

## **The Mediating Effect of Performance Measures Used in Budget Participation and Managerial Performance Relationship**

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### **ABSTRACT**

*In most organization, different performance measures are employed to assess different aspects of managers performance. Some of the measures have not been developed and some of them have been developed in a very selective way and some presented but not used or only partly used. Hence, this study examined the effect of performance measures used in budget participation and managerial performance relationship in Malaysian local authorities. A structural equation modeling was utilised to examine the direct and indirect effects of budget participation on managerial performance through path model analysis. The finding from the research shows that budget participation influence managerial performance via the mediating variable of the use of performance measures. This research survey was conducted only in Malaysian local authorities. Thus, result may not be generalized to other public organizations. The theoretical contribution of this study is to extent the earlier literatures by addressing effect in which, budget participation, the use of the performance measures can be inter-related in providing explanations of managerial performance. The practical contribution for this study is that its finding can have practical relevance in the current management setting in Malaysian government organization. The results from the present study also provide insights on the role of budget participation and the use of*

*performance measures as management tool by local authorities' managers in evaluating their performance.*

**Keywords:** *The Use of Performance Measures, Budget Participation, Structural Equation Modeling, Managerial Performance, Path Model Analysis*

## INTRODUCTION

In most organization, different performance measures are employed to assess different aspects of managers performance. In this regard, many indicators have been used to measure performance which requires a measure of public programme from four main aspects: inputs (cost), output (quantity and quality of goods and services produced), efficiency (unit cost to produce outputs), service quality (measure of service such as timeliness, accessibility, courtesy, accuracy, and satisfaction), and outcomes (progress in achieving programme objectives) (McGill, 2001; Wang, 1999). In other words, the outcomes or service quality associated with a government programme cannot be inferred just by reporting its outputs. Accordingly, one must monitor the entire impact based chain in order to understand and effectively manage government programmes. Therefore, in the Malaysian public organization context, the present study stressed on the usefulness of performance measures used for setting programme priorities and allocating budget resources, adopting new programme approaches or changing work processes, coordinating programme efforts with other internal or external organizations, refining programme performance measures, setting new or revising existing performance goals, setting individual job expectations for subordinates and rewarding subordinate managers (Cavalluzo & Ittner, 2004).

The problems related to the utilization of performance measures in public organization can be associated to the following causes. Some of the measures have not been developed and some of them have been developed in a very selective way and some presented but not used or only partly used (Sole & Schiuma, 2010). These show that the concept of the use of performance measures has not to be considered as based on a single event, but rather on a process. Therefore, if the goal is to encourage and promote the development of performance measurement system in public organisations, it is necessary to understand how to

manage the process of using performance measures. Providing detailed information on development and programme implementation, will assist public organization enhance their performance. Without detailed information, there is little to guide organization to implementation the government programme. Increased in-depth understanding of government organization performance measurement systems and use of performance measures could provide guidance for government to plan and develop new government programme in the future (Epstein, 1988).

On the other hand, the importance of managers' budget participation as a means of improving performance has been studied extensively in the behavioural accounting literature (e.g., Brownell, 1981, 1982a; Brownell & McInnes 1986; Chenhall & Brownell 1988; Mia 1993; Kren 1992; Magner et al. 1996; Nouri & Parker 1998). Most organizations preferred to use budget as a management control tool for coordinating the allocation of resources, managing and controlling their operations and evaluating performance (Firsher et al., 2000). Acceptance of a budget would be enhanced, if individuals participate in setting of the budget (Drury, 2000). Therefore, participation in budget setting process is very important element to gather the information, which in turn to enhance the government service performance to become more efficiently and effectively. This is because greater staff involvement and information sharing that characterises higher budget participation (Parker & Kyj, 2006) allows for information to be provided that reduces role ambiguity, which consequently makes a budget more relevant (Chenhall & Brownell, 1988).

Subsequently, many issues of budget participation in the budget setting process had occupied much attention of researchers in management accounting, perhaps to an extent greater than for any other budget-related variable (Merchant, 1981). The findings from this line of research have been very fruitful in the area of innovation, value-attainment, cognitive, motivation, information and consequences of budget participation (Brownell, 1981; Frucot & Shearon, 1991; Kren, 1992; Chow et al., 1999; Chong & Chong, 2005; Murwaningsari, 2008; Eker, 2009; Leach-Lo'pez, 2009). To date, a little study has examined the performance roles of budget participation on managerial performance. In this light, this study explicitly examines the performance role of budget participation on managerial performance through path model analysis.

The performance role of budget participation will enhance the use of performance measures; and lead to improve managerial performance. Tsui (2001) argued that the budget participation also influences the extent of performance measures used in organizations. Scott and Tiessen (1999), suggested that to make performance measures to be useful, the manager must understand the way to measure the tasks and how the measures information relate to the task at hand. This understanding can be developed at an initial stage when the manager is actively involved in budget setting. Managers who are active in preparing budgets would understand how the budget targets are derived and be more willing to accept a management evaluation style that emphasises on meeting the budget. This would lead to more acceptance of financial information in decision-making (Taylor, et al., 2008).

Therefore, our study used a structural equation modeling technique to estimate the parameters of every construct variables includes the use of performance measures in order to explain the hypothesized structural model. The remainder of the paper is structured as follows. In next section, the research objective and the hypothesized structural model underlying the study is developed, which linked the interaction between the performance role of budget participation on managerial performance. Subsequent section presents path analysis, research method, results, hypotheses testing and conclusions.

## **RESEARCH OBJECTIVE**

The objective of this study is to examine the mediating effect of performance measures used in budget participation and managerial performance relationship in Malaysian local authorities. This study also attempt to examine and measure whether the use of performance measures (PMs) have a fully mediating effects or partial mediating effect as well as direct effects on their managerial performance.

## **HYPOTHESIZED STRUCTURAL MODEL**

### ***Hypothesized Structural Model***

The budget participation and managerial performance relationship will be explained through path model analysis. Path model analysis

captures both the direct and indirect effects of budget participation on performance by including budget participation as the exogenous variable, managerial performance as the endogenous variable, and the use of performance measures as mediating variable as shown in Figure 1.

### **Path A**

Path A denoted a direct relationship between budget participation and the use of performance measures. Taylor, et al. (2008) revealed that a high level of budget participation by managers increases the use of performance measures. Based on the path A, the following hypothesis is put forward:

H1. Budget participation positively influences the use of performance measures.

### **Path B**

Path B embodied a direct relationship between the use of performance measures and managerial performance. Lapsley and Wright (2004) examined the dissemination and adoption of accounting management practice and found that the most successful accounting technique is key performance indicator (KPI). KPI provided feedback to management and stakeholders about the meeting of expectations and also facilitated decision making process (Hendri, 2006). In respect to this point, result from performance measures was considered in the planning process to help improve future managerial performance (Mellor, 2001). The study by Taylor, et al. (2008) indicated that the hypothesized model was positive effect of the use of performance measures on managerial performance is accepted. Based on the path B, the following hypothesis is implied:

H2. The use of performance measures positively influences managerial performance.

### **Path C**

Path C corresponds to a direct relationship between budget participation and managerial performance. Derfuss (2009) found that budget participation and managerial performance are positive and significant linked. Murwaningsari (2008) indicates that budget participation is positively influence managerial performance. Path C represents the regression between the budget participation and managerial

performance with regard to mediating effect. It represents the residual direct effect that flow through the use of performance measures. In Leach-lo'pez (2008) study, found that budget participation and job performance have a direct relationship. Based on the review of literature for path C, the following hypothesis is recommended:

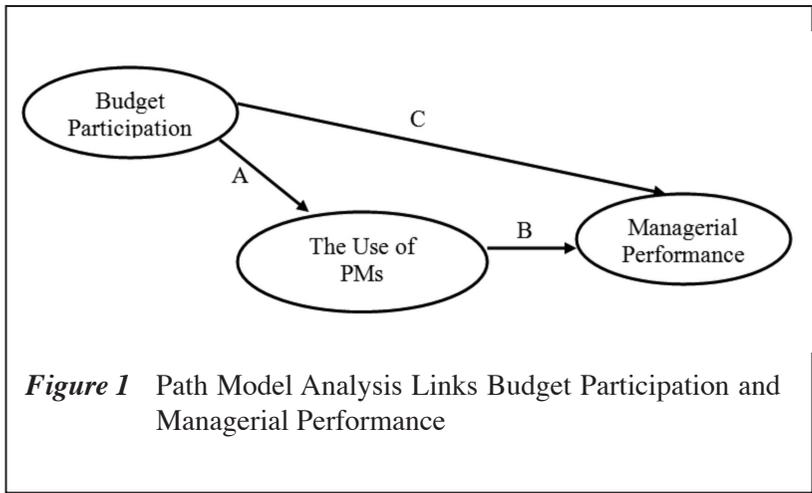
H3. Budget participation positively influences managerial performance.

The paths below involved intervening variables:

**PATH: (A+B)**

Taylor, et al. (2008) found the indirect effect between the budget participation and managerial performance relationship after controlling for the mediating variable, the use of performance measures. The finding from Taylor, et al. (2008) study, indicated that the use of performance measures has a significant mediating effect on public servants. This finding revealed that, those having higher experience in budget setting process will make greater use of performance measures in their work place. In turn, an increased use of performance measures bring about higher self-rated manager performance across the range of managerial functions. Based on the review of literature on Path A and B, the following hypothesis is advocated:

H4. The greater the budget participation, the higher is their use of performance measures which, in turn, leads to higher managerial performance.



**Figure 1** Path Model Analysis Links Budget Participation and Managerial Performance

## **METHOD**

### ***Sample***

There are 99 local authorities in Peninsular Malaysia which include 8 city councils, 34 municipal councils, and 57 district councils having a total of 792 head of departments. A proportionate stratified random sample consisting of 260 head of departments were chosen (Krejcie & Morgan, 1970). The number of elements chosen from each strata is proportionate to the size of a particular strata relative to the overall sample size. The data were collected through a questionnaire survey with a total of 131 head of departments in Malaysian local authorities, fully participated in the survey which accounted for 50.4% of the selected sample. A structural equation modeling technique was utilised to examine the direct, and indirect effects of budgetary participation on managerial performance through a path analysis. The mediating effect of the use of performance measures information also estimate by structural equation modeling technique.

### ***Measurement of Variables***

A survey technique was employed to collect the data for this study. The data for this study were collected through a survey technique, using an adapted instrument from the previous study to measure variables or constructs specified within the suggested framework: budget participation, the use of performance measures, and managerial performance. The survey instrument includes, budget participation by Milani's (1975), the use of performance measures by Cavalluzo and Ittner (2004), and managerial performance by Mahoney, et al. (1965).

## **RESULTS**

### ***Respondent Profile***

After data screening, one outlier was eliminated, leaving the final data set of 130 respondents (N=130). The respondents in the present study comprises of 53 % (n=69) male and 47% (n=61) female. In term of age, there were more than 60% (n=80) of respondents were

between 30 to 49 years old. About 25% (n=33) of respondents age between 20 to 29, and only 13% (n=17) age 50 and above. It is also observed that most of the respondents have been employed at the local authorities for more than 5 years are 64.7% (n=87). Therefore, they can be considered to be familiar with the goals of their organization. This study includes all of head departments which involved in budget setting process. Out of 130 respondents, there were about 35% of respondents that have less than 5 years in budget experience, 29% have 6 to ten years in budget experience and 36% of respondents have more than 10 years experience in budgeting. Majority of respondents, 42% had a degree, only 10% with post graduate, 32% with diploma and 17% with certificate. Majority of the respondents in this study covered 62% (n=80) from district councils, 11% (n=14) from city councils, 28% (n=36) from municipal councils.

### **HYPOTHESES TESTING**

To test our hypothesized theoretical model, we used a software Analysis of Moment Structures AMOS version 16.0. We adopted an approach recommended by Hair et al., (2006), which involved structural equation modeling, through six stages decision process, which involved the defining of individual constructs, developing the overall measurement model, designing a study to produce empirical results, assessing the measurement model validity, specifying the structural model and assessing structural model validity. In the present study, the construct variables are budgetary participation, the use of performance measures, and managerial performance. According to Anderson and Gerbing (1988), to analyse the data, every item in exogenous variables and endogenous variables in measurement model was restricted to load on their priory specified factor and the factors were allowed to correlate to each other. Then, the measurement model was evaluated through assessing overall model fit indices to identify the degree to which the specified indicators represent the hypothesized constructs in the confirmatory factor analysis (CFA). Finally, in the measures of validation in measurement constructs involved calculation of construct reliability and average variance extracted (AVE) for each item to determine the internal consistency of measurement scale, using Fornell and Larker's formula (1981). The finalised measurement model then used for further analysis of hypotheses testing in the final structural model.

To test our hypotheses, we rely on standardised parameter estimates for our theoretical model (refer Figure 2). The results for testing direct effects of hypotheses H1 to H3 and the results for H4 for testing indirect effects are summarized in Table 1 and 2 respectively. In our final model, in the re-specified model shown in Figure 2, having deleted 7 items in the latent construct which include 5 item in the performance measures used construct, 2 items in managerial performance construct and budget participation construct remains with six items. The results indicate a good model fit with three paths (path A, B, and C) are significant at  $p < 0.01$ . The insignificant Chi-square for the model of 1.55 ( $p = 0.000$ ), TLI=0.909 indicate the model is performing well (Sharma et al, 2005; Mc Donald & Mash, 1990), RMSEA=0.065 shows a good fit (Byrne, 2001) and CFI=0.917, is presently recognised as indicative of good fit (Bentler, 1990).

### ***Direct Effect***

The standardised parameter estimate between budget participation and the use of performance measures was positive and statistically significant (path coefficient = 0.437,  $p < 0.05$ ) indicating that hypothesis 1 was supported. This finding consistent with Taylor, et al. (2008) which indicates that a high level of budget participation by managers increases their use of performance measures. Consistent with our theoretical expectations, the standardised parameter estimate between the use of performance measures and managerial performance was positive and statistically significant (path coefficient = 0.602,  $p < 0.05$ ). Thus, H2 suggested that the use of performance measures is positively influencing the managerial performance is asserted. This finding aligned with Scott and Tiessen (1999) which reveals that performance measures can form important part of the information required to support decision, and help subordinates to structure staff as well as assess progress. Furthermore, this performance measures is intended to improve government performance through the improvement of performance-based decision-making (Cavalluzo & Ittner, 2004).

Our third hypothesis H3, expected that budget participation has a positive influence on the managerial performance. After the relationship between budget participation and managerial performance was controlled by mediator, finding indicates that budget participation has insignificantly influence the managerial performance (Table 1),

thus, hypothesis 3 is rejected. This insignificant result shows that the fully mediating effects of the use of performance measures occurs in the budget participation and managerial performance relationship. This finding was consistent with several previous studies (for examples; Milani, 1975; Kenis, 1979; Chenhall & Brownell, 1988; Wentzel 2002).

**Table 1**

*Standardized Regression Weight*

			<b>Path Coefficient</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>
PMs	<---	BP	.437	.084	5.215	***
MP	<---	BP	-.179	.112	-1.603	.109
MP	<---	PMs	.602	.165	3.641	***

Notes: \*\*\* significant at the 0.01 level; \*\* significant at the 0.05 level; \* significant at the 0.1 level.

**Table 2**

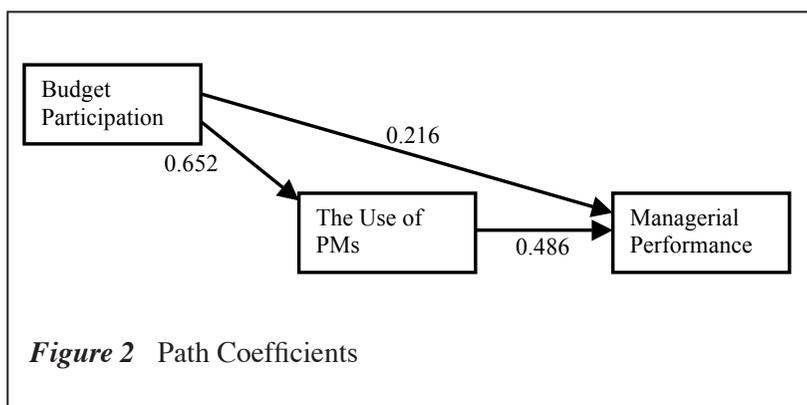
*Direct Effect of Variables Interaction*

<b>Exogenous</b>	<b>Endogenous</b>	<b>Path</b>	<b>Factor Loading</b>	<b>Hypotheses Testing</b>
BP	PMs	A	0.652	Asserted
PMs	MP	B	0.486	Asserted
BP	MP	C	0.216	Rejected

***Indirect Effect of Budget Participation on Managerial Performance***

The present study also investigates and measures the linkage of budget participation and managerial performance relationship through a

mediating variable, namely as the use of performance measures to enhance managerial performance in the Malaysian local authorities. The results of this study, indicates that budget participation has indirectly positive influence on managerial performance. To test for hypotheses H4, a path analysis technique (Alwin & Hauser, 1975) was used. The indirect effects of budget participation on managerial performance were calculated by combination Path A and Path B (refer to Figure 2).



The fourth hypothesis, H4 suggests, the greater the budget participation, the higher is their use of performance measures, which, in turn, leads to higher managerial performance. The standardised parameter estimate between budget participation and the use of performance measures was positive and statistically significant (path coefficient = 0.437,  $p < 0.05$ ) and the standardised parameter estimate between the use of performance measures and managerial performance was positive and statistically significant (path coefficient = 0.602,  $p < 0.05$ ). Thus, H4 is supported. This finding is aligned with Taylor, et al. (2008) study, which indicates that use of performance measures has a significant intervening effect on public servants. This finding revealed that those who have higher experience in budget setting process will make greater use of performance measures in their work place. The increased of use of performance measures bring about higher self-rated manager performance across the range of managerial functions.

**Table 3**

*Indirect Effect Of Variables Interaction*

<b>Exogenous</b>	<b>Mediated</b>	<b>Endogenous</b>	<b>Path</b>	<b>Factor Loading</b>	<b>Mediating Effect</b>
BP	PMs	MP	BP PMU MP 0.216+0.317	0.533	Fully Mediating Effect

The finding of this study revealed the performance roles of budget participation enhance the managerial performance. Eventually, the result of this empirical study was consistent with the previous studies (e.g., Taylor, et al., 2008, Sprinkle, 2003, Tsui, 2001; Scott & Tiessen, 1999).

**CONCLUSION**

This paper measured the performance role of budget participation on managerial performance in Malaysian local authorities. Path model analysis provides an empirical evidence to explain the direct and indirect effect of budget participation on managerial performance. The use of performance measures was significantly interact as the intervening between budget participation and managerial performance relationship. The theoretical contribution of this study is to extent the earlier literature by addressing effect in which, budget participation and the use of the performance measures can be inter-related in providing explanations of managerial performance. In the methodological perspective, the validated instruments can be used in future research. The practical contribution for this study is that its finding can have practical relevance in the current management setting in Malaysian government organization.

The use of a self-reported questionnaire to collect data for all constructs is a limitation to the study. The use of respondents' perceptions to measure the constructs may be subjected to the respondent bias. In future research this study can be replicated with a larger sample size, which can represent the population of head departments in local authorities in the whole country. This replication will then enable the

findings to be generalized to the whole of Malaysian local authorities included Sabah and Sarawak. Furthermore, finding of such replication study can also strengthen the validation of the instruments used in the present research.

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