

Impact of Participation in Budgeting and Information Asymmetry on Managerial Performance in the Macau Service Sector

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Abstract

Over several decades management accounting scholars have been studying the issue of how budgetary participation affects organisational behaviour such as managerial performance. However, the results of these studies have not always been consistent. It can be concluded that no simple relationship exists between budgetary participation and managerial performance. The current study reconciles the reasons for these inconsistencies and identifies a moderating factor that might affect the relationship between budgetary participation and managerial performance. By using the contingency approach, information asymmetry factor has been taken into consideration as a moderator that might affect the relationship. The results explain the relationship in terms of managers possessing more information and participating in the budgeting process were reported to be associated with improved performance. In contrast, participation by managers exhibiting less information flow was associated with diminished performance.

Keywords

Budgetary Participation, Managerial Performance, Moderating Factors, Contingency Approach.

Introduction

One measurement of managerial performance is the identification of managerial performance dimensions in a periodic evaluation. Such dimensions, in theory, represent activities in which all managers engage to varying degrees, regardless of their specific job or position in a given organisation. The performance dimensions and their descriptions should possess adequate validity for the daily work of all managers (Heneman 1974). Many studies have focused on the relationship between budgetary activities and managerial performance, and their findings have been quite inconsistent. Many have found a positive relationship (Steers 1976; Ivancevich 1976; Kenis 1979; Galbraith 1977; Mia 1989; Merchant 1981), whereas other researchers did not find any significant relationship between budgetary activities and managerial performance (Brownell and Hirst 1986). Later studies by Lindquist (1995), and Fisher, et. al. (2000) found that a failure by companies to encourage subordinates to participate in budgetary activities produced significant detrimental effects on the performance of these employees. These differing findings have led researchers to believe that there is no simple relationship between budgetary participation and managerial performance, and that it is superficial to conclude that the two variables have, or do not have, a straightforward significant effect on each other. It is apparent that other factors must play a moderating role—intervening and producing antecedent effects on the bivariate relationship between the independent and dependent variables (Shields and Shields 1998).

Budgetary Participation

Antecedent effects

As noted above, the relationship between budgetary participation and managerial performance is not clear and the results of investigations of the relationship have often been found to be contradictory. As a result, many researchers have reconciled the results by using the contingency (situational) approach. With this approach, researchers are able to conclude that the nature of the relationship in question varies from one

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situation to another. Various external or environmental factors have been described as antecedent effects: Otley (1980) and Merchant (1981) found that the unit size of an organisation affected managers' participation in the budgeting process. They found that larger companies become more diverse, and tend to decentralise and implement an administrative control strategy. Consequently, a larger organisation encourages greater managerial participation. Employees in such organisations were found to have a higher managerial performance than those in smaller firms. The result is not surprising because, in more diversified firms, all levels of managers are likely to receive better information, and involving them in budgeting activities might produce a positive motivational effect during the budgeting process. Environmental uncertainty is another antecedent factor that has been studied by Merchant (1981). Managers were found to be reluctant to participate in any budget activities if they perceived uncertainties in achieving budget goals, but were enthusiastic if they perceived the likelihood of success in this regard. Simon (1990) found that business strategies were a significant factor affecting managerial performance. He classified companies into 'prospectors' and 'defenders'. 'Prospector' companies—those with an emphasis on frequent reporting, less cost control, and the use of uniform control systems—had managers with positive performances. On the other hand, 'defenders'—companies with an emphasis on bonus remuneration based upon the achievement of budget targets—were found to have negative performers among their managers. Other researchers have drawn attention to different antecedent factors which they have identified as having significant impacts on managerial performance. These have included: degree of decentralisation (Gul et al. 1995); national culture (Ueno and Wu 1993); and short-term and long-term goal

orientations (Van der Stede 2000). Figure One indicates the antecedent effects of various variables on the relationship between budgetary participation (BP) and managerial performance (MP).

Intervening factors

There might be no direct relationship between budgetary participation and managerial performance and some other previous studies focus on investigating the intervening factors as having the main impact on their relationship. The term 'intervening effect' is used to describe this because the relationship between the independent variables and consequent variables exists via the intervening variables—such as job-related tensions (Hopwood 1972), attitude, and motivation (Brownell and McInnes 1986). However, Milani (1975) found that there is no direct relationship between participation and performance, and that motivation does not play an intervening role. Figure Two shows there might be a direct relationship between budgetary participation and managerial performance, or that any such relationship exists via an intervening factor.

Moderating factors

Unlike the abovementioned intervening and antecedent factors, there might be potential moderating factors affecting the relationship between budgetary participation and managerial performance. The term 'moderating' is used in the sense that the relationship between the budgetary participation and managerial performance exists, and the selected variable has some effect on this relationship, but this factor might not have a relationship of significance with the independent and dependent variables.

Figure One

The Antecedent Effects of Various Variables on the Relationship between BP and MP

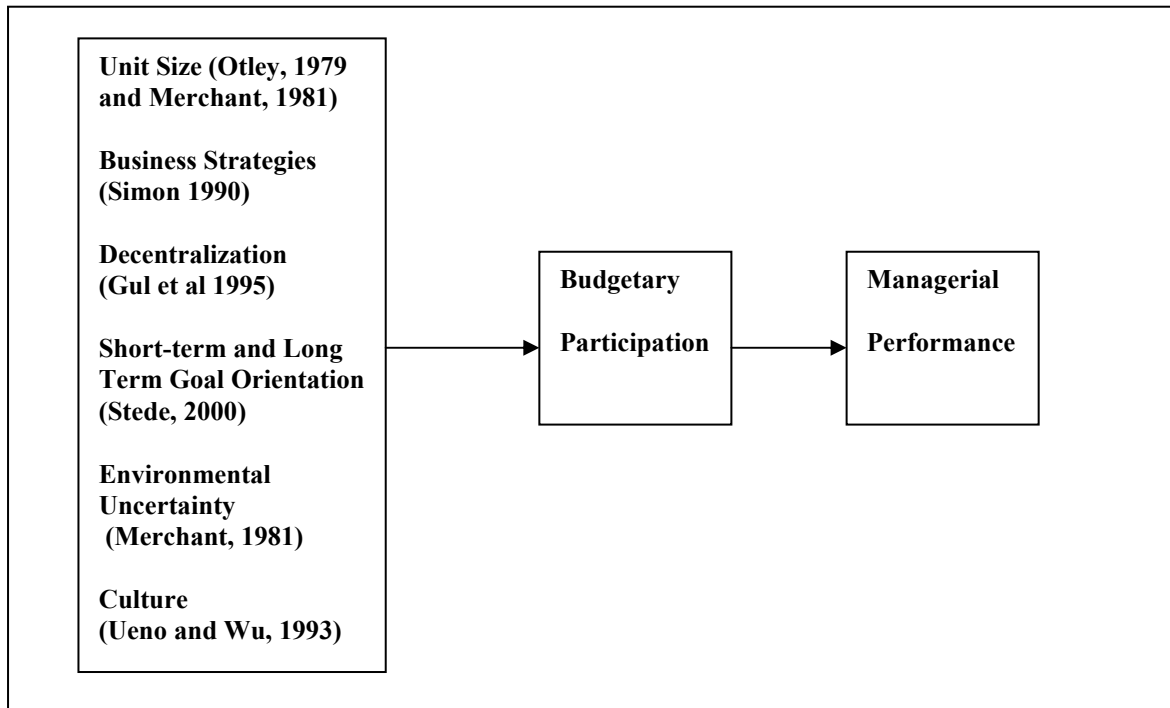
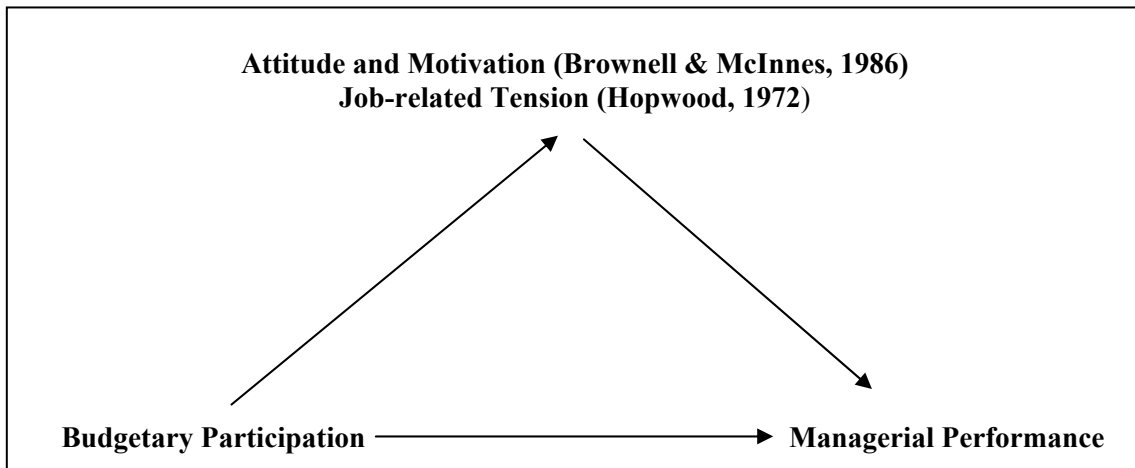


Figure Two

Intervening Effects Between BP And MP Via Intervening Factors



Harrison (1990 and 1992) and Lau and Tan (1998) have investigated the relationship between budgetary participation and managerial performance by using task uncertainty and task difficulty as moderating factors. They found that higher levels of budgetary participation combined with low-

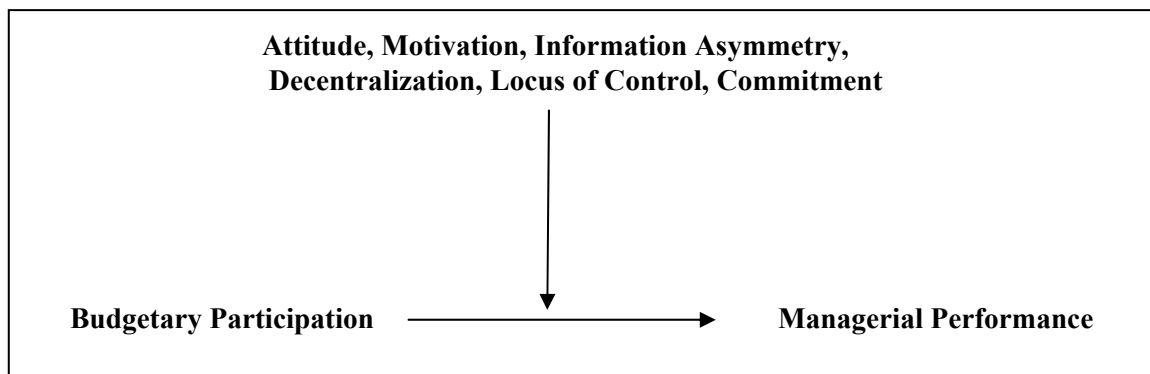
task difficulty gained a higher managerial performance—hence the result indicated a positive moderating effect. In the high-task situations, with higher levels of budgetary participation, the opposite result was obtained. Mia (1989) also found the relationship between the two main variables exists by using

job difficulty and work motivation as moderators. A number of researchers have been using moderators to understand the relationship between budgetary participation and managerial performance, but using different moderators—such as attitudes and motivation (Brownell and McInnes 1986), decentralisation (Gul et al. 1995), budget adequacy and organisational commitment

(Nouri and Parker 1998), functional area (Brownwell 1985) and locus of control (Fruicot and Shearon 1991). Figure Three indicates the moderating effects of different factors that might affect the relationship between budgetary participation and managerial performance.

Figure Three

Moderate Effects of Different Factors that may affect the Relationship between BP and MP



Information asymmetry (IA) as a moderator

Information asymmetry (IA) was selected as a moderator for the current study. IA means that subordinates possess more information to make a budgetary decision than do their superiors (Kren 1993). For example, compared with their superiors, subordinates might possess more important information, or they might understand operations in greater technical detail. They might also have a better understanding of the standard to be achieved for their operations. The essential characteristic of IA is that the information of subordinates must exceed that of their superiors. Studies explaining the relationship between budgetary participation and managerial performance using IA as a moderator are limited. A potential moderating effect of IA and budget emphasis on participation and a dependent variable has been studied by Dunk (1994). Unlike the current study, budgetary 'slack' was selected as a dependent variable in Dunk's study. He discovered that the budgetary participation–slack relationship is contingent upon the factors of IA and budget emphasis. His results

provided evidence to support the hypothesis that high participation will not encourage subordinates to create budgetary 'slack' except in situations involving budget emphasis and low IA. However, in the opposite situation, high participation will result in high budgetary slack only if IA and budget emphasis are high.

Hypotheses formulation

Based upon Dunk's (1994) research, the current study aimed to increase our understanding of the contingent effects of budgetary participation and managerial performance using IA as a moderating factor. As noted above, a problem faced by researchers' bivariate relationships is to reconcile the conflicting results that have appeared in the literature. One way of doing this has been to use a contingency theory approach (Mia 1989; Dunk 1994; Gul et al. 1995). Such an approach has suggested that the effectiveness of budgetary participation might be dependent on the level of information that is available to and possessed by the subordinates. The term 'moderating effect' is used because the IA factor is related neither to

budgetary participation nor managerial performance, but to the relationship between budgetary participation and managerial performance. There might be four situations involving the moderation of the impacts of budgetary participation. Figure Four

summarises the impact of budgetary participation on managerial performance by using IA as a moderating factor under the four contingent situations.

Figure Four
Contingency Frameworks of the Study

	Information Asymmetry		
		<i>Low</i>	<i>High</i>
Budgetary Participation	<i>High</i>	Lower Performance (<i>H₃</i>)	Higher Performance (<i>H₁</i>)
	<i>Low</i>	Higher Performance (<i>H₄</i>)	Lower Performance (<i>H₂</i>)

Hence, the first hypothesis can be stated in the null form as follows:

H₀: There is no significant relationship among the IA, budgetary participation, and managerial performance factors.

In the first situation, with a high degree of information asymmetry, subordinates play a significant role in the decision-making. Participating in the planning and control process requires managers' knowledge and judgment. By doing so, subordinates might be motivated to perform better. These information mechanisms (that is, a high level of information asymmetry and budgetary participation) are interdependent and might interact to form an overall impact on managerial performance. Hence, managers operating in such environments might not have all the information to perform the job; they need to obtain and understand additional information in order to perform their jobs properly. Participation might serve as a mechanism to help managers to obtain and process such information. By doing so, they have a higher chance of successful performance. This argument suggests the following hypothesis:

H₁: The greater the level of information asymmetry, the greater the positive effect that budgetary

participation has on managerial performance.

In the second situation, subordinates have more technical knowledge, thus understanding more about their work than their superiors. However, the superiors might limit the subordinate's opportunities to participate in the budgeting process. Subordinates thus avoid making budget decision due to ignorance. Such an action might discourage their involvement and commitment to the organisational goals, and thus cause a negative impact on their work performance. Hence, the second hypothesis can be presented as follows:

H₂: Lower level of budgetary participation in a higher information asymmetry organisation will have a significant negative effect on managerial performance.

In the third situation, subordinates act as order-takers with the decisions being made by managers centrally. Any attempts to solicit higher participation in the budgetary process are unlikely to increase managerial performance. The organisational climate does not facilitate possession of information and solicitation of ideas to make a decision. Subordinates might perform better when they follow predetermined rules, policies, and standards of an organisation. Working under such a regimented environment, subordinates might feel that many decisions need no

participation because they only replicate their job with obvious solutions. Hence, the third hypothesis is stated as follows:

H₃: The lower the level of information asymmetry, the greater the negative effect that budgetary participation has on managerial performance.

In the final situation, subordinates are given less opportunities to participate in decision-making, and there is little flow of information. Subordinates might feel great uncertainty in achieving a preset budgetary goal because they possess a low level of information and knowledge. Their superiors might shift responsibility and blame onto them when they fail to accomplish their work successfully. They do not have sufficient information, and lack instructions to follow. Therefore, participation is unlikely to motivate them to increase their performance. Soliciting high participation might have a negative impact on managerial performance in this situation. Therefore, the fourth hypothesis is formulated as follows:

H₄: Lower level of budgetary participation in a lower information asymmetry organisation will have a significant positive effect on managerial performance.

The Research Method

The research was carried out in three stages—(i) participant-identification stage; (ii) pretest stage; and (iii) data-collection stage.

Participant-identification

Hopwood (1972) and Otley (1980) used a single organisation for their study. The result for a single organisation might be affected by the firm's own culture or characteristics. The use of a single organisation can also eliminate the variables of different culture, size, and characteristics affecting the research findings. On the other hand, Chong (1996) and Abernethy and Brownell (1997) studied the results of the budgeting issues using a cross-section of manufacturing companies. In the

current study, in order to generalise the results, random sampling across hotels in Macau was undertaken with a view to increasing the reliability of the results (Kerling and Peddhazur 1973).

The sampling frame was selected according to three criteria. First, only large, similarly ranked hotels of corresponding quality were included. Hence, hotels ranked by the Macau Tourism Association with 3 to 5 stars were chosen (with more stars indicating that a better quality of service was available). Second, a similar organisational structure and setting in terms of size, degree of diversity, and degree of centralisation was required in order to ensure that managerial behaviour was not affected by these factors. Therefore, the sampling frame of this study contained 19 hotels with at least 80 rooms, and the number of people employed by each of hotel was between 80 and 600. Only the middle and top managers in the selected hotels were selected. Furthermore, there were five additional conditions taken into consideration when randomly selecting the participants for the interview:

- each participant had budget responsibility in a hotel;
- each participant had been in his or her current position for at least two years, to ensure that the participants had substantial experience of working with the hotel's budget;
- each participant held a management position and was responsible for preparing or implementing the budget for his or her department;
- no manager who had participated in the pilot test could participate in completing the questionnaire; and
- managers answered the questionnaire once only.

Pre-test

As this research could not have been effectively conducted without support from the top management of each sampled hotel, a written request was sent to ask for on-site interviews with lower-level managers. To minimise potential difficulties and problems, the draft questionnaire was subjected to an in-

depth pilot-study of three managers (who were not included in the final sample) for the purposes of the pretest. The pretest stage encouraged the participants to provide their comments on any items that were not clear to them. Based upon the pretest, some items were reworded in order to avoid any confusion. By doing so, the interpretation of most of the items in the questionnaire was consistent with the way that the researcher wanted them to be interpreted.

Data collection

Mail questionnaires in research of this type can generate a low response rate. To avoid such a problem, an on-site personally administered survey was adopted for data collection. The interviewers brought two letters to the interviewees. One letter was from the researcher to explain the purpose of the study and to solicit their participation. The other letter was from the top management of the hotels permitting employees to participate in the study. They were informed that their participation was voluntary. The questionnaire also contained a statement to assure them that all responses would be treated with absolute confidentiality and that the data could be used only for the current study.

Profile of respondents

Two hundred personal interviews were conducted in the 23 selected Macau hotels. From these interviews, 165 usable questionnaires were collected. This represented more than 80% of the total interviews conducted, and such a response rate is considered to be good (Cohen and Manion 1994). The respondents, on average, had held their current positions for 3.15 years, and had been in their current organisations for 4.25 years. Their length of service in the hotels was not long—a situation that can be attributed to the abundance of job opportunities in Macau. In addition, there have been many new hotels established in the last few years. Therefore, the respondents can be expected to have a relatively high mobility in the hotel industry.

Of the respondents, 165 were male (78%). This is consistent with the fact that senior positions in the hotel industry as a whole are

still dominated by male workers. In relation to age, 4% of the respondents were in their twenties, 45% were in their thirties, 35% were in their forties, and 16% were in their fifties. Table One shows the respondent profile in terms of age and gender. An ANOVA test was employed to establish whether there were significant differences between age and gender groups in terms of selected independent and dependent variables.

Measurement of variables

The questionnaire contained measurement for three variables—(i) budgetary participation; (ii) information asymmetry; and (iii) managerial performance. Since three measuring instruments have been adopted frequently in many studies in industries other than the service sector, it was necessary to check whether the instruments can be applied in the service sector by checking the three measuring scales to ascertain whether they were unidimensional—that is, a single factor of each variable was measured using the factor analysis technique (using varimax rotations). Table Two presents the descriptive statistics for the three instruments.

Budgetary participation

Miliani's participation instrument was adopted to measure the participants' perceived levels of participation. Since this instrument has been widely used in many studies in the accounting literature (Brownell 1982; Gul et al. 1995; Nouri and Parker 1998; Hirst and Yetton 1999), it was known to have reliability. Respondents were asked to rate on a 7-point Likert-type scale under the six participation items. The overall level of participation was measured by the sum of the six items. A check of internal reliabilities using the Cronbach alpha coefficient yielded a score of 0.85. A factor analysis technique was used to check the scores and yielded one eigenvalue greater than unity. The factor accounted for 82% of the variance. Hence, this suggested that one factor was extracted with a high percentage of explanation of the underlying variable. The KMO measurement of sampling adequacy was 72.3%.

Table One
Respondents' Profile

	Under Twenties	Twenties	Thirties	Forties	Fifties	Total
Male	0	6	60	40	23	129
Female	0	1	15	16	4	36
Total	0	7	75	56	27	165

Table Two
Descriptive Statistics for the Three Instruments

	Mean	S.D.	Actual range	Theoretical range	Cronbach Alpha	KMO	Factor (% of variance account for)
Budgetary Participation	5.8	0.64	0.65- 5.80	6-42	0.853	0.723	82
Managerial Performance	4.23	1.145	2.02- 6.11	8-56	0.881	0.670	75
Informational Asymmetry	3.98	1.112	1.76- 5.75	6-42	0.760	0.622	65

Informational asymmetry

Since there is limited research to measure this variable, Chow suggested the use of six items for such measurement (see Chow 1983 and Chow et al. 1988), and this was later adopted by Dunk (1994) with respect to the budgeting issue. The six items were presented in a 7-point Likert-type scale. The Cronbach alpha was used to check the internal reliabilities of this measurement and obtained a result of 0.76, which further confirmed the reliability of using such an instrument. A factor analysis of the scores yielded one eigenvalue greater than unity; hence, one factor was extracted suggesting that the scale was unidimensional. The factor accounted for 65% of the explanation of the variance. The KMO measurement of the sample adequacy was 62%.

Managerial performance

Managerial performance was measured using a self-evaluation questionnaire developed by Mahoney et al. (1963). Respondents were asked to rate, on a 7-point Likert-type scale, their own perceived performance on the eight sub-dimensions of performance—(i) planning; (ii) investigating; (iii) coordinating; (iv) evaluating; (v) supervising; (vi) staffing; (vii) negotiating; and (viii) representing. The internal reliabilities of the measurement of this variable using Cronbach Alpha reached 0.88. This can be therefore be considered a good instrument to measure managerial performance. Factor analysis was used to reveal whether all the items in the instrument were loaded on a single factor. One eigenvalue greater than one was found, which means that the scale was unidimensional and accounted for 75% of the variation in the underlying variable. The sample adequacy was 67% of KMO measurement.

Results

Table Three presents the correlation matrix for the three variables utilised in the current study. The relationships among the three variables were not very clear because a level of significance of 0.01 could be detected between

only the budgetary participation and information asymmetry variables. Hence, H_0 cannot be partially rejected for these two variables. Conversely, H_0 cannot be accepted for the relationship between IA and managerial performance.

Table Three
Correlation Matrix

Variables	Y	X1	X2
<i>Managerial Performance</i>	1.00		
<i>Budgetary Participation</i>	0.23	1.00	
<i>Information Asymmetry</i>	-0.56*	0.42	1.00
* $P < 0.01$			

Since the relationship was not clear, it was necessary to analyse the three variables further by using the regression analysis technique to retest H_0 . As there was no significant multicollinearity among the variables, the regression analysis technique can be used to investigate the relationships among the three variables in greater detail. Hence, the regression analysis technique was also employed to test hypotheses H_1 to H_4 , (Schoonhoven 1981). It was considered to be appropriate to use such an analysis because it takes into consideration multiple independent variables and a single dependent variable in a single predictive model—that is, the interactions of the independent variables with the dependent variable can be captured in the multiple regression. Hypotheses H_1 to H_4 were tested using the following equation:

$$Y = a + b_1X_1 + b_2X_2 + b_3 X_1X_2 + e \dots (1)$$

in which:

Y = managerial performance; X_1 = budgetary participation; X_2 = information asymmetry; and $X_1 X_2$ = interaction term.

To allow a judgment on the acceptance or rejection of H_1 to H_4 , the coefficient b_3 had to be tested. If b_3 reaches a significant level, it indicates a significant interaction between

budgetary participation and information asymmetry affecting managerial performance. The equation also gives an indication of the hypothesised direction. However, a further analysis was required to be carried out to understand more about the nature and form of the interaction relationship. Hence, a partial derivative could be graphed.

The result, using the regression model shown in Table Four, revealed that there was no significant relationship between budgetary participation and managerial performance alone without considering the moderator ($p = n.s.$). The relationship between information asymmetry and managerial performance was found to be significant ($p < 0.0231$). These results encouraged the studies of the interaction effects of how the independent variables affect the dependent variable. The prediction model in equation 1 explained 45.46% (adjusted $R^2 = 24.12$) of the variance ($F = 5.48, P < 0.0428$). Therefore, these findings indicate that budgetary participation and information asymmetry interact at a significant level to affect managerial performance positively. Hence, the greater the level of information asymmetry, the greater the positive effect that budgetary participation has on the end variable (that is, managerial performance). In other words, failing to encourage participation

causes a negative effect on managerial performance. As a result, H_1 and H_2 were accepted in the higher information asymmetry situations.

In the opposite situation, it also means that with a lower level of information asymmetry, a negative relationship between participation and managerial performance was found. Hence, higher participation in a lower information asymmetry organisation creates

negative effects on managerial performance. Consequently, H_3 cannot be rejected. On the other hand, it is better not to solicit budgetary participation in the situation of a lower information asymmetry organisation—otherwise, negative effects will be produced on managerial performance. As a result, H_4 cannot be rejected.

Table Four

The Interaction between Participation and Information Asymmetry affecting Managerial Performance

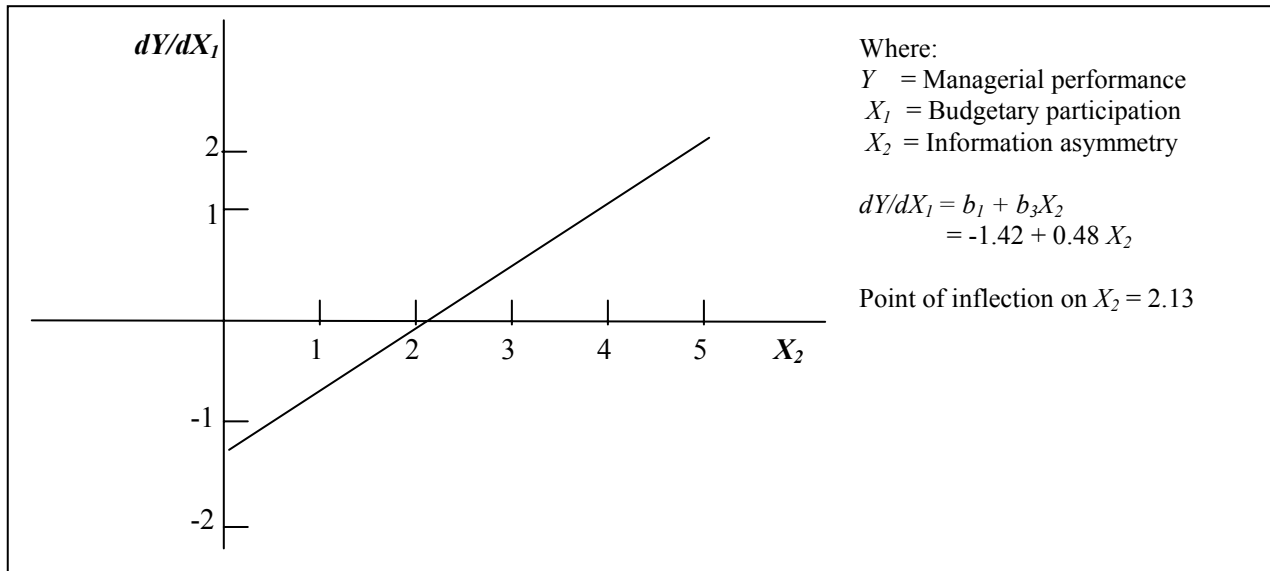
	Variables	Coefficient	T-value	Significant
X_1	Budgetary participation	B_1	-1.42	n.s.
X_2	Information Asymmetry	B_2	-0.54	n.s.
X_1X_2	Interaction term	B_3	0.480	<0.0428
	Constant			<0.0134

To obtain more understanding of the interaction between budgetary participation and information asymmetry in relation to managerial performance, a graphical presentation (see Figure Five) is necessary to enable a clearer picture of the partial derivative of managerial performance (Y) over budgetary

participation (X_1) on the information asymmetry variable. The vertical axis indicates the effects of budgetary participation (X_1) on managerial performance (Y). The horizontal axis presents the range of level of information asymmetry.

Figure Five

The Effect of Information Asymmetry (X₂) on the Relationship between Budgetary Participation and Managerial Performance



This suggests that there is a positive relationship between BP and MP only at a higher level of information asymmetry (beyond the inflection point 2.13). In contrast, at a lower level of information asymmetry (before the inflection point 2.13), there is a negative relationship between participation and managerial performance. These results are consistent with hypotheses H_1 to H_4 which posited that the effects of budgetary participation on managerial performance depend on the level of information asymmetry.

Conclusion

The above results support the hypothesis that the level of information asymmetry moderates the effects of budgetary participation on managerial performance. The study has followed Dunk's study (1993) by considering information asymmetry as a moderator in investigating the level of budgetary participation affecting managerial performance. Unlike Dunk's study, managerial performance was considered as an end variable (rather than budgetary slack). With similar findings to his studies, this study supports the argument that participation in budgeting issues might be contingent upon one of the four groups of situation shown in Figure Four.

The rationale for the current study is quite simple. Many earlier studies have been unable to find a consistent relationship between budgetary participation and managerial performance. As a result, the current study was aware that the relationship is not simple. Many other external factors play significant roles in affecting the result. This study was therefore conducted in light of the equivocal results of previous studies—which variously found positive, negative, or no relationships between budgetary participation and managerial performance (Brownell and Hirst 1986; Lindquist 1995; Fisher et al. 2000), depending upon the level of information asymmetry. Using a contingency approach to verify the results has been suggested by many earlier researchers (Otley 1980; Brownell and Hirst 1986; Gul et al. 1995; Lindquist 1995; Fisher et al. 2000). This study offers one explanation for the results of previous studies which reported a positive relationship between participation and managerial performance (Steers 1976; Ivancevich 1976; Kenis 1979; Galbraith 1977; Mia 1989; Merchant 1981) only in organisations with a higher level of information asymmetry. The level of participation in budgeting by respondents in the current studies might have been different. Therefore, in the opposite situation—that is, a

lower level of IA—a negative relationship between the two variables can be found. Thus, the result improves our understanding of the lack of relationship between participation and information asymmetry. Organisation designers should consider the notion that these motivational factors (IA and budgetary participation) are interdependent. The recognition of information asymmetry as a factor to motivate managers to perform better must be utilised in the budgetary participation process.

Previous studies have selected industries from the non-service sector. This study attempts to replicate (and use) the same measuring instruments which often have been used by the other researchers (Brownell 1982; Gul et al. 1995; Nouri and Parker 1998; Hirst and Yetton 1999; Mahoney et al, 1963; Chow 1983, Chow et al. 1988; Dunk 1993). Using factor analysis to look at the adaptabilities of the instruments for the hotel industry in Macau, it was found that these instruments, in fact, can be used for the current study, and that no other factors for the three variables can be found. This study therefore strongly supports the use of these instruments in the service sector.

With respect to the limitations of the present study, several points are worth mentioning. First, the present study focuses only on budgetary participation, information asymmetry, and managerial performance. Other budgeting incentives were ignored—including return on investment, motivation, job difficulties, and job satisfaction. Second, since the participants were selected only from the services sector, the sample was not random.

The results should, therefore, be interpreted with caution, and further research is required before the present results can be generalised to other industries. Third, it is suggested to future researchers that they investigate factors such as culture and size of the hotels, as these might affect the research findings. Finally, the use of participants' perceptions to measure the variables has been criticised on the grounds that they are not objective. Future research could also pursue this issue further.

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