



# An examination of the relationships among budget emphasis, budget planning models and performance

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## Abstract

**Purpose** – This study aims to investigate the relationships among budget emphasis, budget planning models, and performance, to determine whether an emphasis on the budget has indirect effects on performance, in the presence of other budget planning characteristics as mediators.

**Design/methodology/approach** – A questionnaire survey was conducted and structural equation modeling was used to test the proposed models among the constructs and related hypotheses.

**Findings** – The results indicate that while budget planning models entirely mediate the influence of budget emphasis on the performance of management and the organization, they partially mediate the influence of budget emphasis on budget satisfaction. In addition, it is determined that differentiation strategies have a significantly positive influence on budget emphasis, budget planning models and performance.

**Originality/value** – The results of this study provide a reference for organizations in the design of budgeting systems. During the design process, budget planning models should consider the degree of emphasis an organization places on the budget.

**Keywords** Budget emphasis, Budget planning models, Differentiation strategies, Budget performance, Taiwan, Budgets, Management strategy

**Paper type** Research paper

## 1. Introduction

From the perspective of management control systems, budgeting processes are capable of providing companies with information relevant to their operations and financial plans applicable through coordination, communication, controls, performance evaluation, and incentives (Flamholtz, 1983; Anthony and Govindarajan, 2007; Chenhall, 2007). Achieving company objectives through these functions requires a budgeting system compatible with the culture of the organization. In addition, the attitude and knowledge of management regarding the attributes of the budgeting system and the influence of the budgeting system on employee behavior are essential factors determining whether the budget system functions effectively (Frow *et al.*, 2005).

Previous studies concerning budgeting systems and their relevance to performance have yielded inconsistent results, largely due to differences in organizational environments (see Covalleski *et al.* (2003) for example). As a result, researchers have



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begun applying contingency theory to the study of various budget planning models (e.g. Chenhall and Brownell, 1988; Clinton and Hunton, 2001; Lau and Tan, 2003). A budget planning model refers to the control of the budget by top management, placing emphasis on achieving budgetary objectives, participation in budgetary decisions, monitoring, and communicating the budgetary objectives (Merchant, 1981; Van der Stede, 2001). According to the style of control employed by the organization, Van der Stede (2001) divided budget planning models into two categories: flexible and tight. In a flexible model, employees participate actively and influence the budgeting process. Top management places more importance on the bottom-line than it does on detailed line-items in budget reviews. They also tend to focus on diagnostic communication, placing less emphasis on a failure to meet short-term budgetary objectives.

A flexible budget planning model should have informational and emotional incentives. Sharing knowledge between employees and supervisors promotes the flow and effective use of information. Individual participation in the budgeting process internalizes work objectives and makes employees feel that they are valued (Kenis, 1979; Brownell and McInnes, 1986). When employees better understand the company's budgetary objectives, their work satisfaction increases, and work performance improves (Lau and Tan, 2003). However, many studies addressing the direct effects of budget planning models on management performance have discovered that direct relationships do not necessarily exist among variables, making a one-to-one relationship between a budget planning component and performance difficult to identify (Otley, 1980; Merchant and Simons, 1986; Merchant, 1989; Shields and Shields, 1998; Shields *et al.*, 2000). For example, a number of studies have determined that participative budgeting has a positive impact on performance, while others have found a negative or indefinite influence (e.g. Milani, 1975; Kenis, 1979; Brownell, 1981; Brownell, 1982; Brownell and Hirst, 1986; Mia, 1988; Dunk, 1989). Few studies have investigated whether a budget planning component has any indirect effects on performance (e.g., Shields *et al.*, 2000).

The effectiveness of budgeting as an instrument of control depends on the characteristics of the budgeting system and the importance that management places on budgeting (Merchant, 1981). According to the process theory of institutions, emphasizing the budget makes budget objectives appear more reasonable and appropriate (Cooper and Hopper, 2007). Brownell (1983) stated that greater emphasis on the budget requires a budget planning model with greater flexibility to increase emotional incentives and enhance employee motivation. The emotional incentives associated with budgetary participation and objective communication can increase employee acceptance of budgetary objectives and the value of achieving those objectives, thereby enhancing management performance (Brownell and Dunk, 1991). Based on these assumptions, the purpose of this study is to test whether an emphasis on the budget has indirect effects on performance, in the presence of other budget planning characteristics as mediators. In other words, can greater emphasis on the budget enhance performance using the control and emotional incentives of flexible budget planning models? This study proceeds from the perspectives of institutional theory and cognitive behavior to conduct a comprehensive investigation of the relationships among budget emphasis, budget planning models, and performance.

The proposed models and related hypotheses are tested using structural equation modeling (SEM). The results indicate that while budget planning models entirely

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mediate the influence of budget emphasis on the performance of management and the organization, they partially mediate the influence of budget emphasis on budget satisfaction. Additionally, budget emphasis has a positive influence on budget planning models; i.e. a strong emphasis on the budget is more conducive to the precision of budget planning models and encourages flexible budgetary controls from top management.

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This study then seeks to illuminate the influence of differentiation strategies on budget emphasis, budget planning models, and performance. Differentiation strategies enable companies to achieve quality, innovation, and a positive customer response. Differentiation and brand loyalty creates value at the front end, forming entry barriers that contribute to competitive advantage (Porter, 1980). However, techniques and production must frequently be adjusted to suit consumer preferences to maintain innovation under differentiated strategies. Thus, management control requires greater flexibility to cope with uncertainty in the execution of strategies and often places greater importance on the achievement of short-term objectives (Merchant and Van der Stede, 2007). This study predicts that through the use of differentiated strategies, companies emphasize the achievement of short-term budget objectives in conjunction with flexible budget planning models to enhance performance.

In accordance with these expectations, the results show that differentiation strategies have a significantly positive influence on organizational and management performance, budget satisfaction, budget emphasis and budget planning models. The effect of budget emphasis on budget planning models diminishes, however, once the effect of strategies is taken into account. This is indicative of how differentiation strategies influence performance through multiple channels and the way that such strategies also serve as antecedents to budget emphasis and budget planning models.

The remainder of the paper is structured as follows. Section 2 reviews the literature and develops our hypotheses. Section 3 discusses our research design. Section 4 presents empirical results. Section 5 contains a brief summary and summarizes the key findings of the study.

## **2. Literature review and hypothesis development**

### *2.1 Budget planning models*

A budget planning model refers to the control of the budget by top managers or supervisors emphasizing budgetary objectives and the participation of subordinates in the establishment, monitoring, and communication of budgetary objectives (Merchant, 1981; Van der Stede, 2001). Van der Stede (2000) investigated the reasons and causal antecedents of budget use in companies and whether budget planning characteristics have any influence on its effectiveness. The results indicate that the reasons for using budgets varies according to the circumstances, and the effectiveness of using budgets is closely associated with budget planning characteristics. In addition, the effectiveness of budget use is positively associated with the satisfaction with the budget and organizational performance.

Based on the style of control employed by a company, previous researchers have categorized budget planning models as either flexible or tight (Fisher, 1995; Merchant, 1998; Van der Stede, 2001). In a flexible model, employees participate actively in the budgeting process and have a direct influence over it. In budget reviews, top managers

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place greater importance on the bottom-line than on the detailed line-items. They tend to focus on diagnostic communication, and place less emphasis on achieving short-term budgetary targets. In contrast, a tight budget planning model is characterized by formal control, relying on formal rules and standardized operating procedures.

*2.1.1 Budget participation.* Budget participation refers to the level of participation held by business unit managers in the budgetary process, and the degree to which they influence goal setting (Kenis, 1979). Agency theory holds that participation in the budgetary process can reduce uncertainty between top managers and their subordinates regarding the sharing of information (Shields and Shields, 1998). In addition, budgetary participation enables supervisors to devise an effective remuneration scheme with a unified goal that encourages employees to achieve budgetary objectives (Kenis, 1979; Brownell, 1982).

From a psychological perspective, participation in the budgetary process gives subordinates the feeling that they have an equal opportunity to express their opinions and have a degree of influence on the decision making process of the organization, resulting in increased work satisfaction and improved morale. Supervisors are also able to gain the trust of subordinates and reduce resistance to final decisions, further improving performance (Milani, 1975; Covaleski *et al.*, 2003).

*2.1.2 Budget monitoring.* Monitoring the budget provides an early warning of deviations from budgetary targets and alerts top managers to take corrective action. Merchant (1998) defines budget monitoring as the frequency, detail, and timely monitoring of budget performance. Managers also use budget monitoring to exercise control, implement decisions, and facilitate continuous improvement. However, tight control by top managers provides little leeway and interferes with the decision-making activities of the subordinates under their control. Merchant and Manzoni (1989) stated that top management places greater importance on the budget's bottom-line than on specific budget line-items, thereby providing business unit managers with increased discretion in the arrangement of budgeting, on the condition that they achieve their overall budgetary objectives (Van der Stede, 2001).

*2.1.3 Budget communication.* Communication is the essence of the budgeting process. From the perspective of contingency theory, increased uncertainty in an organization's external environment inevitably leads to increased differentiation in the structure of the organization, which requires a response through the use of integration mechanisms (Brownell, 1982; Donaldson, 2001). For example, the coordination of departmental operations through budgetary communication can enhance the overall efficiency of organizational operations. In other words, the budget functions as a communication buffer, which business unit managers can use as a tool in the budgeting process (Van der Stede, 2003).

According to Merchant (1998), employees better understand and accept organizational objectives that are communicated effectively and convincingly in a timely manner. Simons (1995) introduced the notion of interactive and diagnostic budget control in which interactive communication involves regular budget-related discussion between top managers and their subordinates regardless of actual budget performance. Diagnostic communication, on the other hand, only comes to the attention of management when performance falls considerably below expectations (Van der Stede, 2001).

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### 2.2 Budget emphasis

The effectiveness of budgeting as an instrument of control depends on the characteristics of the budget system and the importance that top management places on budgeting (Anthony and Govindarajan, 2007). An emphasis on the budget helps to achieve budgetary objectives by strengthening its relationship with employee motivation. Moreover, Otley (1978) found that a strong emphasis on the budget leads to higher budget accuracy and reduces dysfunctional employee behavior.

Brownell (1982) stated that a strong emphasis on the budget can enhance performance through the control and emotional incentives of flexible budget planning models. Such an emphasis implies that the executors of the budget are responsible for achieving its objectives, which is an effective means of stimulating performance (Merchant, 1981).

### 2.3 Relationships among budget emphasis, budget planning models, and performance

A flexible budget planning model should have informational and emotional incentives in which employees actively participate and influence the budgeting process. In this manner, employees better understand the company's budgetary objectives, which increase their job satisfaction and in turn improves work performance (Kenis, 1979; Brownell, 1982). Sharing knowledge (or local information) with supervisors and colleagues promotes the flow of information and the effective use of that information. Moreover, top management tends to focus on diagnostic communication and places more importance on meeting overall budget targets, rather than dealing with the details of budget line-items.

The incentive theory indicates that flexible budget planning models are better able to entice employees to share private information, thereby reducing information asymmetry (Brownell and McInnes, 1986; Dunk, 1993). In contrast, the agency theory, which is based on self-interest, suggests that flexible budget planning models provide the opportunity for budgetary slack; employees with a tendency toward risk aversion are more likely to present false budgets, which is not conducive to effective management (Baiman, 1982). Nonetheless, agency theory neglects the effects of group behavior. In an organization with a greater emphasis on budgeting, group discussions and communication influence final decisions. During this process, social pressure and norms assert an influence that inhibits dysfunctional behavior and reduces errors in the allocation of resources, resulting in a subsequent increase in performance (Young, 1985; Fisher *et al.*, 2000; Covaleski *et al.*, 2003). In other words, a stronger emphasis on the budget can enhance performance through the control and emotional incentives of flexible budget planning models.

Most previous studies have focused on the relationship between budget planning models and management performance (e.g. Govindarajan, 1988; Brownell and McInnes, 1986; Brownell and Dunk, 1991). Few have investigated the relationship between budget planning models and organizational performance or budgetary satisfaction. Organizational performance refers to a company's performance relative to other companies, as perceived through self-evaluation by budget supervisors. According to economic theory, the facilitating and influential role of budgets in decision making can improve a company's organizational performance (Shields and Shields, 1998; Covaleski *et al.*, 2003). Managerial performance refers to the performance of managers in their decision making capacity. Budgetary satisfaction refers to the degree to which supervisors or business unit managers perceive their budgetary

objectives to have been successfully accomplished. According to psychological theory, flexible budget planning models can alleviate the stress felt by employees striving to achieve budgetary objectives. Employees are therefore more motivated to achieve their individual budget objectives, which enhances managerial performance (Shields and Shields, 1998).

According to contingency theory, a strong emphasis on the budget and flexible budget planning models act to coordinate the operations of each business unit, thereby enhancing the efficiency of organizational operations and achieving budget satisfaction (Shields *et al.*, 2000; Luft and Shields, 2003). For the reasons discussed above, this study expects that an emphasis on the budget can indirectly influence performance through the use of budget planning models as mediators. Therefore, this study offers the following hypotheses:

- H1. Budget emphasis is positively associated with budget planning models.
- H2. Budget emphasis is not directly associated with:
  - H2a. Organizational performance.
  - H2b. Management performance.
  - H2c. Budget satisfaction.
- H3. Budget planning models are directly associated with:
  - H3a. Organizational performance.
  - H3b. Management performance.
  - H3c. Budget satisfaction.

#### 2.4 Differentiation strategy

Porter's (1980) differentiation strategy calls for a product or service that is perceived throughout the industry as unique. Peters and Waterman (1982) believe that high-performing companies tend to be more strongly oriented toward customer value than toward cost reduction or economies of scale. Companies operating under differentiation strategies provide superior quality, innovation, and earn a more positive customer response. Differentiation also creates stronger entry barriers to potential competitors and provides a sustainable competitive advantage (Van der Stede, 2000).

Govindarajan (1988) pointed out that it is important to observe how the environment changes by the implementation of differentiation strategies, to enable the company to adapt (e.g. new product development or innovative processes), appropriately. Van der Stede (2000) offered a similar view, stating that differentiation strategy requires greater flexibility to cope with the uncertainties in the execution of strategies. However, Simons (1987) argued that companies adopting the prospector (differentiation) strategy tend to implement tighter budgetary controls that place greater importance on the achievement of short-term objectives.

Competitive strategy is an expected antecedent to both budget emphasis and budget planning models. This study therefore expects, that in using differentiated strategies, a company will emphasize the achievement of short-term budgets in conjunction with flexible budget planning models to enhance performance.

Moreover, the primary purpose of differentiation strategies is to provide quality superior to that of the competition (Porter, 1991). In essence, quality as perceived by customers can play a major role in enhancing a company's long-term competitive advantage and increasing its profitability (Gale, 1992). "Strategic selection" may also be present when the adoption and management of strategies is emphasized. In essence, for the adopted strategies to result in improved performance, the company must ensure that they are appropriate. Therefore, this study posits that differentiation strategies have a direct influence on performance, while a budget planning model acts as a partial mediator, with only an indirect influence on performance. Thus, this study offers the following hypotheses:

- H4.* Differentiation strategies are positively associated with budget emphasis.
- H5.* Differentiation strategies are positively associated with budget planning models.
- H6.* Differentiation strategies are directly associated with:
  - H6a.* Organizational performance.
  - H6b.* Management performance.
  - H6c.* Budget satisfaction.

### **3. Methodology and measurement**

#### *3.1 Sample and data collection*

The data for this study was obtained from a survey questionnaire directed at manufacturers in Taiwan. To ensure the validity of the measurement instrument, the questionnaire was delivered in two-stages. First, an initial draft was designed based on a review of the literature. That was followed by a discussion with company managers regarding the appropriateness of the wording, logic, and content. Next, to ensure that each item is well suited to the manufacturing industry and interpreted as expected, the revised version was modified once again, based on additional comments and suggestions from seven managers.

Samples consisted of the Top 1,000 Manufacturers listed in the 2008 June issue of *Commonwealth Magazine*. The questionnaires were addressed to the relevant business unit managers or sales directors. All responses were anonymous and no identifying information disclosed. A total of 1,000 surveys were mailed out; 140 of which were returned. Deletion of 8 invalid replies left a total of 132 valid responses, representing a return rate of 13.2 percent.

The descriptive characteristics of the respondents are detailed in Tables I and II. Most of the companies that were sampled have been established for over 20 years; most employ between 200 to 1,000 employees; and most have capital ranging from 1 billion to 5 billion NT dollars (approximately 165 million US dollars). On average, respondents had been employed by their current company for approximately 14.8 years; with 6.9 years of managerial experience; and been responsible for budget preparation for 5.9 years. As evidenced by these figures, respondents are qualified candidates for the study, with sophisticated job experience and familiarity with budgeting.

		Percent
Establishment	Less than 20 years	36.4
	From 20 to 30 years	28.7
	From 30 to 40 years	19.7
	More than 40 years	15.2
Size: number of employees	Less than 200 employees	18.9
	From 200 to 1,000 employees	43.2
	From 1,000 to 2,000 employees	26.5
	More than 2,000 employees	11.4
Size: capital (in NT dollars)	Less than \$1 billion	43.2
	From \$1 to \$5 billion	45.5
	More than \$5 billion	11.4

**Table I.**  
Demographic attributes  
of the respondents:  
overall firm  
characteristics

	Mean	SD
Respondent tenure in firm (year)	14.8	8.33
Number of years responsible for preparing the budget (year)	5.9	5.85
Managerial experience (year)	6.9	6.55

**Table II.**  
Demographic attributes  
of the respondents:  
respondent  
characteristics

**Notes:** Percentages calculated based on the number of responses obtained for each variable

Because a questionnaire was used for the survey, one limitation of the study is that the results may suffer from common method bias. Moreover, participants may have modified their responses to make them seem socially acceptable or appear rational.

### 3.2 Measures of constructs

**3.2.1 Budget emphasis.** An emphasis on the budget indicates that top management puts greater emphasis on attaining budgetary targets. In other words, the performance of business unit managers is based primarily on the achievement of budgetary objective (Hopwood, 1972). Otley and Fakiolas (2000) argued that an emphasis on the budget lacks a measurement paradigm. Inconsistency among studies has resulted in confounding and ambiguous concepts related to the measurement of budgetary emphasis. To avoid those shortcomings, this study adopted the approach developed by Van der Stede (2001) using a seven-point Likert scale. Items are coded such that high scores correspond to greater budget emphasis. For example: the lowest score (1) represents "very little emphasis," while the highest (7) represents "heavy emphasis."

**3.2.2 Budget planning models.** The study used budget participation, budget communication, and budget monitoring as measures of budget planning models. Following Shields and Shields (1998), the study defines budget participation as business unit manager participation and influence in the process of budget goal specification. The scale incorporates Milani's (1975) widely adopted six items, as they have demonstrated validity and reliability. The items are coded such that high scores correspond to greater budget participation. For example: the lowest score (1) represents "very little participation," while the highest (7) represents "greater participation".

This study defines budget communication as activities that facilitate the exchange and analysis of information. Business unit managers have the ability to meet with top managers to discuss budget related matters on a regular, or as needed, basis. The study employs Van der Stede's (2001) scale to measure the level of budget communication. The scale comprises five items, which are coded from 1 to 7, reflecting values from "completely disagree," to "strongly agree."

Budget detail refers to the amount of detail that goes into interim budget reviews. With flexible budget control, top management places greater importance on the achievement of the overall budget's goals in budget reviews, rather than the detailed performance of the budget line items. This study adopts three items from Van der Stede's (2001) scale, which are coded from (1) completely disagree, to (7) strongly agree.

*3.2.3 Organizational performance.* Organizational performance refers to the performance of the company relative to other companies as perceived by budget supervisors. According to Van der Stede (2000), and Hansen and Van der Stede (2004), organizational performance can be measured through the self-evaluation of managers using three items: the company's financial condition, market position, and internal performance, in comparison with rival companies. Responses were coded from (1) completely disagree, to (7) strongly agree.

*3.2.4 Management performance.* Managerial performance refers to the performance of managers in their decision making capacity. Performance is measured using the scale suggested by Mahoney *et al.* (1965). Respondents were asked to provide individual ratings for eight items, and one rating for the overall performance. The scores ranged from (1) extremely low, to (7) extremely high.

*3.2.5 Budget satisfaction.* Budgetary satisfaction refers to the degree to which business unit managers perceive their ability to achieve budgetary objectives. Budget satisfaction is primarily a measure of satisfaction regarding the budget as a tool for management units, decision making, and support. The scale is based on Hansen and Van der Stede (2004), comprising three items coded from (1) completely disagree, to (7) strongly agree.

*3.2.6 Differentiation strategy.* Differentiation strategy is primarily a measure of the level of differentiation within the organization. There are a total of five items that cover product price, R&D expenditures, product quality, product image, and features. The scale is based on Van der Stede (2000), ranging from (1) completely disagree, to (7) strongly agree.

### *3.3 Statistical method*

The properties of the three research constructs in the proposed model were tested using a LISREL, SEM procedure. The proposed conceptual model was designed to measure causal relationships among hypothetical constructs established according to prior literature. The SEM procedure was an appropriate solution for this proposed hypothetical model.

## **4. Results**

### *4.1 Reliability and validity analysis*

This study eliminated items with poor reliability and validity prior to conducting more in-depth analysis and discussion. Cronbach's  $\alpha$  was used to measure the internal consistency of various constructs of the questionnaire (Nunnally, 1978). Cronbach's  $\alpha$  for

individual constructs is shown in Table III. All constructs were above 0.7, which indicates that they had a satisfactory level of univariate reliability (Hair *et al.*, 1998).

Confirmatory factor analysis was used to assess individual item reliability. Chin (1998) suggested that a standardized path coefficient of variables should exceed 0.7. However, when other variables within the same measurement model exhibited greater factor loadings, a factor loading between 0.5 and 0.6 was considered acceptable. Table IV presents the validity analysis and goodness of fit for the individual items. After eliminating items with poor reliability and validity, all remaining items were considered to be within the desirable range. Although a minority of the factor loadings fell short of the 0.7 level, they did remain above 0.5. Based on the results, all constructs demonstrated reasonable individual item reliability, and goodness of fit.

Table V shows the discriminant validity of budget planning models and performance. With regard to budget planning models, all constructs display a P-value below 0.05. This indicates that budget participation, budget communication, and budget detail are distinct constructs. Accordingly, the P-values for the three performance constructs are less than 0.01, which also demonstrates that the three constructs are distinct.

Kline (1998) suggested that when a correlation coefficient between a pair of constructs does not exceed 0.85, a certain degree of discriminant validity can be claimed. Table VI displays Pearson's correlation coefficient between variables. The correlation coefficients of all constructs were lower than 0.7, indicating good discriminant validity.

#### 4.2 Structural equation modeling analysis

The hypothesized structural causal model was tested using SEM, which included a test of the overall model, as well as tests of the individual relationships among constructs. Following the analysis, the overall SEM is presented in Figure 1, and the analysis is presented in Table VII.

First, we conducted a goodness-of-fit test on the overall model using absolute, incremental, and parsimonious fit measures (Bollen, 1989; Hair *et al.*, 1998). The results demonstrate that the overall model fit indicator in Table VII. is within the standard range, thereby indicating a good fit (Bagozzi and Yi, 1988).

Budgetary emphasis and budget planning models demonstrate significant positive path coefficients, supporting *H1*. Budget emphasis and organizational performance fail

Constructs	Number of items	Cronbach's $\alpha$	Composite reliability	Average variance extracted
Differentiation strategy	5	0.841	0.886	0.664
Budget emphasis	7	0.870	0.891	0.579
Budget planning model				
Budget participation	6	0.905	0.886	0.577
Budget communication intensity	5	0.885	0.874	0.587
Budget detail	3	0.712	0.723	0.474
Organizational performance	3	0.876	0.878	0.706
Management performance	9	0.909	0.915	0.550
Budget satisfaction	3	0.876	0.823	0.614

**Table III.**  
Reliability analysis of constructs

Items	Factors loadings
<i>Differentiation strategy</i> <sup>a</sup>	
S1. Product selling price	0.652*
S3. Product quality	0.827*
S4. Brand image	0.935*
S5. Unique product features	0.821*
<i>Budget emphasis</i> <sup>b</sup>	
E1. Corporate superiors judge my performance predominantly on the basis of attaining budget goals	0.624*
E2. In the eyes of my corporate superiors, achieving the budget is an accurate reflection of whether I am succeeding in my business	0.735*
E3. Not achieving my budget has a strong impact on how my performance is rated by my corporate superiors	0.874*
E4. My promotion prospects depend heavily on my ability to meet the budget	0.770*
E5. In the eyes of my corporate superiors, not achieving the budget reflects poor performance.	0.734*
E7. The corporate parent achieves control over my business principally by monitoring how well my budget is on target.	0.811*
<i>Budget participation</i> <sup>c</sup>	
P1. The portion of the budget I was involved in setting	0.671*
P2. The superior explained the reasoning when the budget is revised	0.558*
P3. The frequency of budget-related discussions initiated by me	0.849*
P4. The amount of influence I felt I had on the financial budget	0.983*
P5. The importance of my contribution to the budget	0.848*
P6. The frequency of budget-related discussions initiated by my superior when budgets are being set	0.543*
<i>Budget communication</i> <sup>d</sup>	
C1. Corporate superiors call me in to discuss budget deviations in face-to-face meetings	0.781*
C2. My corporate superiors, myself, and my own subordinates often form a team to discuss and solve budgeting matters	0.944*
C3. Budget matters are discussed regularly with my corporate superior even if there are no negative budget deviations to report	0.806*
C4. I consult with my corporate superior on how to achieve my budget	0.649*
C5. Indicate the typical frequency with which you communicate with the corporate parent for budget-related issues	0.602*
<i>Budget detail</i> <sup>e</sup>	
D1. My corporate superiors are interested only in how well I achieve my overall budget	0.509*
D2. I am required to submit control reports that explain in budget variances on an overall budget basis	0.732*
D3. From the comments made by my corporate superiors, I know that the bottom-line is what counts for my corporate superiors	0.791*
<i>Organizational performance</i> <sup>f</sup>	
OP1. Economic performance	0.846*
OP2. Market performance	0.798*
OP3. Internal operational performance	0.874*

**Table IV.**  
Validity analysis and  
goodness of fit of the  
individual item

(continued)

Items	Factors loadings
<i>Management performance</i> <sup>g</sup>	
MP1. Planning	0.764*
MP2. Investigating	0.548*
MP3. Coordinating	0.797*
MP4. Evaluating	0.826*
MP5. Supervising	0.838*
MP6. Staffing	0.639*
MP7. Negotiating	0.603*
MP8. Representing	0.777*
MP9. Overall	0.813*
<i>Budget satisfaction</i> <sup>h</sup>	
BS1. Benefit to managing the unit	0.624*
BS2. Benefit to make short-term operational decision	0.735*
BS3. Benefit to make long-term strategic decision	0.874*

**Notes:** <sup>a</sup> $\chi^2 = 3.237$ ,  $\chi^2/df = 1.619$ , RMR = 0.034, GFI = 0.986, AGFI = 0.930, RMSEA = 0.073, NFI = 0.998, CFI = 0.995, IFI = 0.995; <sup>b</sup> $\chi^2 = 11.309$ ,  $\chi^2/df = 1.616$ , RMR = 0.043, GFI = 0.970, AGFI = 0.911, RMSEA = 0.073, NFI = 0.969, CFI = 0.988, IFI = 0.988; <sup>c</sup> $\chi^2 = 8.732$ ,  $\chi^2/df = 1.746$ , RMR = 0.088, GFI = 0.976, AGFI = 0.901, RMSEA = 0.080, NFI = 0.983, CFI = 0.992, IFI = 0.992; <sup>d</sup> $\chi^2 = 5.733$ ,  $\chi^2/df = 1.433$ , RMR = 0.055, GFI = 0.982, AGFI = 0.934, RMSEA = 0.061, NFI = 0.984, CFI = 0.995, IFI = 0.995; <sup>e</sup>Saturated model; <sup>f</sup>Saturated model; <sup>g</sup> $\chi^2 = 29.902$ ,  $\chi^2/df = 1.196$ , RMR = 0.041, GFI = 0.947, AGFI = 0.904, RMSEA = 0.041, NFI = 0.952, CFI = 0.992, IFI = 0.992; <sup>h</sup>Saturated model; \*  $p < 0.01$ ;  $\chi^2$  = chi-square;  $\chi^2/df$  = normed chi-square; RMR = root mean squares residual; GFI = goodness-of-fit index; AGFI = adjusted GFI; RMSEA = root mean square error of approximation; NFI = normed fit index; CFI = comparative fit index; IFI = incremental fit index

Table IV.

Construct	Unconstrained $\chi^2$	$\chi^2$ (r = 1)	$\Delta\chi^2$
<i>Budget participation, budget communication and budget detail</i>			
Budget participation-Budget communication	90.229	96.104	5.875*
Budget participation-Budget detail	95.779	100.052	4.741*
Budget communication-Budget detail	22.196	26.378	4.182*
<i>Performances</i>			
Organizational performance-Management performance	95.415	121.568	26.153**
Organizational performance-Budget satisfaction	9.283	22.897	13.164**
Budget satisfaction-Management performance	86.174	115.821	29.674**

**Notes:** \*  $p < 0.05$ ; \*\*  $p < 0.01$  (two-tailed)

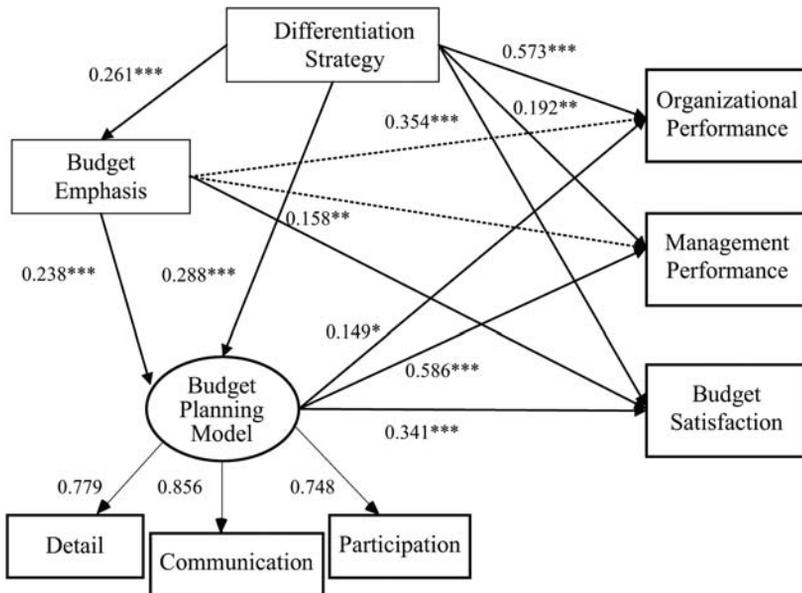
**Table V.** Discriminant validity analysis of constructs: discriminant validity of budget planning model and performance

to display a significant association for the direct path. Such results indicate the indirect influence budget emphasis has on organizational performance via budget planning models. The effect of budget emphasis on management performance resembles the association between budget emphasis and organizational performance: i.e. an indirect effect on management performance via budget planning models. Concurrently, budget emphasis has a direct and significantly positive association with budget satisfaction. Therefore, we can see that budget emphasis not only indirectly influences budget

**Table VI.**  
Discriminant validity  
analysis of constructs:  
correlation coefficients

	Differentiation strategy	Budget emphasis	Budget planning model	Organizational performance	Management performance	Budget satisfaction
Differentiation strategy	1					
Budget emphasis	0.242*	1				
Budget planning model	0.348*	0.336*	1			
Organizational performance	0.639*	0.243*	0.347*	1		
Management performance	0.399*	0.249*	0.605*	0.426*	1	
Budget satisfaction	0.510*	0.356*	0.503	0.432*	0.452*	1

**Note:** \*  $p < 0.05$  (two-tailed)



Note: \*, \*\*, \*\*\* Significant at the 0.10, 0.05, and 0.01 levels, respectively

Figure 1. Parameters for the research model

Hypotheses	Path	Path coefficient	t-statistic
H1	Budget emphasis → Budget planning model	0.261	2.89***
H2a	Budget emphasis → Organizational performance	0.061	0.86
H2b	Budget emphasis → Management performance	0.009	0.12
H2c	Budget emphasis → Budget satisfaction	0.158	2.14*
H3	Differentiation strategy → Budget emphasis	0.238	2.81***
H4	Differentiation strategy → Budget planning model	0.288	3.19***
H5a	Budget planning model → Organizational performance	0.149	1.85*
H5b	Budget planning model → Management performance	0.586	6.23***
H5c	Budget planning model → Budget satisfaction	0.341	3.97***
H6a	Differentiation strategy → Organizational performance	0.579	7.99***
H6b	Differentiation strategy → Management performance	0.192	2.55**
H6c	Differentiation strategy → Budget satisfaction	0.354	4.75***

Notes: \* Significant at the 0.01 level; \*\* Significant at the 0.05 level; \*\*\* Significant at the 0.10 level;  $\chi^2/df = 1.922$ ; RMR = 0.050; GFI = 0.959; AGFI = 0.886; RMSEA = 0.083; NFI = 0.941; CFI = 0.970; IFI = 0.971

Table VII. Structural equation modeling analysis

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satisfaction via budget planning models, but is also directly influence on budget satisfaction.

As displayed in Table VII, the relationship between budget emphasis and organizational performance involves the mediating effect of budget planning models. It is through budget planning models that budget emphasis enhances the complete mediating effect of organizational performance, thereby supporting *H2a*. The relationship between budget emphasis and management performance is also consistent with the above description; thereby substantiating *H2b*. Following incorporation of the budget planning models, the coefficient of budget emphasis and budget satisfaction dropped from 0.356 to 0.158, demonstrating the partial mediating effect of budget planning models, thereby invalidating *H2c*.

Differentiation strategy demonstrates a significantly positive association with budget emphasis, thereby supporting *H4*. In addition, differentiation strategy displays a significantly positive association with budget planning models; which substantiates *H5*.

Table VII. also shows that budget planning models have are direct and significantly positive association with organizational performance, management performance, and budget satisfaction. Essentially, after the effects of budget planning models have been considered, there remains a direct and significant influence on performance. The fact that the coefficients between differentiation strategy, organizational performance, management performance and budget satisfaction show a drop from 0.639, 0.399, and 0.510 to 0.579, 0.192, and 0.354, respectively, verifies the presence of the indirect effect that budget planning models have; substantiating *H6a*, *H6b*, and *H6c*.

Table VIII presents the overall effect of budget emphasis, budget planning models, and differentiation on performance and budget satisfaction. Budget emphasis does not directly influence organizational or managerial performance; therefore only indirect effects can be found. The overall influence of differentiation strategy on organization performance consists of the direct effect of strategy, combined with the direct budget planning models-organizational performance pathway, and the indirect budget emphasis-budget planning models-organizational performance pathway. Differentiation strategy has the same effect on management performance; however, the indirect effect that strategy has on budget satisfaction includes the budget emphasis-budget satisfaction pathway, because budget emphasis has a significantly positive association with budget satisfaction. Regarding direct effects, differentiation strategies have the highest effect coefficient with regard to organizational performance. In terms of management performance, budget planning models have the greatest effect coefficient. As for budget satisfaction, the effect coefficients of budget planning models and differentiation strategy are not very far apart.

Budget planning models, as described in our results, are used as tools by top executives to manage their subordinates. They therefore have a greater effect on managerial performance. On the other hand, budgetary control is used to facilitate strategic implementation, and therefore has less influence on organizational performance. That is, the indirect effect of strategy may be regarded as a consequence of a budget planning model designed in response to differentiation strategy.

## 5. Discussion and conclusion

In terms of planning, coordination, control, or performance evaluation, budgeting systems are central to any management control system. The literature suggests that an

Performance	Overall effect =			Direct effect +			Indirect effect		
	Differentiation strategy	Budget emphasis	Budget planning model	Differentiation strategy	Budget emphasis	Budget planning model	Differentiation strategy	Budget emphasis	Budget planning model
Organizational performance	0.625	0.039	0.149	0.573	-	0.149	0.052	0.089	-
Management performance	0.394	0.153	0.586	0.192	-	0.586	0.202	0.153	-
Budget satisfaction	0.510	0.246	0.341	0.354	0.158	0.341	0.157	0.089	-

**Table VIII.**  
Overall effect of budget emphasis, budget planning model and differentiation strategy on performance

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emphasis on the budget may help to achieve budgetary objectives by aligning the behavior of employees with organizational goals, thereby strengthening company performance (Hansen *et al.*, 2003; Cooper and Hopper, 2007). We discovered that budget planning models play a significant role in mediating the relationship between budget emphasis and the performance of organization and management. Budget planning models also partially mediate the relationship between budget emphasis and budget satisfaction. One possible reason may be that budgets are regarded as an important management control system when a company strongly emphasizes the budget and thereby directly increases budget satisfaction.

Differentiation strategies have a positive influence on budget planning models, indicating an inclination toward more flexible budget planning models. Differentiation strategies place particular emphasis on product innovation, quality and positive customer response. Tight budgetary controls limit a company's ability to adapt to market changes (Van der Stede, 2000). Results have shown that differentiation strategies are associated with a stronger emphasis on budgets, which is consistent with Simons' (1987) proposition; however, they contradict the claims of Van der Stede (2000). The results suggest that companies engaged in competitive strategies also place considerable emphasis on the budget to achieve short-term objectives and reduce costs due to inefficiency. However, the influence that budget emphasis has on budget planning models is reduced when the effect of differentiation strategies is taken into account. This may be attributed to the fact that strategies are central to management control systems and that the entire system is designed around them. As a result, a decrease in the effect of budget emphasis is inevitable.

Moreover, differentiation strategy has a direct and significant influence on performance, while a budget planning model only acts as a partial mediator, having only an indirect influence on performance. Relative to cost leadership strategies, differentiation strategies are actively engaged in catering to the needs of customers by creating differentiated products, which are likely to bring a competitive advantage and improved performance (Porter, 1980). The fact that budget planning models function as tools to facilitate decisions and achieve management goals, may explain the greater influence of budget planning models on performance.

The results of this study provide a reference for organizations in the design of budgeting systems. During the design process, budget planning models should consider the degree of emphasis an organization places on the budget. In organizations which place a greater emphasis on budgetary objectives using budget planning models of greater flexibility, it is essential to create an encouraging atmosphere for business unit managers, and to maximize the effectiveness of emotional incentives and supervision. As a result, it is crucial to determine how to communicate fully with business units during the budgetary participation process, as well as to share information and experience, increase access to information relevant to work, and create a flexible control environment that empowers and supports business unit managers.

As a limitation, even though budget planning models play a prominent role in management control systems, they are only a subset of the overall system. Conventionally, budgeting is perceived as a passive tool, simply providing information to assist decision making. One possible line of further inquiry would be to explore the optimal cost-benefit tradeoffs associated with other components and practices of management control systems. Future research might also study the effects of

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budgeting characteristics on employee attitudes and behavior. Recognizing the complexity associated with individual responses to a social environment, it would be interesting to explore the mental states and behaviors of superiors in a budget model to examine the reactions of subordinates to budgeting decisions.

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