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預算參與對管理者效能之影響：自我效能與態度的中介角色

Budgetary Participation's Effect on Managerial Outcomes: Mediating Roles of Self-efficacy and Attitudes Toward Budgetary Decision Makers

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摘要

本研究引用社會心理學中的社會認知理論 (Social-cognitive Theory) 與情感事件理論 (Affective Events Theory ; AET) 來探討自我效能與態度在預算參與對管理者效能關係間所扮演的中介角色。同時，中介變數間與管理者效能變數間的關係也一併受到探討。本文採用結構方程模型 (SEM) 來檢驗該假設模型，該研究有效樣本 164 件乃隨機抽取自台灣證券交易所中的製造業上市公司部門主管。該結果顯示，管理者的自我效能具有中介預算參與和管理者效能間關係的效果，而態度的中介效果也獲得支持。同時，自我效能也扮演預算參與和態度間關係的中介角色。本文的結果對預算參與和管理者效能間關係之實務與研究，提供了管理意涵與未來的研究方向。

【關鍵字】預算參與、自我效能、態度

Abstract

This study employs social-cognitive and affective events theories to examine the mediating roles of attitudes toward budgetary decision makers and self-efficacy between budgetary participation and managerial outcomes. The relationships between mediating variables and between managerial outcomes were also examined in this study. Structural equation modeling (SEM) was used to test the theoretical model with 164 useful responses which was randomly drawn from the listing companies in Taiwan Stock Exchange. The results show that the indirect effects of budgetary participation on managerial outcomes through self-efficacy and attitudes are supported. Self-efficacy also plays the mediating role between budgetary participation and attitudes. Implications and directions for future research are discussed.

【Keywords】budgetary participation, self-efficacy, attitudes

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1. Introduction

"Budgetary participation has been one of the most researched topics in management accounting for over 40 years." (Shields & Shields, 1998) Previous studies indicated positive effects of participative budgeting on managerial performance and satisfaction through various viewpoints, such as expectancy theory (Brownell & McInnes, 1986), cognitive dissonance theory (Tiller, 1983), person-environment fit theory (Shields, Deng, & Kato, 2000), organizational justice theory (Libby, 1999, 2001) and role theory (Chenhall & Brownell, 1986), but they only provided piecemeal evidence or even inconsistent evidence to these relationships. Shields and Shields (1998) suggested that including more related variables and investigating the direct and indirect effect of budgetary participation are helpful for clarifying the relationships between budgetary participation and managerial outcomes. However, few studies provide comprehensive viewpoints and clarify the direct and indirect effects of budgetary participation.

Bandura's (1977) social-cognitive theory and Weiss and Cropanzano's (1996) affective events theory (AET) are intensively discussed in social psychology and often employed in business management research. In addition, social-cognitive theory provides a cognitive viewpoint and affective events theory suggests an attitudinal perspective to investigate the relationships between organizational behavioral variables and performance. Social-cognitive theory and affective events theory are simultaneously employed in this study. We suggest cognition (Self-efficacy) influences attitudes (McDonald & Siegall, 1992) and then influences behaviors. Therefore, the indirect effects of budgetary participation on managerial outcomes as the sequential relationships: budgetary participation, cognition, attitudes and then managerial outcomes. Accordingly, we propose a comprehensive "cognition-attitudes- behavior" model which will provide practical and research implications for exploring direct and indirect relationships between budgetary participation and managerial outcome criteria.

Bandura's (1977) social-cognitive theory is intensively applied in various disciplines in past decades. The research suggests that intrinsically motivating work (e.g., task significance, task identity, autonomy, and task feedback) enhance enactive mastery experience which is an important source of self-efficacy (Bandura, 1997). In addition, oral feedback and verbal persuasion about ability may influence job self-efficacy (Gist & Mitchell, 1992). Latham, Winters, and Locke (1994) indicate participation in decision making enhances employees' self-efficacy which is regarded as a useful means for improving satisfaction and performance. Thus, we propose that self-efficacy will play a role

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as a mediator in the relationships between budgetary participation and managerial outcome criteria in budgeting setting.

AET indicated some features of work environments influence the attitudinal and behavioral responses of employees (Weiss & Cropanzano, 1996). Experiencing a job as meaningful, feeling responsible for outcomes and receiving feedback from job performance are theorized to lead to positive affect at work (Weiss & Cropanzano, 1996). In addition, Brief and Weiss (2002) argue that attitudes mediate work environment and employee outcomes. This study suggests that budgetary participation enhances features of work environments and leads to employees' positive attitudes. Thus, we suggest that attitudes toward budgetary decision makers will mediate budgetary participation and managerial outcomes.

Hence, this study suggests indirect effects of budgetary participation on job satisfaction and managerial performance through self-efficacy and attitudes toward budgetary decision makers. In addition, this study simultaneously investigates the relationships between mediating variables and managerial outcomes. Accordingly, the study proposes a comprehensive model of budgetary participation's cognitive and attitudinal effects on managerial performance and job satisfaction, which is called budgetary "cognition-attitudes-behavior" model.

2. Literature Review and Hypotheses

2.1 Budgetary Participation and Managerial Outcomes

Budgetary participation is one of the most important issues in management accounting research. Previous empirical budgeting research has devoted much attention to examining how managers react to the participation in their organizational budgetary process. Prior studies also indicate participation in budgetary setting benefits managers in many ways, such as sharing job-related-information (Parker & Kyj, 2006), decreasing information asymmetric (Kren, 1992), diminishing managers' role ambiguity (Chenhall & Brownell, 1986), improving affective organizational commitment (Nouri & Parker, 1998) and trust in superior (Magner, Welker, & Campbell, 1995), and reducing job-related-tension (Kenis, 1979; Shields et al., 2000). However, previous empirical studies provide inconsistent results for budgetary participations' effect on satisfaction and performance. Some studies suggest a significant positive association between budgetary participation and performance (Merchant, 1981; Brownell, 1982b), while some indicate insignificant positive (Milani, 1975; Brownell & Hirst, 1986; Dunk, 1989) and even negative (Stedry, 1958; Cherrington & Cherrington,

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1973). Regarding the association between budgetary participation with satisfaction, some studies also indicate positive (Cherrington & Cherrington, 1973; Milani, 1975; Kenis, 1979; Chenhall, 1986; Chenhall & Brownell, 1986) and insignificant (Brownell, 1981, 1982a). Researchers employ contingency viewpoints (Brownell, 1983; Brownell, 1985; Mia, 1988, 1989) and mediating variables (Chenhall & Brownell, 1986; Kren, 1992; Nouri & Parker, 1998; Shields et al., 2000) to explicate the inconsistency. However, managerial accounting researchers indicate budgetary participation is a means for improving managerial outcomes. Hence, the relationships between budgetary and managerial outcomes need further investigation through various theories and viewpoints.

This study attempts to employ social-cognitive theory and AET to investigate the relationships and suggests that budgetary participation provides the communication opportunities between superiors and subordinates not only with enhancing managerial cognition but also with improving managerial attitudes, which in turn improves their satisfaction and managerial performance.

2.2 Budgetary Participation, Self-efficacy, and Managerial Outcomes

Self-efficacy refers to an employee's belief in his or her ability to perform job-related task (Bandura, 1977). Self-efficacy is regarded as an important variable that will increase employees' performance. This study employs Bandura's (1977) definition and proposes related model and hypotheses.

Latham et al. (1994) indicate participation in decision making enhances self-efficacy, in addition, self-efficacy plays a critical mediating role between participation in decision making and performance. Bandura (2000) suggests that supportive relationships can enhance self-efficacy through managing problems and providing positive incentive and resource for effective coping. Budgetary participation is regarded useful for the supportive relationships. Furthermore, participating in budget setting, managers can obtain more job-related information (Kren, 1992). Hence, managers will believe that they are able to finish the assignments and missions from their superiors, when they participate in the budgetary setting. Accordingly, we proposed a positive relationship between budgetary participation and self-efficacy.

H1: Budgetary participation and self-efficacy are positively correlated.

Previous studies suggest that self-efficacy is a useful means for improving job-related outcomes such as satisfaction and performance. Judge and Bono (2001) suggest the positive relationship between self-efficacy and job satisfaction. With higher self-efficacy, individual

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will involve more effort and be more patient to overcome job-related obstacles (Bandura, 1977). Hence, individuals will believe they are able to achieve organizational goals and will be satisfied with their job.

In addition, previous empirical studies validate a positive relationship between self-efficacy and performance (Barling & Beattie, 1983; Locke, Frederick, Lee, & Bobko, 1984; Lee & Gillen, 1989; Mathieu, Martineau, & Tannenbaum, 1993; Prussia, Anderson, & Manz, 1998). Bandura (1977) suggests that higher self-efficacy employees will involve more effort and be more patient to overcome job-related obstacles. Hence, high self-efficacy will improve managerial performance. The hypotheses are proposed.

H2a: Self-efficacy and job satisfaction are positively correlated.

H2b: Self-efficacy and managerial performance are positively correlated.

2.3. Budgetary Participation, Attitudes, and Managerial Outcomes

Magner et al. (1995) indicate that budgetary participation influences attitudes toward budgetary decision makers including subordinates' trust in superior and affective organizational commitment. In addition, Brayfield and Crockett (1955) suggest that individual's attitudes influence performance. Thus, this study suggests that managers' participation in budget setting will directly influence their attitudes toward budgetary decision makers, in turns affect their satisfaction and performance. The following section describes the roles of trust in superior and organizational commitment between budgetary participation and managerial outcomes.

2.3.1 Trust in Superior

Trust is regarded as the belief that an individual would like to depend on another party with positive confident expectations (Das & Teng, 1998; Lewicki, McAllister, & Bies, 1998), which is introduced as affect-based trust by Lewis and Weigert (1985). McAllister (1995) suggests that affect-based trust is individual's belief of caring and considerations in others and is considered to be significantly associated with individual's performance. Furthermore, affective events theory indicates that affective attitudes of employees are influence features of work environments. Accordingly, this study specifies trust in superior as an affect-based trust.

Participative budgeting enhances managers' trust in their superiors (Magner et al., 1995). Participation in budgetary setting provides communication opportunity for managers to express their opinions and views in budget decision making (Chenhall & Brownell 1986;

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Magner et al., 1995). Subordinates managers' participation in the budgeting decision process will enhance their perception of budgeting procedure fairness (Magner et al., 1995). The procedure fairness induces managers' trust in superior (Kim & Mauborgne, 1993; Konovsky & Pugh, 1994). Hence, this study suggests that budgetary participation will improve subordinate managers' trust in their superior. Hypothesis three is proposed as follows:

H3: Budgetary participation and trust in superior are positively correlated.

Previous studies suggest trust and job satisfaction are positively correlated (Driscoll, 1978; Lagace, 1991; Muchinsky, 1977; Pillai, Schriesheim, & Williams, 1999; Rich, 1997). Driscoll (1978) and Pillai et al. (1999) indicate that trust in superior-subordinate relations influence subordinate job satisfaction. We suggest that managers with higher trust in their superiors will perceive fair and reasonable treatments and supports from their superiors, and then improve their job satisfaction.

In addition, positive association between trust and performance is also proposed and validated (Earley, 1986; McAllister, 1995; Dirks & Ferrin, 2001; Atuahene-Gima & Li, 2002). Because managers with high trust in superior believe that their involving in their job will obtain fair and reasonable treatment, performance will benefits from trust (Atuahene-Gima & Li, 2002). Hence, this study suggests high trust in superior will improve managerial performance.

H4a: Trust in superior and job satisfaction are positively correlated.

H4b: Trust in superior and managerial performance are positively correlated.

2.3.2 Organizational Commitment

A number of researchers classify organizational commitment as affective and continuance commitment (Meyer & Allen, 1984, 1990). Affective organizational commitment refers to an emotional attitude toward an organization, while continuance is an attitude which employees would like to stay in an organization. In addition, Mowday, Porter, and Steers (1982) suggest organizational commitment refers to the degree of employees' attitude toward the organization and involvement in the organization. Higher organizational commitment is correlated to higher acceptance and commitment to the organizational goals and value. This study attempts to investigate the role of managers' attitude toward organization in participative budgetary system. We employ affective organizational commitment to explore the theoretical modeling and hypotheses.

Participation in decision making enhances affective organizational commitment (Rhodes & Steers, 1981; Mayer & Schoorman, 1998). In budget decision making, previous

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researchers also suggested managers' participation will enhance their organizational commitment (Magner, et al., 1995; Nouri & Parker, 1998; Parker & Kyj, 2006). Managers' participation in budgetary setting will improve the understanding of organizational goal setting and enhance their perception of procedural justice in budgetary setting (Magner et al., 1995). Procedural justice of managers directly improves their organizational commitment (Kim & Mauborgne, 1993). Hence, we propose that budgetary participation will enhance managers' affective organizational commitment.

H5: Budgetary participation and affective organizational commitment are positively correlated.

Employees' affective organizational commitment and job satisfaction are positively correlated (Mowday, Steers, & Porter 1979; Bateman & Strasser, 1984; Vandenberg & Lance, 1992; Liou, 1995). Bateman and Strasser (1984) and Vandenberg and Lance (1992) investigate the casual relationship between organizational commitment and job satisfaction and their results show that organizational commitment is an antecedent of job satisfaction. Hence, this study suggests that managers with higher organizational commitment will involve more effort to achieve organizational goals and then obtain higher job satisfaction.

Previous organizational behaviorists indicate that affective organizational commitment benefits employees' performance (Allen & Meyer, 1996; Randall, 1990; Nouri & Parker, 1998; Riketta, 2002). When managers highly commit to their organization, they will accept organizational goals and involved more effort to attain the goals and then improve their performance. The hypotheses are proposed.

H6a: Affective organizational commitment and job satisfaction are positively correlated.

H6b: Affective organizational commitment and managerial performance are positively correlated.

2.4 Self-efficacy vs. Attitudes

McDonald and Siegall (1992) suggest that employees' self-efficacy positively influence their affective organizational commitment and trust in superior. Bandura (1977) defines self-efficacy as an employee's belief in his or her ability to perform job-related task and suggests that efficacy expectation will influence individual's choice of environment. Higher self-efficacy managers will choose the organization which they can fit in (Bandura, 1997). In addition, Latham et al. (1994) argues that the self-efficacy is influenced by managers' participation in the budget setting. In the budget setting process, they can achieve more job-related information (Kren, 1992), so as to improve their self-efficacy. If managers

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believe that they are able to achieve more information and resources from their organization and superiors to perform their tasks in the organization, they will have high self-efficacy. Hence, high self-efficacy managers will have positive attitudes toward their superior and organization (McDonald & Siegall, 1992). Thus, we hypothesize that managers with high self-efficacy will be more committed to the organization and trust in their superior.

H7a: Self-efficacy and affective organizational commitment are positively correlated.

H7b: Self-efficacy and trust in superior are positively correlated.

2.5 Organizational Commitment vs. Trust in Superior

Pillai et al. (1999) and Liou (1995) suggest the positive relationship between trust in superior and organizational commitment. Managers with higher trust in superiors will emotionally believe that superiors will treat them fairly and reasonably. Hence, trust in superior will enhance the affective organizational commitment and involve effort in organizational goals. Thus, we propose the following hypothesis:

H8: Trust in superior and affective organizational commitment are positively correlated.

2.6 Job Satisfaction and Managerial Performance

Behaviorists and researchers of various disciplines indicate that job satisfaction is a critical job-related attitude that will positively influence employees' performance (Brown & Peterson, 1993; Hartline & Ferrell, 1996). However, the relationship between satisfaction and managerial performance in participative budgeting system is not yet investigated in previous literature. Hence, this study hypothesizes that job satisfaction positively influence managerial performance.

H9: Managers' job satisfaction and managerial performance are positively correlated.

3. Method

3.1 Sample and Data Collection

This study employed a cross-sectional questionnaire survey to collect empirical data from a sample of 900 subordinate managers who were randomly selected from manufacturing companies listing in the Taiwan Stock Exchange. A mail questionnaire with a cover letter and a self-addressed prepaid envelope was forwarded. The subordinate managers refer to the managers who play a role in the budgeting process and have to communicate with their superiors for their budget results.

Questionnaires were received from 179 respondents, in which 15 responses were

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removed for incomplete responses, yielding an effective response rate of 18.2%. Therefore, 164 responses were available in data analysis. The average age of the respondents was 42.08 years, and the average time spent in their present organization and current position were 12.29 years and 4.63 years, respectively. The main functional areas in which respondents were employed include accounting (39.63%), production (31.10%), marketing (20.12%), and others (9.15%). 76.83% of the respondents were male.

3.2 Measures

3.2.1 Budgetary Participation

This study used Milani's (1975) six-item scale which was frequently employed by prior studies. The instrument includes several aspects of budgetary participation- frequency, involvement, influence, importance of subordinate input and the supervisor's explanations for change. The scale is a seven point Likert-type scale ranging from one (very little) to seven (very much). Previous studies report satisfactory validity and reliability for the scale (Brownell, 1982b; Mia, 1988; Dunk, 1989; Nouri & Parker, 1998).

3.2.2 Self-efficacy

Self-efficacy was operationlized as the extent to which managers feel confident about their job skills, abilities, qualifications, and confidence. The measure is an eight-item scale developed by Jones (1986). Managers rated each item on a seven-point scale ranging from "Strongly Disagree" to "Strongly Agree". Higher score reflect higher perceived self-efficacy.

3.2.3 Trust in Superior

McAllister's (1995) affect-based trust was employed to measure emotional trust held by subordinates in their superiors. The five-item instrument is a seven point Likert-type scale ranging from one (strongly disagree) to seven (strongly agree). McAllister (1995) provided evidence for the convergent and discriminate validity of this measure.

3.2.4 Organizational Commitment

Organizational commitment was operationlized as the relative affective strength of managers' identification with and involvement in the organization. The instrument was measured with the nine-item short form of the Mowday et al. (1979) affective organizational commitment scale.

3.2.5 Job Satisfaction

Job satisfaction employed the work of Brown and Peterson (1993) which was operationalized as an eight-item measure that assesses satisfaction with eight facets of the overall job (e.g., pay, coworkers, superior). The measure asks managers to indicate how

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satisfied they are with each facet, using a seven-point scale ranging from "Extremely Dissatisfied" to "Extremely Satisfied". After averaging across facets, higher scores reflect higher overall job satisfaction.

3.2.6 Managerial Performance

Managerial performance which was measured by a modified nine-item scale from Mahoney, Jerdee, and Carroll (1963, 1965) is a manager's self-rating instrument and consists of eight performance facets and one overall effectiveness facet. Subordinate managers were asked to evaluate their managerial performance from these items. In this study, we average across facets, higher scores reflect higher overall managerial performance.

4. Statistical Analysis and Results

This study employs structural equation modeling (SEM) to test the hypotheses and results of the statistical analysis that are presented in this section. Kline (1998) suggests that SEM is the preferred method to analyze multiple relationships simultaneously and provides measures of overall model fit. In addition, SEM also provides the significant of each if the relationships between variables and has better ability to model multiple relationships than path analysis and multiple regression.

Schumacker and Lomax (1996) suggest a two-stage process to analyze the data in structural equation modeling. First, each latent variable was modeled as a separated measurement model. A measurement model relates observed variables to their associated latent variable. The latent variables are Budgetary Participation (BP), Self-efficacy (SE), Organizational Commitment (OC), Trust in Superior (Trust), Job Satisfaction (JS) and Managerial Performance (MP). Second, we constructed the structural model by specifying the relationships between the latent variables.

4.1 Measurement Models

While developing the measurement models, some items of latent variables were removed and all original items were reported in Appendix A. For example, in budgetary participation variable, the item 2 'The amount of reasoning providing to me by a supervisor when the budget is revised' was removed because of its highly error covariance with the item 1 'The portion of the budget I am involved in setting', because highly error covariance between items results in poor measurement model fit. The other variables have the similar problem and the items were also removed (see details in Appendix A). In addition, the descriptive statistics and correlation coefficients for final variables were shown in Table 1.

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Composite reliabilities of variables are also calculated and shown in Appendix B. The Cronbach (1951) alpha coefficients were judged acceptable using Nunnally's (1978) criteria of a minimum value of 0.7.

The measurement modeling used LISREL 8.52 to conduct confirmatory factor analysis for each latent variable. Details of the fit indices for each measurement model were shown in Table 2. Model fit is defined as the "degree to which the actual/observed input matrix is predicted by the estimated model" by Hair, Anderson, Tatham, and Black (1998). Because there is no single measure of fit for structural equation modeling, we include a range of fit indices, such as Chi-square, Goodness-of Fit (GFI), Adjusted Goodness-of Fit (AGFI) and Akaike Information Criterion (AIC). Hu and Bentler (1999) suggested a good fit model should have a non-significant Chi-square and minimum 0.90 of GFI index. AGFI and AIC were used to measure model parsimony. AGFI were suggested a good fit minimum cutoff of 0.9 and AIC should be less than for the saturated model. In Table 2, the fit indices for each measurement model were better than the recommended criteria except General Factor (GF) which is tested for the common method biases among all variables.

Table 1. Measure Means, Standard Deviations and Correlations for Final Variables

Measure	Mean	SD	BP	OC	Trust	SE	JS	Cronbach's alpha
BP	5.021	0.789						0.8281
OC	4.917	0.861	0.297 (0.150,0.430)					0.9133
Trust	4.910	0.866	0.227 (0.076,0.367)	0.550 (0.433,0.649)				0.9247
SE	4.974	0.694	0.270 (0.122,0.406)	0.349 (0.207,0.477)	0.299 (0.153,0.432)			0.8040
JS	4.720	0.674	0.275 (0.127,0.410)	0.658 (0.561,0.737)	0.595 (0.486,0.686)	0.396 (0.258,0.518)		0.8127
MP	5.124	0.647	0.297 (0.151,0.430)	0.526 (0.405,629)	0.485 (0.358,0.594)	0.418 (0.283,0.537)	0.557 (0.441,0.654)	0.8806

Note:n=164; All coefficients are significant at the p <0.01 level. 95% Confidence intervals of correlations are parenthesized.

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Table 2. Model Fit for Measurement Models

Variables	χ^2	df	P	GFI	AGFI	AIC (saturated model)
BP	1.06	2	0.590	0.997	0.984	17.057 (20)
SE	6.54	5	0.257	0.984	0.953	26.539 (30)
Trust	0.20	2	0.905	0.999	0.996	16.199 (20)
OC	2.38	5	0.794	0.994	0.983	22.382 (30)
JS	1.19	2	0.553	0.996	0.982	17.185 (20)
MP	12.61	5	0.03	0.970	0.910	32.618 (30)
GF	58.21	9	0.000	0.8936	0.752	82.206 (42)

BP, Budgetary Participation; SE, Self-efficacy; OC, Organizational Commitment; Trust, Trust in Superior; JS, Job Satisfaction; MP, Managerial Performance; GF, General Factor.

Regarding the degree of common method problem of this research, Podsakoff, MacKenzie, Lee, and Podsakoff (2003) suggest techniques for controlling common method biases including procedural and statistical remedies. In procedural remedies, this study applied Podsakoff and Organ's (1986) scale item trimming. Prior to conducting the confirmatory factor analysis, we remove some items because of the similar meaning of variables and highly error covariance with other items. Podsakoff et al. (2003) indicate improving scale items is possible to reduce method through the careful construction of the items themselves. Additionally, in statistical remedies, Harman's single-factor test is the most widely used techniques (Podsakoff et al., 2003; Peng, Kao, & Lin, 2006). We load all of the variables in our study into one exploratory factor analysis and examine the unrotated factor solution. The results do not present a single factor emerging from the factor analysis or one general factor account for the majority of the covariance among the measures. Furthermore, confirmatory factor analysis (CFA) is used as a more sophisticated test of the hypothesis that a single factor can account for all of the variance in our data (Podsakoff et al., 2003). In Table 2, we construct a general factor (GF) for the all latent variables and test if GF can be the common method factor. All of the CFA model fit indices indicate this research does not have the common method problem.

Before constructing our hypothesized model, we confirmed convergent and discriminate validity. First, in the Table 2, measurement models are used to measure each latent variable and to show confirmatory factor analysis. Our models show good model fit indices which suggest good convergent validity of the latent variables. Second, in Table 1, 95% confidence intervals of the correlations among the variables, which do not include 1.00, indicate good discriminate validity between each pair of variables. In addition, we employ a

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confirmatory factor model including all items and constructs to confirm the convergent and discriminate validity, again. The results are shown in Appendix B. According to Fornell and Larcker (1981), good convergent validity suggests that the factor loading of each item should be significant and greater than 0.5 and average variance extracted should be greater than 0.5. The results indicate the items converge on each construct except the Self-efficacy. However, according to Kerlinger (1986), if the construct have significantly relationship with the items and the correlations coefficients are greater than 0.7, it reveals acceptable convergent validity. The correlations coefficients between Self-efficacy and items are greater than 0.7. Hence, we conclude that all constructs in this study have acceptable convergent validity. Good discriminate validity suggests the average variance extracted of constructs should greater than the square of the correlation coefficients between related constructs (Fornell & Larcker, 1981). The results suggest all constructs have acceptable discriminate validity. After reliability, convergent validity, discriminate validity, and the degree of common method variance are confirmed, the structural model is constructed.

4.2 The Structure Model

In the second stage, we constructed the structural model and specified the relationships between the latent variables. After averaging the items remaining in each variable following the confirmatory factor analysis, we calculated the correlation matrix which reveals significant correlations between the variables in Table 1. According to Schmidt and Hunter (1996), after correcting the measurement errors of latent variables, we constructed the hypothesized structural model. Analysis of hypothesized model indicates acceptable model fit for a number of fit indices in Table 3. Chi-square 2.378 (df=2, p=0.305) and all other fit indices are above acceptable levels (GFI=0.995; CFI=0.999; AGFI=0.949; AIC=40.378 (saturated model 42). However, the insignificant path (H4b) from trust in superior to managerial performance is deleted from the model. After the deletion, the final model (as shown in Figure 1) also yields acceptable model fit indices (Chi-square 5.237 (df=3, p=0.155); GFI=0.989; CFI=0.996; AGFI=0.926; AIC=41.237 (saturated model 42)) and does not have significant difference in model fit from the hypothesized model. The comparison of Good-of Fit indices of two models and a summary of the coefficients for each path are presented in Table 3.

4.3 The Results

In our final model, the results indicate good model fit with eleven paths significant at

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p<=0.001 and one path significant at p<=0.05. The insignificant Chi-square for the model of 5.237 (df=3, p=0.155) and GFI=0.989 indicate good overall fit. The comparative fit measure (CFI=0.996) and parsimony measures (AGFI=0.926; AIC=41.237 (saturated model 42)) all indicate good model fit. The final results and paths between latent variables are shown in Figure 1.

The final model indicates self-efficacy and attitudes mediate the relationships between budgetary participation and managers' outcome criteria, but the association between trust in superior and managerial performance (H4b) is not supported in this study. We suggest the possible reason may because of the Chinese culture. Chinese employees may have different perception with trust in supervisor from the Western (Atuahene-Gima & Li, 2002; Luo, 2002). However, trust in superior still influence managerial performance through job satisfaction. In short, the mediating effect of trust in superior between budgetary participation and managerial performance is not supported, but the cognitive and attitudinal effects of budgetary participation on managerial outcomes through self-efficacy and affective organizational commitment are validated.

Table 3. Hypothesized and Final Model: Structural Parameter Estimates

		Hypothesized Model			Final Model		
Path	**Hypothesis**	**Coeff.**	**Standard error**	**t-value**	**Coeff.**	**Standard error**	**t-value**
BP→SE	H_1	0.291	0.065	4.463	0.291	0.065	4.463
SE→JS	H_{2a}	0.169	0.047	3.590	0.169	0.047	3.590
SE→MP	H_{2b}	0.206	0.060	3.442	0.206	0.060	3.442
SE→ Trust	H_{7a}	0.366	0.096	3.803	0.366	0.096	3.803
SE→ OC	H_{7b}	0.230	0.082	2.811	0.230	0.082	2.811
BP→Trust	H_3	0.178	0.085	2.109	0.178	0.085	2.109
Trust→JS	H_{4a}	0.256	0.043	5.970	0.256	0.043	5.970
Trust→MP	H_{4b}	0.101	0.058	1.740			
Trust→OC	H_8	0.492	0.064	7.675	0.492	0.064	7.675
BP→OC	H_5	0.166	0.070	2.369	0.166	0.070	2.369
OC→JS	H_{6a}	0.388	0.044	8.754	0.388	0.044	8.754
OC→MP	H_{6b}	0.120	0.066	1.818	0.138	0.066	2.099
JS→MP	H_9	0.323	0.096	3.359	0.394	0.088	4.484
Goodness-of-fit statistics:		χ 2=2.378, df=2, p=0.305 GFI=0.995 CFI= 0.999 AGFI= 0.949 RMSR=0.009 AIC= 40.378 (saturated model= 42.000)			χ 2=5.237, df=3, p=0.155 GFI=0.989 CFI= 0.996 AGFI= 0.926 RMSR=0.013 AIC= 41.237 (saturated model= 42.000)		

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In addition, the relationships between mediators and outcome variables are supported. Self-efficacy is positively associated with trust in superior (H7a) and affective organizational commitment (H7b). Hence, self-efficacy mediates the relationship between budgetary participation and attitudes. Organizational commitment plays the mediating roles between self-efficacy and managers' outcomes, because the significant relationships between organizational commitment and managers' outcomes criteria. Furthermore, higher level of trust in superior enhances managers' affective organizational commitment (H8). Managers' job satisfaction significantly influences managerial performance (H9). Accordingly, we conclude the sequential relationships: budgetary participation influences self-efficacy, attitudes and finally managerial outcomes.

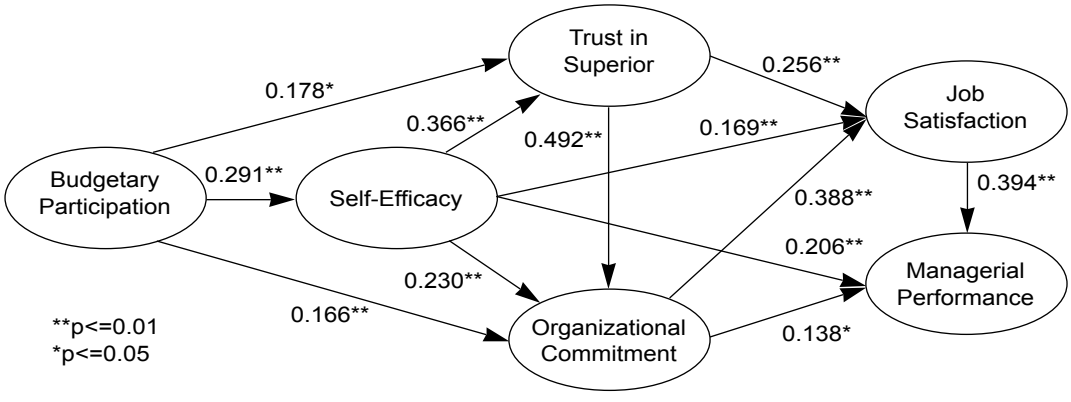


Figure 1. A Path Diagram of Structural Relationships: Final Model

5. Conclusion and Discussion

In this study, we proposed the mediating roles of managers' self-efficacy and attitudes toward budget decision makers in the relationships between budgetary participation and managerial outcome criteria. This study supports that managers' self-efficacy plays a critical role to influence managerial performance and job satisfaction. Regarding the role of attitudes toward budget decision makers, the results are consistent with most of previous studies and indicated that budgetary participation has a positive effects on attitudes and indirect effect on managerial performance and job satisfaction through the attitudes. In addition, the results suggest that managers' self-efficacy improves outcome criteria through the attitudes. Although the relationship between trust in superior and managerial performance is insignificant, trust in superior still influences managerial performance through job satisfaction. We conclude that participation in budgetary decision making affects

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self-efficacy, trust in superior and organizational commitment, and finally their performance and satisfaction. This study suggests these relationships as a budgetary "cognition- attitudes-behavior" model. Besides, we again validate the conclusion as indicated in previous studies that the positive effect of budgetary participation especially through the view points of social-cognitive theory (Bandura, 1977) and AET (Weiss & Cropanzano, 1996) in this study.

This study follows part of Shields and Shields' (1998) future research suggestions for budgetary participation. First, we expand the research scope to investigate the indirect and direct roles of self-efficacy and attitudes between budgetary participation and performance (and satisfaction). Second, we develop a comprehensive budgetary "cognition-attitudes-behavior" model which includes self-efficacy, attitudes and managerial performance simultaneously and the structural equation model is used to test measurement and structure. In addition, we clearly identify the direct and indirect effects of budgetary participation through the empirical data in Taiwan. These theoretical contributions may help the future management accounting research that budgetary participation effects on managerial performance could include more contextual variables and construct comprehensive models to clarify the direct and indirect effects.

This study provides some management implications. First, self-efficacy and attitudes play a key role to improve managers' performance and job satisfaction. Business managements have to pay more attentions to the contextual variables including not only budgetary participation but also other positive antecedents. Second, even though this study proposes positive influences of budgetary participation on the mediating and managerial outcome criterion, previous studies indicate that the negative effects may also exist in budget control system. The self-efficacy and attitudes may be also positively or negatively influenced by others antecedents in budget control and management system, such as budget-based performance measures, budget-based compensation and budget-based evaluation. Hence, we suggest business management should also pay attentions to not only the positive influences of self-efficacy and attitudinal while using budget control, but also the negative effects of those budget-related mechanisms.

Some future research directions are suggested. Although discussion of the potential impact of common method problem has been over decades, previous studies suggest we need to pay more attentions to this issue. Though this study tested common method variance and did not find the problem, it was hopeful to be prevented before the distribution of samples. Peng et al. (2006) indicate there are two useful approaches to prevent common method covariance before data collection: separation approach of data collecting and design

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approach of instrument developing. We suggest that future budgeting or related researches may employ these approaches to effectively prevent the common method problem.

Though participation in budget-setting is regarded as a critical mechanism in previous studies, other management accounting variables including budget tightness, controllability filters, budget-based performance measures, budget-based compensation and budget-based evaluation can be included in the budgeting systems to influence the model we proposed. There is much opportunity for such research because little is known about the interrelationships between these variables. In addition, it is important for research to identify whether the effects between these variables are direct (on dependent variables) or indirect (on criterion variables). These future research suggestions will enhance the development and testing of comprehensive models of management accounting systems.

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Appendix

A. Survey instruments

Budgetary participation

1. The portion of the budget I am involved in setting.
2. The amount of reasoning providing to me by a supervisor when the budget is revised. *
3. The frequency of budget-related discussion with supervisor initiated by me.
4. The amount of influence I feel I have on the final budget.
5. The importance of my contribution to the budget.*
6. The frequency of budget-related discussion initiated by my supervisor when budgets are being set.

Trust in superior

1. We have a sharing relationship. We can both freely share our ideas, feelings and hopes.
2. I can talk freely to my superior about difficulties I am having at work and know that my superior will want to listen.
3. We would both feel a sense of loss if one of us was transferred and we could no longer work together.
4. If I shared my problems with this person, I know my superior would respond constructively and caringly.
5. I would have to say that we have both made considerable emotional investments in our working relationship. *

Self-efficacy

1. My job is well within the scope of my abilities. *
2. I did not experience any problems in adjusting to work at this organization.
3. I feel that I am overqualified for the job I am doing.
4. I have all the technical knowledge I need to deal with my job, all I need now is practical experience.*
5. I feel confident that my skills and abilities equal or exceed those of my colleagues.
6. My past experiences and accomplishments increase my confidence that I will be able to perform successfully in this organization.
7. I could have handled a more challenging job than the one I am doing.
8. Professionally speaking, my job can not satisfy my expectations of myself. *

Organizational commitment

1. I am willing to put in a great deal of effort beyond that normally expected in order to

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help this organization be successful. *
2. I talk up this organization to my friends as a great organization to work for. *
3. I would accept almost any type of job assignment in order to keep working for this organization.
4. I found that my values and the organization's value are very similar. *
5. I am proud to tell others that I am part of this firm.
6. This organization really inspires the very best in me in the way of job performance.
7. I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.
8. For me this is the best of all possible organizations for which to work.
9. I really care about the fate of this organization.*

Managerial performance: Rate your performance as a manager on the following tasks.

1. Planning
2. Investigating
3. Coordinating *
4. Evaluating *
5. Supervising
6. Staffing
7. Negotiating *
8. Representing *
9. Your overall performance

Job Satisfaction: Rate your job satisfaction as a manager on the following items.

1. Your overall job *
2. Your fellow workers *
3. Your supervisor(s)
4. Your organizational policies
5. The support provided by your organization
6. Your salary or wages *
7. Your opportunities for advancement with this organization
8. Your organization's customers *

Note: * The items were deleted from the measurement models.

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B. Confirmatory factor model including all items and constructs

Construct	Item	Factor Loading	Standard Error	t value	Composite Reliability	Average Variance Extracted
BP	BP1	0.69	0.49	9.47	0.832	0.554
	BP3	0.77	0.41	10.65		
	BP4	0.63	0.34	9.99		
	BP6	0.79	0.44	10.58		
SE	SE2	0.56	0.7	7.16	0.801	0.410
	SE3	0.54	0.71	6.92		
	SE5	0.69	0.38	10.67		
	SE6	0.63	0.32	10.65		
	SE7	0.66	0.25	11.24		
OC	OC2	0.66	0.44	10.19	0.916	0.578
	OC5	0.78	0.25	13.07		
	OC6	0.85	0.24	13.76		
	OC7	0.85	0.19	14.39		
	OC8	0.98	0.44	12.77		
T	T1	0.85	0.19	14.35	0.926	0.757
	T2	0.86	0.13	15.27		
	T3	0.85	0.16	14.8		
	T4	0.77	0.41	11.41		
ST	ST3	0.59	0.4	9.32	0.818	0.529
	ST4	0.59	0.26	10.75		
	ST5	0.68	0.28	11.39		
	ST7	0.59	0.4	9.37		
MP	MP1	0.69	0.16	13.32	0.883	0.545
	MP2	0.58	0.36	9.76		
	MP5	0.61	0.27	11.03		
	MP6	0.7	0.34	11.26		
	MP9	0.6	0.21	11.78		
Goodness-of-fit statistics: χ2=491.91, df=309, (p=0.00), χ2/df=1.59 CFI= 0.97; NFI = 0.93; NNFI=0.97; GFI=0.82; RMSR=0.053						

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