

**Budgetary Participation's Effect on Managerial Outcomes:
Mediating Roles of Self-Efficacy and Attitudes toward Budgetary
Decision Makers**

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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. Although the mediating role of self-efficacy is not significant, the results show that the indirect effects of budgetary participation on managerial outcomes through attitudes are supported. Implications and directions for future research are discussed.

Key words: budgetary participation; self-efficacy; trust in superior; organizational commitment; job satisfaction; managerial performance

1. Introduction

Previous studies have indicated the effects of participative budgeting on managerial performance and satisfaction through various viewpoints, such as expectancy theory (eg. Brownell and McInnes, 1986), cognitive dissonance theory (eg. Tiller, 1983), person-environment fit theory (eg. Shields, Deng and Kato, 2000), organizational justice theory (eg. Libby, 1999, 2001) and role theory (eg. Chenhall & Brownell, 1988), but the relationships are still equivocal. This study attempts to investigate indirect effects of budgetary participation on satisfaction and performance by employing social-cognitive and affective events theories.

Bandura's (1977) social-cognitive theory is intensively applied in various disciplines in past decades. The research suggests that intrinsically motivating work (eg. 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 and Mitchell, 1992). Latham, Winters, & 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 as a mediator in the relationships between budgetary participation and managerial outcome criteria in budgeting setting.

Affective events theory (AET) indicated some features of work environments influence the attitudinal and behavioral responses of employees. Experiencing a job as a 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, because the relationships between mediating variables will influence the budgetary participation's positive effect, they are investigated in this study. Accordingly, the study proposes a comprehensive model of budgetary participation's attitudinal and cognitive effects and empirical data is used to validate our theoretical model as shown in Figure 1.

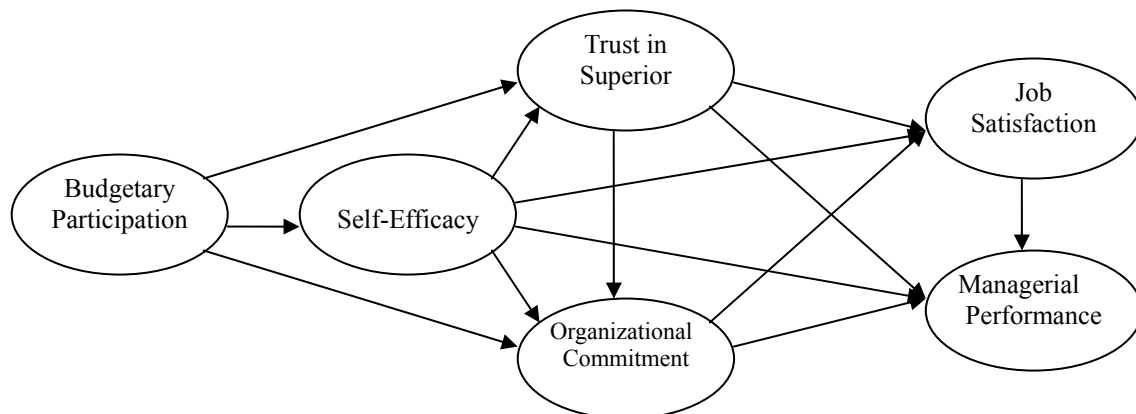


Figure 1. The indirect effect of budgetary participation on managerial outcomes: Hypothesized model

2. Literature review and hypotheses

2.1 The relationships between budgetary participation and managerial outcomes

Previous empirical studies indicate the relationship between budgetary participation and performance is inconsistent. Some studies suggest a significant positive association (e.g. Merchant, 1981; Brownell, 1982), while some indicate insignificant positive (e.g. Milani, 1975; Brownell & Hirst, 1986; Dunk, 1989) and even negative (e.g. Stedry, 1960; Cherrington & Cherrington, 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, 1988) and insignificant (Brownell 1981, 1982). Researchers employ contingency viewpoints (e.g. Brownell, 1983; Brownell, 1985; Mia, 1988, 1989) and mediating variables (e.g. Chenhall & Brownell, 1988; Kren, 1992; Nouri & Parker, 1998; Shields, Deng & Kato, 2000) to explicate the inconsistency. However, managerial accounting researchers indicate budgetary participation is a means for improving managerial outcomes. This study employs mediating variables and suggests that budgetary participation has an indirect positive effect on satisfaction and managerial performance.

Prior studies 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, 1988), improving affective organizational commitment (Nouri & Parker, 1998) and trust in superior (Magner, Welker, & Campbell, 1995), and reducing job-related-tension (Kenis, 1979; Shields, Deng, & Kato, 2000). However, previous empirical studies provide inconsistent results for budgetary participations' effect on satisfaction and performance. This study suggests that budgetary participation provides the communication opportunities between superiors and subordinates not only with improving managerial attitudes but also with enhancing managerial cognition, in turn improves their satisfaction and managerial performance.

2.2 Self-efficacy as a cognitive mediator

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, Winters, and Locke (1994) indicate participation in decision making can improve self-efficacy, in addition, self-efficacy plays a critical mediating role between participation in decision making and performance. Bandura (2000) suggest 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 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.

H_{2a}: Self-efficacy and job satisfaction are positively correlated.

H_{2b}: Self-efficacy and managerial performance are positively correlated.

2.3 Attitudes as affective mediators

Magner et al. (1995) indicate budgetary participation influences attitudes toward budget decision makers including subordinates' trust in superior and affective organizational commitment. In addition, Brayfield & 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 job 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 & 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 1988; Magner et al., 1995). Subordinates managers' participation in the budgeting decision process will enhance their perception of budgeting procedure fairness (Magner et al., 1995; Lindquist, 1995; Wentzel, 2002). 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 one 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; Legace, 1991; Muchinsky, 1977; Pillai, Schriesheim, & Williams, 1999; Rich, 1997). Driscoll (1978) and Pillai, Schriesheim, & Williams (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 treatment 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.

H_{4a}: Trust in superior and job satisfaction are positively correlated.

H_{4b}: Trust in superior and managerial performance are positively correlated.

2.3.2 Organizational commitment

A number of researchers classified organizational commitment as affective and continuance commitment (eg. 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 Steer (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 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; Lindquist, 1995; Wentzel, 2002). 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 organizational commitment are positively correlated.

Employees' organizational commitment and job satisfaction are positively correlated (Mowday, Steer & 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 (e.g. Allen & Meyer, 1996; Randall, 1990; Nouri & Parker, 1998; Riketta, 2002). When managers highly commit to an organization, they will accept organizational goals and involved more effort to attain the goals and then improve their performance. The hypotheses are proposed.

H_{6a}: Organizational commitment and job satisfaction are positively correlated.

H_{6b}: Organizational commitment and managerial performance are positively correlated.

2.4 Self-efficacy vs. attitudes toward budget decision makers

McDonald & Siegall (1992) suggest that employees' self-efficacy positively influence their affective organizational commitment and trust in superior. Bandura (1977) suggest that efficacy expectation will influence individual's choice of environment. Managers with high self-efficacy will believe that they are able to perform their tasks and will engage in fewer withdrawal behaviors. The withdrawal behaviors are related to employees' organizational commitment (Steers, 1977). In addition, managers will have more belief of caring and considerations in their superiors. Thus, we hypothesize that managers with high self-efficacy will be more committed to the organization and trust in their superior.

H_{7a}: Self-efficacy and organizational commitment are positively correlated.

H_{7b}: Self-efficacy and trust in superior are positively correlated.

2.5 Relationship between attitudes toward budget decision makers

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 organizational commitment are positively correlated.

2.6 Relationship between managerial outcomes

Behaviorists and researchers of various disciplines indicate that job satisfaction is a critical job-related attitude that will positively influence employees' performance (e.g., 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 hypothesize 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 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 play a role in the budgeting process and the accountability for budget results.

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

Budgetary participation

This study used Milani's (1975) six-item scale which was frequently employed by prior studies. The instrument assesses the respondent's involvement in and influence on the budget process. 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 (e.g., Brownell, 1982b; Mia, 1988; Dunk, 1989; Nouri & Parker, 1998).

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.

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.

Organizational commitment

Organizational commitment was operationalized 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.

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 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.

Managerial performance

Managerial performance which was measured by a modified nine-item scale from Mahoney, Jerdee, & 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

4.1 Measurement models

Schumaker 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 measure model. A measure model relates observed variables to their associated latent variables. The latent variables were Budgetary Participation, Organizational Commitment, Trust in Superior, Self-efficacy, Job Satisfaction and Managerial Performance. Second, we constructed the structural model by specifying the relationships between the latent variables. In this section, we will describe the first stage.

The measurement modeling was use 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 1.

Model fit is defined as the “degree to which the actual/observed input matrix is predicted by the estimated model” by Hair, Anderson, Tatham & 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 & 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 goof fit minimum cutoff of 0.9 and AIC should be less than for the saturated model. In Table 1, the fit indices for each measurement model were better than the recommended criteria.

TABLE 1. Model fit for measurement models

Variables	χ^2	df	P	GFI	AGFI	AIC(saturated model)
BP	1.95	5	0.856	0.995	0.986	21.954(30)
SE	8.35	9	0.499	0.983	0.961	32.352(42)
OC	15.25	14	0.361	0.974	0.948	43.253(56)
Trust	0.2	2	0.905	0.999	0.996	16.199(20)
JS	7.92	5	0.161	0.981	0.943	27.921(30)
MP	13.95	9	0.124	0.972	0.935	37.946(42)

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

In addition, while developing the measurement models, some items were deleted and reported in Appendix. 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’. The highly error covariance between items results in a poor measurement model fit. The other variables have the similar problem and the items were also removed (see details in Appendix). In addition, the descriptive statistics and correlation coefficients for final variables were shown in Table 2. The Cronbach (1951) alpha coefficients were judged acceptable using Nunnally’s (1978) criteria of a minimum value of 0.7.

TABLE 2. Measure correlations, means, and standard deviations for final variables

Measure	Mean	SD	BP	OC	Trust	SE	JS	Cronbach’s alpha
BP	4.985	0.731						0.8113
OC	4.961	0.627	0.296					0.8802
Trust	4.910	0.866	0.223	0.466				0.9247
SE	4.891	0.687	0.178	0.696	0.276			0.8058
JS	4.727	0.638	0.261	0.599	0.578	0.369		0.8345
MP	5.124	0.653	0.256	0.571	0.485	0.379	0.566	0.8833

Note: n = 164;

Coefficients of 0.178 is significant at the $p < 0.05$ level, the others are significant at the $p < 0.01$ level.

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 2. In addition, analysis of hypothesized model (as shown in Figure 1) indicates an acceptable model fit for a number of fit indices in Table 3. Chi-square 1.514 (df=2, $p=0.469$) and all other fit indices are within acceptable levels (GFI=0.997; CFI=1.000; AGFI=0.968; AIC=39.514 (saturated model 42)). However, two insignificant paths of hypotheses 3a and 3b need to be deleted from the model. After the deletions, although the model has not a significant improvement in model fit, the final model also yields acceptable model fit indices (Chi-square 2.032 (df=4, $p=0.730$); GFI=0.996; CFI=1.000; AGFI=0.978; AIC=36.032 (saturated model 42)). The comparison of Good-of Fit indices of two models and a summary of the regression coefficients for each path are presented in Table 3.

4.3 The results

In our final model, the results indicate a good model fit with ten paths significant at $p \leq 0.001$ and one path significant at $p \leq 0.05$. The insignificant Chi-square for the model of 2.032 (df=4, $p=0.730$) and GFI=0.996 indicate good overall fit. The comparative fit measure (CFI=1.000) and parsimony measures (AGFI=0.978; AIC=36.032 (saturated model 42)) all indicate good model fit.

The final model indicates attitudes mediate the relationship between budgetary participation and managers' outcome criteria. However, self-efficacy improves managerial performance and job satisfaction (hypotheses 2a and 2b) are not supported in this study. That is, the indirect effects of self-efficacy between budgetary participation and managerial outcome criteria are not significant, while the attitudinal effects of budgetary participation which are through organizational commitment and trust in superior are supported.

In addition, the relationship between mediator and outcome variables are also supported. Self-efficacy is positively associated with trust in superior (hypothesis 7a) and organizational commitment (hypothesis 7b). Higher level of trust in superior enhances managers' affective organizational commitment (hypothesis 8). Managers' job satisfaction significantly influences managerial performance (hypothesis 9). The final results and paths between latent variables are shown in Figure 2.

TABLE 3. Hypothesized and Final model: Structural Parameter Estimates

Path	Hypothesis	Hypothesized Model			Final Model		
		Coeff.	Standard error	t-value	Coeff.	Standard error	t-value
BP→SE	H ₁	0.167	0.073	2.300	0.167	0.073	2.300
SE→JS	H _{2a}	-0.0528	0.073	-0.716			
SE→MP	H _{2b}	0.006	0.078	0.079			
SE→ Trust	H _{7a}	0.307	0.095	3.231	0.307	0.095	3.231
SE → OC	H _{7b}	0.544	0.049	11.179	0.544	0.049	11.179
BP→Trust	H ₃	0.213	0.089	2.385	0.213	0.089	2.385
Trust→JS	H _{4a}	0.278	0.048	5.843	0.281	0.048	5.905
Trust→MP	H _{4b}	0.133	0.056	2.388	0.133	0.055	2.387
Trust→OC	H ₈	0.198	0.039	5.064	0.198	0.039	5.064
BP→OC	H ₅	0.110	0.045	2.449	0.110	0.045	2.449
OC→JS	H _{6a}	0.471	0.088	5.362	0.429	0.066	6.540
OC→MP	H _{6b}	0.335	0.101	3.304	0.340	0.078	4.341
JS→MP	H ₉	0.271	0.083	3.250	0.271	0.083	3.251
Goodness-of-fit statistics:		$\chi^2=1.514$, df=2, $p=0.469$			$\chi^2=2.032$, df=4, $p=0.730$		
		GFI=0.997			GFI=0.996		
		CFI= 1.000			CFI= 1.000		

AGFI= 0.968	AGFI= 0.978
RMSR=0.008	RMSR=0.009
AIC= 39.514	AIC= 36.032
(saturated model= 42.000)	(saturated model= 42.000)

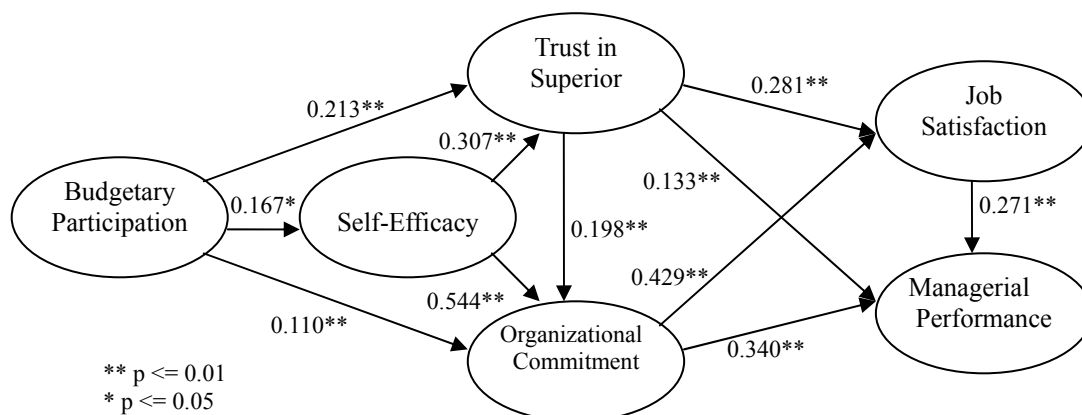


Figure 2. A Path Diagram of Structural Relationships: Final Model

5. 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. 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, this study indicates that managers' self-efficacy plays a critical role to influence work attitudes but not to managerial performance and job satisfaction. However, the results suggest that managers' self-efficacy improves outcome criteria through the attitudes. We conclude that participation in budgetary decision making has both direct and indirect effects on trust in superior and organizational commitment, in turn, improving their performance and satisfaction. 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's, 1977) and AET (Weiss & Cropanzano, 1996).

Some future research directions are suggested. Though participation in budget-setting is regarded as a critical mechanism in management accounting researches, other independent variables related to budgeting system such as budget emphasis could play different role. In addition, the findings are subject to several

limitations. Due to the empirical data being drawn from Taiwan Security Exchange, the results might not be generalized to other countries. In addition, the survey approach also has limitations, such as the self-rating measure of managerial performance and job satisfaction. Despite these limitations, the study provides the implication for budgeting system design and introduces AET and social cognitive theory which was not yet employed to investigate the relationships between budgetary participation and managerial outcomes in management accounting researches.

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Appendix

Survey instruments

Budget 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 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.