficient = 0.168,  $p < 0.05$ ), thereby supporting hypothesis H3.

Taken together, these results support the major premise of information-processing theory which proposes that the higher the level of task uncertainty, the greater the amount of job-relevant information that must be processed among decision-makers during task execution in order to

<sup>13</sup> This instrument consists of a single overall performance rating with ratings on other eight dimensions of managerial activities. The eight dimensions of managerial activities are: planning, investigating, coordinating, evaluating, supervising, staffing, negotiating and representing (Mahoney et al., 1963, 1965).

<sup>14</sup> We tested for non-response bias by the approach suggested by Oppenheim (1966). The results reveal that there were no statistically significant differences in the mean scores between the early and late responses.

**Table 2**  
**Results of confirmatory factor analysis**

	<i>Construct and scale item</i>	<i>Standardised loading<sup>a</sup></i>	<i>Composite reliability</i>	<i>Variance extracted estimate</i>
Task exceptions	1.	0.72	0.85	0.55
	2.	0.49		
	3.	0.66		
	4.	0.87		
	5.	0.87		
Task analysability	1.	0.56	0.80	0.51
	2.	0.57		
	3.	0.85		
	4.	0.83		
Budgetary participation	1.	0.83	0.88	0.56
	2.	0.55		
	3.	0.59		
	4.	0.89		
	5.	0.85		
	6.	0.69		
Job-relevant information	1.	0.55	0.83	0.64
	2.	1.00		
	3.	0.78		
Budget goal level	1.	0.85	0.86	0.55
	2.	0.62		
	3.	0.97		
	4.	0.69		
	5.	0.50		
Budget goal acceptance	1.	0.81	0.79	0.74
	2.	0.98		
	3.	0.77		
Budget goal commitment	1.	0.86	0.92	0.86
	2.	0.99		

<sup>a</sup>All standardised loadings are significant at  $p < 0.05$ .

achieve a given level of performance (Galbraith, 1973, 1977; see also Romney and Steinbart, 2003).

In addition, the results indicated that: (1) there was a positive and statistically significant relationship between budgetary participation and budget goal level (standardised path coefficient = 0.194,  $p < 0.05$ ), (2) there was a positive and statistically significant relationship between budgetary participation and budget goal acceptance (standardised path coefficient = 0.453,  $p < 0.05$ ), and (3) there was a positive and statistically significant relationship between budgetary participation and budget goal commitment (standardised path coefficient =

0.153,  $p < 0.05$ ). Thus, hypotheses H4, H5, and H6 are supported.

Support is also found for hypotheses H7, H8 and H9, as significant results were found for the relationships between: (1) budget goal level and budget goal acceptance (standardised path coefficient = 0.248,  $p < 0.05$ ), (2) budget goal level and budget goal commitment (standardised path coefficient = 0.145,  $p < 0.05$ ), and (3) budget goal acceptance and budget goal commitment (standardised path coefficient = 0.507,  $p < 0.05$ ). Taken together, these results support the major premise of goal-setting theory (see Locke et al., 1981; Locke and Latham, 1990).

**Table 3**  
**Discriminant validity test**

	<i>Correlation</i>	<i>Squared correlation</i>
TE-TA	0.454	0.206
TE-BP	-0.249	0.062
TE-JRI	-0.030	0.001
TE-BGL	-0.186	0.035
TE-BGA	-0.216	0.047
TE-BGC	-0.118	0.014
TA-BP	0.058	0.003
TA-JRI	0.320	0.102
TA-BGL	-0.025	0.001
TA-BGA	0.161	0.026
TA-BGC	0.199	0.040
BP-JRI	0.251	0.063
BP-BGL	0.194	0.038
BP-BGA	0.540	0.292
BP-BGC	0.491	0.241
JRI-BGL	0.007	0.001
JRI-BGA	0.268	0.072
JRI-BGC	0.317	0.100
BGL-BGA	0.337	0.114
BGL-BGC	0.347	0.120
BGA-BGC	0.678	0.460

TE = task exceptions; TA = task analysability; BP = budgetary participation; JRI = job-relevant information; BGL = budget goal level; BGA = budget goal acceptance; BGC = budget goal commitment.

The results presented in Figure 2 showed that there was a positive and statistically significant relationship between job-relevant information and budget goal acceptance (standardised path coefficient = 0.152,  $p < 0.05$ ), thereby supporting hypothesis H10. Support was also found for hypothesis H11 which states that there was a positive and statistically significant relationship between job-relevant information and budget goal commitment (standardised path coefficient = 0.142,  $p < 0.05$ ). Finally, the results indicated that there was a positive and statistically significant relationship between budget goal commitment and job performance (standardised path coefficient = 0.358,  $p < 0.05$ ), thereby supporting hypothesis H12.

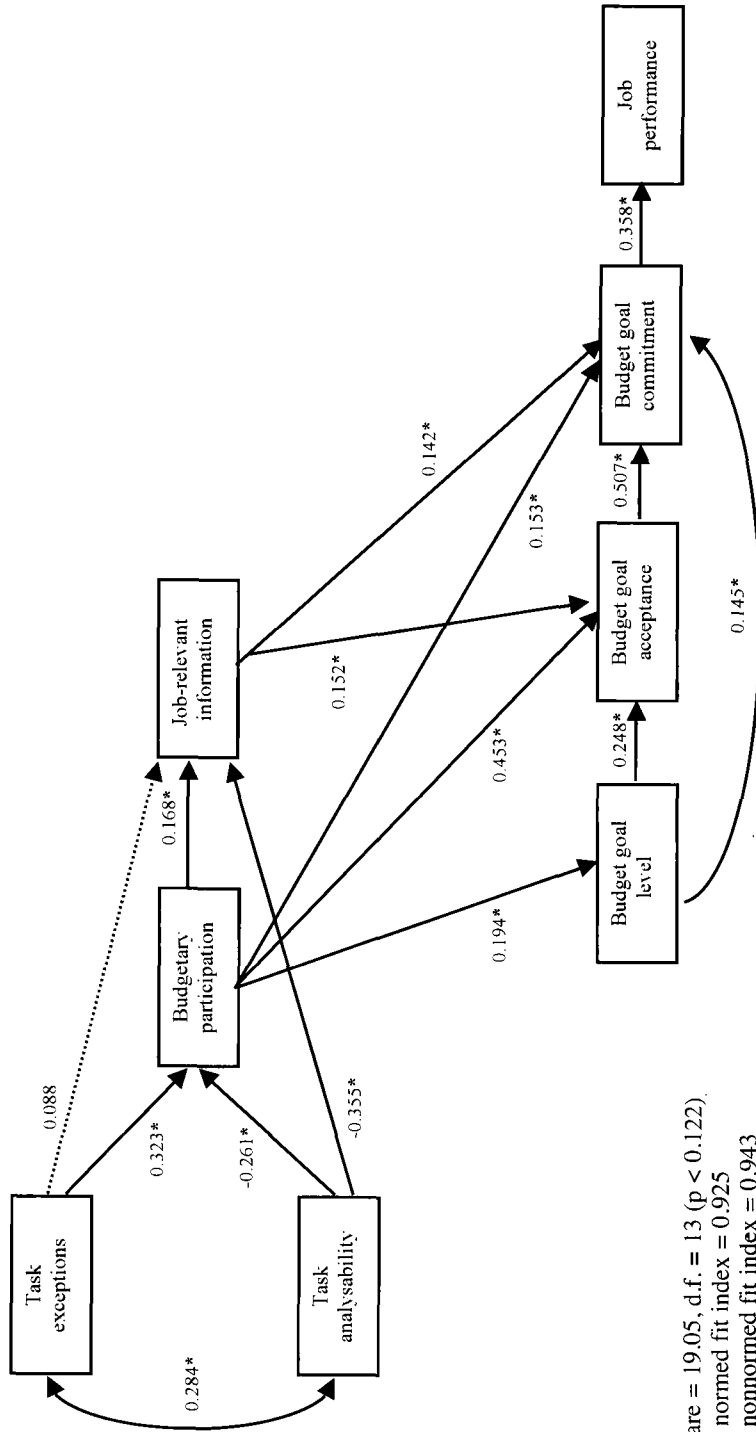
### 5. Conclusions and limitations

This study attempts to extend prior participative budgeting studies by incorporating a causal antecedent of participative budgeting (i.e., task uncertainty) and additional motivational variables (i.e., budget goal level, budget goal acceptance and budget goal commitment), relying on information-processing theory and a goal-setting theoretical framework. The results of our study suggest that task uncertainty is an important antecedent of budgetary participation. Specifically, our results concluded that when subordinates are faced with tasks which have a high number of exceptions and

a low level of analysability, their needs for participative budgeting increases. In other words, it is suggested that budgetary participation is caused by the degree of task exceptions and task analysability. More specifically, our results reveal that subordinates who face with tasks which have low level analysability will require additional job-relevant information. It is noteworthy that the results of our study are consistent with those of Shields and Shields (1998:60), who claimed that the existence of participative budgeting for sharing internal information is predicted to be associated with task uncertainty. Furthermore, the information needs of subordinates' under various degree of task uncertainty are also consistent with Galbraith (1973:4) who argued that '...the greater the task uncertainty, the greater the amount of information that must be processed among decision-makers during task execution in order to achieve a given level of performance.'

This study contributes to the existing literature by relying on information-processing theory and goal-setting theory to further our understanding of how participative budgeting really works, and the process by which it may happen. Specifically, the results of this study were consistent with our theoretical expectations. Our study confirmed that higher levels of budgetary participation led to increased job-relevant information under condition of high task uncertainty. This result supports the

**Figure 2**  
Structural model with standardised path coefficients



Model chi-square = 19.05, d.f. = 13 ( $p < 0.122$ ).  
 Bentler-Bonett normed fit index = 0.925  
 Bentler-Bonett nonnormed fit index = 0.943  
 Comparative fit index (CFI) = 0.973

\*Path parameter estimates are significant at  $p < 0.05$

information-processing theory and the cognitive role of budgetary participation, which is consistent with numerous prior empirical studies (e.g., Kren, 1992; Magner et al., 1996; Shields and Shields, 1998). These results provide additional evidence to support the proposition that the degree of task uncertainty causes increased information needs from subordinates, who in turn, increased their desire for the opportunity to participate.

The results of our study also confirmed that participation in setting the budget influences subordinates' budget goal level and motivations (i.e., budget goal acceptance and budget goal commitment), which ultimately enhances their job performance. The results were also consistent with our theoretical expectations. Specifically, our results confirmed that (1) high level of budgetary participation is related to higher budget goal level, and (2) high level of budgetary participation is related to higher budget goal acceptance and budget goal commitment. These results lend further empirical support to previous accounting studies (e.g., Kren and Liao, 1988; Wier, 1993). Taken together, these results provide support for the application of goal-setting theory and the motivational role of budgetary participation.

Most importantly, our study reveals that budgetary participation exists for three purposes: (1) cognitive, (2) planning and goal-setting, and (3) motivational, when there is task uncertainty. First, our results suggest that budgetary participation exists initially for *cognitive* purpose when there is task uncertainty. In other words, the demand for budgetary participation is caused by task uncertainty. The cognitive role of budgetary participation provides subordinates the opportunity to gather and share job-relevant information with their superiors and peers. In doing so, they can gain a better understanding of the task at hand.

Second, our results suggest that the reason for the existence of budgetary participation is for planning and goal-setting and for motivational purposes. Specifically, our results suggest that budgetary participation allows subordinates the opportunity

to set difficult but attainable budget goals. The opportunity to participate in planning and budget goal-setting resulted in an increase in their feelings of ego-involvement, sense of control and trust, which in turn, causes more acceptance of, and commitment to, their budget goals. It is found that highly committed subordinates will exert additional effort in an attempt to attain their budget goals, which ultimately enhances their job performance.

Several limitations of the study are noted. First, this study did not take into account other potential antecedents of budgetary participation such as information asymmetry (Shields and Young, 1993; Shields and Shields, 1998), perceived environmental uncertainty (Chong and Chong, 1997; Shields and Shields, 1998), personality variables such as locus of control (Mia, 1987; Chong and Eggleton, 2003), and strategy (Chong and Chong, 1997). In addition, this study did not consider other potential intervening variables such as budget-based incentive scheme (Shields and Young, 1993), organisational commitment (Nouri and Parker, 1998; Chong et al., 2006), and budget goal feedback (Locke and Latham, 1990).

Second, our study has examined only one aspect of the cognitive role of budgetary participation, namely to communicate job-relevant information. While it is possible that subordinates can withhold their private information in the budget-setting process, thereby creating budgetary slack, our study did not attempt to test such effect. Thus, future research may extend our study to investigate the impact of budgetary participation on budgetary slack within the goal-setting theory framework as proposed in our study. Third, the sample for our study was selected from the manufacturing industries. Therefore, generalisation of the results of our study to other industries such as financial services industries should be done cautiously. Further research involving the financial services industries would be worthwhile. Fourth, this study used a self-rating scale to measure job performance, which would lead to the problem associated with higher leniency error and lower variability error in the score (Prien and Liske, 1962; Thornton, 1968). Fifth, the use of Mahoney et al.'s (1963, 1965) performance scale is potentially a problem as it measures overall job (managerial) performance rather than budget-related performance. Furthermore, as all responses of this study came from the same manager to a set of survey items, the potential problem of common method biases may exist.<sup>15</sup>

Finally, our path (structural) model implies causality. However, the survey method employed in our study allows for examination of statistical associations at one point in time. The various statements about the direction of relationships proposed in this study can only be made in terms of the consistency of the results with the effects pro-

<sup>15</sup> *Common Method Biases* are a problem as they are one of main sources of measurement error (Podsakoff et al., 2003). It has been argued that measurement error threatens the validity of the conclusions about the relationships between measures and has both a random and a systematic component (Bagozzi and Yi, 1991; Nunnally, 1978). For a critical review of the literature and recommended remedies of Common method biases, see Podsakoff et al. (2003). We conducted the *Harman's one-factor test* to see the extent to which common method variance was a concern. A factor analysis was conducted on all items measuring the eight variables. We obtained an eight-factor solution using the eigenvalue greater than one criterion. Our factor analysis result explained 66.02% of the variance. The first factor accounted for only 11.21% of the variance. Given that no single factor emerged explaining majority of the variance, we conclude that common method variance does not seem to be a significant threat to our results obtained.

posed in the theoretical discussions. The use of a different research method, such as longitudinal field study, would be appropriate to systematically investigate the theoretical causal relationships proposed in our study.

## References

- Anderson, J.C. and Gerbing, D.W. (1988). 'Structural equation modelling in practice: A review and recommended two-step approach'. *Psychological Bulletin*, 411–423.
- Argyris, C. (1952). *The Impact of Budgets on People*. Controllership Foundation.
- Bagozzi, R.P. and Yi, Y. (1991). 'Multitrait-multimethod matrices in consumer research.' *Journal of Consumer Research*, 17: 426–439.
- Bavelas, J. and Lee, E.S. (1978). 'Effect of goal level on performance: A trade-off of quantity and quality'. *Canadian Journal of Psychology*, 32: 219–240.
- Becker, S. and Green, D. (1962). 'Budgeting and employee behaviour'. *Journal of Business*, (October): 392–402.
- Bentler, P. M. (1996). *EQS Structural Equation Program Manual*. Encino, CA: Multivariate Software, Inc.
- Bentler, P.M. and Bonnet, D.G. (1980). 'Significance tests and goodness-of-fit in the analysis of covariance structure'. *Psychological Bulletin*: 588–600.
- Bentler, P. M. (1986). *Lagrange Multiplier and Wald Tests for EQS and EQS/PC*. Los Angeles: BMSP Statistical Software.
- Bollen, K. and Long, I.S. (1992). 'Tests for structural equation models'. *Sociological Methods and Research*: 123–131.
- Bonner, S.E. and Sprinkle, G.B. (2002). 'The effects of monetary incentive on effort and task performance: Theories, evidence and a framework for research'. *Accounting, Organizations and Society*, (27): 303–345.
- Brownell, P. (1982). 'Participation in the budgeting process: When it works and when it doesn't'. *Journal of Accounting Literature*, 1(2): 124–153.
- Brownell, P. and McInnes, M. (1986). 'Budgetary participation, motivation and managerial performance'. *The Accounting Review*, (4): 587–600.
- Brownell, P. and Dunk, A.S. (1991). 'Task uncertainty and its interaction with budgetary participation and budget emphasis: Some methodological issues and empirical investigation'. *Accounting, Organizations and Society*, 16(8): 693–793.
- Bryan, J.F. and Locke, E. (1967). 'Goal-setting as a means of increasing motivation'. *Journal of Applied Psychology*, 31(3): 274–277.
- Campbell, J.P., Dunnette, M.D., Lawler, E.E. and Weick, K.E. (1970). *Managing Behaviour, Performance and Effectiveness*. New York: McGraw-Hill.
- Campbell, D.J. and Gingsrich, K.F. (1986). 'The interactive effects of task complexity and participation on task performance: A field experiment'. *Organizational Behavior and Human Decision Processes*: 162–180.
- Chong, V.K. (1996). 'Management accounting systems, task uncertainty and managerial performance: A research note'. *Accounting, Organizations and Society*, 21(5): 415–421.
- Chong, V.K. and Chong, K.M. (1997). 'Strategic choices, environmental uncertainty and SBU performance: A note on the intervening role of management accounting systems'. *Accounting and Business Research*: 268–276.
- Chong, V.K. and Chong, K.M. (2002). 'Budget goal commitment and informational effects of budget participation on performance: A structural equation modelling approach'. *Behavioral Research in Accounting*, 14: 65–86.
- Chong, V.K. and Eggleton, I.R.C. (2003). 'The decision-facilitating role of management accounting systems on managerial performance: The influence of locus of control and task uncertainty'. *Advances in Accounting*, 20: 165–197.
- Chong, V.K. and Leung, S.T. (2003). 'Testing a model of the motivational role of budgetary participation on job performance: A goal-setting theory analysis'. *Asian Review of Accounting*, 11(1): 1–17.
- Chong, V.K., Eggleton, I.R.C. and Leong, M.K.C. (2006). 'The multiple roles of participative budgeting on job performance'. *Advances in Accounting*, 22: 67–95.
- Clinton, B.D., Hall, T.W., Hunton, J.E. and Pierce, B.J. (1992). 'Perceptions of superior/subordinate task-specific expertise as a moderator of participative budgeting outcomes'. *Advances in Accounting*: 85–106.
- Conlon, E.J. and Parks, J.M. (1990). 'Effects of monitoring and tradition on compensation arrangements: An experiment with principal-agent relationships'. *Academy of Management Journal*: 603–622.
- Cronbach, L.J. (1951). 'Coefficient alpha and the internal structure of tests'. *Psychometrika*: 297–334.
- Duncan, R.B. (1972). 'Multiple decision-making structures in adapting to environmental uncertainty: The impact on organizational effectiveness'. *Human Relations*, 26(3): 273–291.
- Earley, P.C. and Kanfer, R. (1985). 'The influence of component participation and role models on goal acceptance, goal satisfaction and performance'. *Organizational Behaviour and Human Decision Processes*, 36: 378–390.
- Earley, P.C. and Lind, E. A. (1987). 'Procedural justice and participation in task selection: The role of control in mediating justice judgments'. *Journal of Personality and Social Psychology*, 52: 1148–1160.
- Eisenhardt, K.M. (1988). 'Agency and institutional theory explanations: The case of retail sales compensation'. *Academy of Management Journal*: 488–511.
- Erez, M. (1986). 'The congruence of goal-setting strategies with socio-cultural values, and its effect on performance'. *Journal of Management*, 12: 585–592.
- Erez, M. and Kanfer, F.H. (1983). 'The role of acceptance in goal-setting and task performance'. *Academy of Management Review*, 8: 454–463.
- Erez, M., Earley, P.C. and Hulin, C.L. (1985). 'The impact of participation on goal acceptance and performance: A two-step model'. *Academy of Management Journal*, 28(1): 50–66.
- Erez, M. and Arad, R. (1986). 'Participative goal-setting: Social, motivational and cognitive factors'. *Journal of Applied Psychology* 71(4): 591–597.
- Feyerherband, P.K. (1981). *Realism, Rationalism and Scientific Method*. Cambridge: Cambridge University Press.
- Fisher, J., Frederickson, J.R. and Pfeffer, S.A. (2002). 'The effect of information asymmetry on negotiated budgets: An empirical investigation'. *Accounting, Organizations and Society*, 27: 27–43.
- Fornell, C. and Larcker, D.F. (1981). 'Evaluating structural equation models with observable variables and measurement error'. *Journal of Marketing Research*: 39–50.
- Galbraith, J.R. (1973). *Designing Complex Organizations*. Massachusetts: Addison Wesley, Reading.
- Galbraith, J.R. (1977). *Designing Complex Organizations*. Massachusetts: Addison-Wesley Publishing Company.
- Greenberg, P., Greenberg, R. and Nouri, H. (1994). 'Participative budgeting: A meta-analytic examination of methodological moderators'. *Journal of Accounting*



- Literature*, 13: 117–141.
- Hague, J., Aiken, M. and Marrett, C.B. (1971). 'Organization structure and communications'. *American Sociological Review*: 860–871.
- Hair, J.F.Jr., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998). *Multivariate Data Analysis with Readings*. London: Prentice Hall International (UK) Ltd.
- Hirst, M.K. (1987). 'The effects of setting budget goals and task uncertainty on performance'. *The Accounting Review*, LXII(4): 774–784.
- Kenis, I. (1979). 'Effects of budgetary goal characteristics on managerial attitudes and performance'. *The Accounting Review*: 707–721.
- Kren, L. (1992). 'Budgetary participation and managerial performance: The impact of information and environmental volatility'. *The Accounting Review*, 67(3): 511–526.
- Kren, L. and Liao, W.M. (1988). 'The role of accounting information in the control of organizations: A review of the evidence'. *Journal of Accounting Literature*, 7: 280–309.
- Latham, G.P., Mitchell, T.R. and Dossett, D.L. (1978). 'The importance of participative goal-setting and anticipated rewards on goal difficulty and job performance'. *Journal of Applied Psychology*: 163–171.
- Latham, G.P., Winters, D.C. and Locke, E.A. (1994). 'Cognitive and motivational effects of participation: A mediator study'. *Journal of Organizational Behaviour*, 15: 49–63.
- Leifer, R. and McGannon, K. (1986). 'Goal acceptance and goal commitment: Their differential impact on goal setting theory'. *National Meeting of the Academy of Management*, Organizational Behaviour Division.
- Locke, E.A. (1968). 'Toward a theory of task motivation and incentives'. *Organizational Behaviour and Human Performance*, 3: 157–189.
- Locke, E.A., Shaw, K.N., Saari, L.M. and Latham, G.P. (1981). 'Goal-setting and task performance: 1969–1980'. *Psychological Bulletin*: 125–152.
- Locke, E.A., Latham, G.P. and Erez, M. (1988). 'The determinants of goal commitment'. *Academy of Management Review*, 13: 23–29.
- Locke, E.A. and Latham, G.P. (1990). *A Theory of Goal-setting and Task Performance*. New York: Prentice Hall.
- Lukka, K. (1988). 'Budgetary biasing in organizations: Theoretical framework and empirical evidence'. *Accounting, Organizations and Society*, 13: 281–301.
- Magner, N., Welker, R.B. and Campbell, T.L. (1996). 'Testing a model of cognitive budgetary participation processes in a latent variable structural equations framework'. *Accounting and Business Research*, 27(1): 41–50.
- Mahoney, T.A., Jerdee, T.H. and Carroll, S.J. (1963). *Development of Managerial Performance: A Research Approach*. Cincinnati, Ohio: South-Western Publishing.
- Mahoney, T.A., Jerdee, T.H. and Carroll, S.J. (1965). 'The jobs of management'. *Industrial Relations* (February): 97–110.
- Merchant, K.A. (1981). 'The design of the corporate budgeting system: influences on managerial behaviour and performance'. *The Accounting Review*, (October): 813–829.
- Mia, L. (1987). 'Participation in budgetary decision-making, task difficulty, locus of control and employee behaviour: An empirical study'. *Decision Sciences*, 18: 547–561.
- Milani, K.W. (1975). 'The relationship of participation in budget-setting to industrial supervisor performance and attitudes: A field study'. *The Accounting Review*: 274–284.
- Murray, D. (1990). 'The performance effects of participative budgeting: An integration of intervening and moderating variables'. *Behavioral Research in Accounting*: 104–123.
- Naylor, J.C., and Ilgen, D.R. (1984). 'Goal-setting: A theoretical analysis of a motivational technology', in B. M. Staw and L. L. Cummings (eds), *Research in Organizational Behavior* 6 (Greenwich, CT: JAI Press): 95–140.
- Nouri, H. and Parker, R.J. (1998). 'The relationship between budget participation and job performance: The roles of budget adequacy and organizational commitment'. *Accounting, Organizations and Society*, 23(5/6): 467–483.
- Nouri, H., Kyj, L. and Dunk, A.S. (1999). 'The effect of performance reporting on budgetary performance: An attribution theory analysis'. *Advances in Management Accounting*, 8: 211–223.
- Nunnally, J.C. (1978). *Psychometric Theory*. New York: McGraw-Hill.
- Oppenheim, A.N. (1966). *Questionnaire Design and Attitudes Measurement*. London: Heinemann Educational Books Ltd.
- Perrow, C. (1967). A framework for the comparative analysis of organizations. *American Sociological Review*: 194–208.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J. and Podsakoff, N.P. (2003). 'Common method biases in behavioural research: A critical review of the literature and recommended remedies'. *Journal of Applied Psychology*, 88(5): 879–903.
- Prien, E.P. and Liske, R.E. (1962). 'Assessments of higher-level personnel: III. rating Criteria: A comparative analysis of supervisor ratings and incumbent self-ratings of job performance'. *Personnel Psychology*: 187–194.
- Renn, R.W. (1998). 'Participation's effect on task performance: Mediating roles of goal acceptance and procedural justice'. *Journal of Business Research*, 41: 115–125.
- Renn, R.W., Danehower C., Swiercz, P.M. and Icenogle, M.L. (1999). 'Further examination of the measurement properties of Leifer and McGannon's (1986) goal acceptance and goal commitment scales'. *Journal of Occupational and Organizational Psychology*, 72: 107–113.
- Romney, M.B. and Steinbart, P.J. (2003). *Accounting Information Systems*. Upper Saddle River, NJ: Pearson Education, Inc.
- Shields, M.D. and Young, S.M. (1993). 'Antecedents and consequences of participative budgeting: Evidence on the effects of asymmetrical information'. *Accounting, Organizations and Society*, 5: 265–280.
- Shields, J.F. and Shields, M.D. (1998). 'Antecedents of budgetary participation'. *Accounting, Organizations and Society*, 23(1): 49–76.
- Shields, M.D., Deng, F.J. and Kato, Y. (2000). 'The design and effects of control systems: Tests of direct and indirect effects models'. *Accounting, Organizations and Society*, 25: 185–202.
- Stedry, A.C. (1960). *Budget Control and Cost Behaviour*. Englewood Cliffs, NJ: Prentice Hall.
- Thornton, G.C. (1968). 'The relationship between supervisory and self-appraisals of executive performance'. *Personnel Psychology*, 21: 441–455.
- Tubbs, M.E. (1993). 'Commitment as a moderator of the goal-performance relation: A case for clearer construct definition'. *Journal of Applied Psychology*, 78(1): 86–97.
- Tushman, M.L. and Nadler, D.A. (1978). 'Information processing as an integrating concept in organizational design'. *Academy of Management Review*: 613–624.
- Van de Ven, A.H. and Delbecq, A.L. (1974). 'A task contingent model of work-unit structure'. *Administrative*

- Science Quarterly*, 19(2): 183–197.
- Van de Ven, A.H., Delbecq, A.L. and Koenig, K.J. (1976). 'Determinants of co-ordination modes within organizations'. *American Sociological Review*, 41: 322–338.
- Wentzel, K. (2002). 'The influence of fairness perceptions and goal commitment on managers' performance in a budget setting'. *Behavioral Research in Accounting*, 14: 247–271.
- Wier, B. (1993). 'The effects of task relevant knowledge, goal level, goal commitment, and motivation on the participation-performance linkage: An empirical examination'. *Unpublished PhD thesis*, Texas Tech University.
- Withey, M., Daft, R.L. and Cooper, W.H. (1983). 'Measures of Perrow's work-unit technology: An empirical assessment and a new scale'. *Academy of Management Journal*: 45–63.
- Wofford, J.C., Goodwin, V.L. and Premack, S. (1992). 'Meta-analysis of the antecedents of personal goal level and of the antecedents and consequences of goal commitment'. *Journal of Management*, 18: 595–615.