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Relationships among budgeting control system, budgetary perceptions, and performance: A study of public hospitals

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The environmental uncertainty of medical industry was raised from the medical expenditure controlled by the government and the third party payers. This circumstance had forced hospital managers to learn management accounting. Budgeting control system was among the most popular mechanisms used by managers to contain costs and improve performance. However, budgeting control system could not achieve effectiveness in planning, motivating, negotiating, and controlling if there was no support from the organizational members. To obtain this support, careful attention must be given to the perceptive side of budgeting control system. In view of this, this study sought to explore the factors affecting the budgetary perceptions of hospital managers and the relationships of these perceptions with performance. The empirical study was based on a sample of 132 budgeting managers from a public hospital. Empirical results supported the proposed hypotheses that when the degree of budgetary feedback and budgetary participation were high, the budgetary motivation and budgetary attitude would be high, but the propensity to budgetary slack would be low, when the degree of budgetary motivation and budgetary attitude were high, the budgetary performance would also be high.

Key words: Budgetary perceptions, budgeting control system, budgetary performance, budgetary participation.

INTRODUCTION

Hospitals are confronting stricter management and pressure from medical insurance institutions on audit of expense caused by increases in medical expense and medical service. Implementation of medical insurance has also intensified the competition between healthcare providers (Jacobs, 1998; Curtis, 2004). This has enhanced quality of health services but has also, after implementation of National Health Insurance System, caused financial pressures and misallocation of medical resources (Chatterji, 2009; Duygulu and Kurgun, 2009). The environmental uncertainty originating from the containing measure taken by the government and the third party payers for medical expenditure has forced hospitals to strengthen operational advantages and financial structure (Reedy et al., 2005; Aidemark and Funck, 2009). For new management mechanism introduced in hospitals which might result in impact on organization members, the hospitals should be alert of such potential impact, in order to fully display efficiency and effectiveness of business management. In the field of management accounting, budgeting control system is a tool commonly

used in controlling costs and improving performance (Kren, 1992; Joseph et al., 2002). Through planning, executing, and auditing budget, managerial functions (planning, coordinating, motivating, and controlling) could be carried out (Subramaniam and Mia, 2003; Davila and Wouters, 2005). Among budgeting control systems, participative budgeting is one with effect of encouragement (Chenhall and Brownell, 1988; Brownell and Merchant, 1990; Kanodia, 1993). Therefore, most scholars acknowledge that budgeting control system is a management mechanism suitable for reducing medical cost and evaluating performance (Abernethy and Stoelwinder, 1991, 1995; Jacobs, 1998; Aidemark, 2001).

With regard to empirical studies, many early researches focused on the relationship between budgeting control system and organizational performance. Brownell (1981) finds that budgeting control system has a direct and positive effect on organizational performance. However, some researches find no correlation (Bryan and Locke, 1967; Blumenfeld and Leidly, 1969) or even negative effect between budgeting control system and

organizational performance (Kenis, 1979). With these previous inconsistent findings, some scholars propose to compromise these conflicts by using intermediate variables (Govindarajan, 1984; Kren, 1992; Magner et al., 1996; Frow et al., 2005; Chong and Johnson, 2007), in other words, intermediate variables can influence the relationship between budgeting control system design and hospital performance.

In medical industry, services are delivered by one person to another. Teamwork is particularly vital in achieving any dimension of organizational effectiveness (Jacobs, 1998; Aidemark, 2001). Successful budgeting control system heavily relies on the executing attitudes of organization members (Goddard, 1997; Frow et al., 2005). No matter how scientific and objective the budgeting techniques are, budgeting control system cannot be effectively performed without cooperation among members (Chong and Johnson, 2007). To approach the object, investigation on perceptive factors of budgeting control system shall be conducted. However, among existing budgeting researches only very few of them deal with the relationship between budgetary perceptions and organizational performance. In order to supplement the shortages of previous researches, this study integrates the budgetary perceptions (budgetary motivation, budgetary attitude, and propensity to budgetary slack) as the intermediate variables between budgeting control system and performance. Such difference distinguishes this study from other researches. In sum, this study investigates the budgetary perception factors of organization members and the influence of budgetary perceptions on performance in the medical industry. There are three research questions in the study:

What are the budgetary perception factors of hospital departmental managers?

Is there any relationship between budgeting control system and budgetary perceptions? This study investigates the relation from budgeting planning, implementing, and controlling perspectives to budgetary perceptions.

To examine the relationship between the budgetary perceptions and budgetary performance.

LITERATURE REVIEW AND RESEARCH HYPOTHESES

Budgeting control system

The implications of budgeting control system

Budget refers to an inclusive plan that an organization uses to obtain and consume financial as well as non-financial resources during a period of time. It describes an organization's actions plans in a quantifiable format (Kenis, 1979). Budgeting encourages managers to think

about the future and communicates future actions plans to organization members (Subramaniam and Mia, 2003). Budgeting also makes an organization aware of operation bottleneck and is able to efficiently allocate resources (Davila and Wouters, 2005; Ugoh and Ukpere, 2009). In addition, it enables an organization to coordinate activities through integrating departmental budgets. Effective budgetary motivates members to work toward organization goals, which could as well serve as control criteria of departmental performance (Jacobs, 1998). Budgeting is successful when it receives full support by top management and well perceived by members of its initiation and implementation (Chaney et al., 2002; Ugoh and Ukpere, 2009).

The budgeting control system of Chinese public hospitals

Government-owned hospitals differ from private hospitals to a great extent in budgeting. Under the protection of general funds of government budget, the operational efficiency of government-owned hospitals has been concerned (Chang et al., 2003). Particularly after the implementation of the national health insurance system, the equality of competition between the two systems has become increasingly intense (Chang et al., 2008). To improve the operational efficiency, university-affiliated hospitals are reformed to adopt the operation fund system and take the responsibility of operation result so as to make up the gap between the two hospital systems. Therefore, the budgeting control system is regarded essential since it works as the mechanism of planning, coordinating, motivating, and controlling (Chang et al., 2003). Through in-depth interviews with top management of a university-affiliated medical center, it was found that (1) the revenue budget was listed solely by the departments of medical affairs and accounting, (2) the expense budget of personnel and administration cost was determined by each department, and (3) the fixed assets (equipment) budget was determined by the management. The top management would reserve budget for material equipment according to strategic objects and then evaluate the request by each department. The final decision is made by the top management, based on the operational efficiency and personnel size of the requesting department. Since the budget is based on each department's demand and allocated by the management, it can avoid the problems of budgetary accuracy, estimate certainty, controllability, goal difficulty, goal clarity, and acceptance.

Factors affecting the budgetary perceptions

Among the relevant researches, intermediate variables can influence the relation between budgeting control system design and hospital performance. (Govindarajan,

1984; Kren, 1992; Magner et al., 1996; Frow et al., 2005; Chong and Johnson, 2007). This study focuses on the budgetary perceptions as the intermediate variables. In early researches, Collins (1978) explores the interaction effect among personal flexibility, budgetary characteristics (accuracy, controllability, and participation), demographic characteristics, and attitudes on budgetary responses. Results indicate that perceived budgetary characteristics (accuracy, estimate certainty, controllability, and participation), and positive attitudes toward these characteristics are the determinants affecting budgetary responses. Besides, Kenis (1979) investigates how the budgetary characteristics (participation, feedback, and evaluation) affect budgetary motivation (budgetary perceptions) and performance (budgetary performance, cost efficiency, and job performance). Results show that significant positive correlations exist among budgetary characteristics, budgetary motivation and performance. Budgetary characteristics as a whole may play an important role in improving the attitudes of managers toward budgets and the budgetary motivation of managers. This study continues the concept of Kenis (1979), and defines characteristics of budgeting control system as budgetary participation, budgetary feedback and budgetary evaluation.

The researchers further examine the effect of managers' perceptions on managerial performance. Govindarajan (1986) explores how environmental uncertainty influences the relationship between budgetary participation, budgetary motivation (managers' budgetary perceptions) and budgetary performance. It is found that when environmental uncertainty increases (1) budgetary participation has a positive impact on budgetary performance, (2) budgetary participation has a positive impact on budgetary motivation. Goodwin and Kloot (1996) investigate how strategic communication (budgetary participation) influences budgetary response perception (propensity to budgetary slack) through role ambiguity. It is found that when strategies and budgeting process are closely connected, strategic communication and propensity to budgetary slack are negatively and significantly related. Based on the existing literatures, this study defines the dimensions of budgetary perception and includes budgetary attitudes, propensity to budgetary slack and budgetary motivation.

The relationship between budgeting control system and budgetary perceptions

From the literature review, this study focuses the budgetary characteristics on budgetary participation, budgetary feedback and budgetary evaluation (Kenis, 1979). Besides, budgets are initiated in two formats: imposed budget and participative budget (Brownell and McInnes, 1986; Poon et al., 2001). Top-down imposed budget tends to cause members' complaints and abrasive reaction, while bottom-up participative budget tends to

gain members' cooperation (Brownell and McInnes, 1986). The latter is considered most motivating by scholars but requires members' understanding and accepting organizations' strategies in the initiating process (Poon et al., 2001). Budgeting targets solely set by top management might be too difficult or too loose. On the contrary, if solely set by subordinates, budgetary slacks could occur and the organization could get disoriented (Chaney et al., 2002). Thus, ideally budgeting control system should be established by all members, top management proposes the visions of organization development, whereas subordinates provide information on daily operation details (Chong and Johnson, 2007). Hence, the implementation fashion of budgets could also affect members' budgetary perceptions (Goodwin and Kloot, 1996). The following hypotheses are established:

- H₁: When budgetary participation is high, the department manager's budgetary attitude tends to be more positive.
- H₂: When budgetary participation is high, the department manager's propensity of budgetary slack tends to be low.
- H₃: When budgetary participation is high, the department manager's budgetary motivation tends to be high.

On the other hand, budgetary feedback refers to the degree of how a department manager receives the information about budgeting targets fulfillment (Hirst and Lowy, 1990). If budgets are utilized to help subordinates set up goals, evaluate operational outcomes, or uncover activities that call for resources, budgets could be deemed as facilitating individuals' and organization's goals (Leach-Lopez et al., 2007). Budgeting control system helps to coordinate consistency between individual goal and organizational goal, and also helps promote the motivation of the department managers for decision analysis. On the other hand, after the budget process of the current year has been completely executed, budgetary feedback can be helpful, by appraising and analyzing yearly budget. Budgetary feedback not only can verify and rectify the expected performance, but also provide assistance to predict the future budget (Magner et al., 1996; Poon et al., 2001). Besides, the higher feedback level from the budgeting control system, the more positive appraise and expectation the department managers would express, which would further assist the managers to timely rectify budgetary slack in planning budget. The following hypotheses are proposed.

- H₄: When budgetary feedback is high, the department manager's budgetary attitude tends to be more positive.
- H₅: When budgetary feedback is high, the department manager's propensity of budgetary slack tends to low.
- H₆: When budgetary feedback is high, the department manager's budgetary motivation tends to be high.

Budgetary evaluation refers to the degree of how a superior requires budgetary gap analysis and bases performance appraisal on budgeting information (Kenis,

1979). The nature of budgetary evaluation lies in execution force of controlling budget, where by comparing differences between actual and budgeting values and further analyzing the causes of these differences, in order to deal with exception management (Brownell, 1981; Kren, 1992). On the other hand, the result of budgeting execution is normally managed to as information for performance measurement of the responsibility center managers, in order to integrate with the incentive compensation system to perform the function of encouraging employees (Bonner and Sprinkle, 2002). When budgetary evaluation is more concerned by the organization, it encourages department managers' budgetary motivation and employees' positive attitude to the budget, because this is relevant to performance measurement of organization members. In addition, budgeting managers should first understand the strategic object, agree with the budgeting control system, and then be able to palliate the negative impact caused by the budgetary slack. Therefore, the following hypotheses are proposed:

H₇: When budgetary evaluation is high, the department manager's budgetary attitude tends to be more positive.

H₈: When budgetary evaluation is high, the department manager's propensity to budgetary slack tends to be low.

H₉: When budgetary evaluation is high, the department manager's budgetary motivation tends to be high.

The relationship between budgetary perceptions and performance

Budgetary perception refers to a department manager's general attitude, motivation and thinking toward the budgeting process. Budgetary attitude includes the perception of budgetary usefulness and budgetary relevance (Magner et al., 1996). Budgetary usefulness refers to whether a department manager considers the budgeting process as valuable and worthy (Poon et al., 2001). Budgetary relevance refers to the degree of how relevant the budgeting information is to a department manager's managerial decisions (Poon et al., 2001). Only when the budgeting manager has positive budgetary attitude, then he is capable of achieving budgeting functions of financial management, cost control, resource planning, and performance measurement. Since achievement ratio of budgeting target is the basic budgetary performance concerned by the top management, such as achievement ratio of medical cost, medical revenue, and medical gross margin (Kenis, 1979). Therefore, the higher usefulness and relevance the budget has, the more it helps the organization to accurately assess whether each department fulfill strategic object or requirements of National Health Insurance regulations. The budgeting control system also helps department managers in job performance of operational activities (Govindarajan, 1986; Brownell and Merchant, 1990), such as patient satisfaction and health care quality. Hence, budgeting information yielded from

high quality budget helps the budgeting managers to judge performance of the past and further increases job performance through exception management. As aforementioned, we formulate the hypotheses as follow.

H₁₀: When the department manager's budgetary attitude is more positive, the budgetary performance increases.

On the other hand, the fewer propensities in budgetary slack the budgeting managers have, the more it represents that the budgeting members would think more about the adequacy of budgeting targets, in order to prevent a very slack budget (Davila and Wouters, 2005). Importantly, as the result of budget execution is normally connected with personal reward. The budgeting managers cannot have attitude of budgetary slack if the budgeting control system has the nature of control, in order to prevent an easy achievement of budgeting targets (Webb, 2002). In other words, design and execution of budgeting plans formed by strict budgetary attitude would closely integrate with strategic object, and so can achieve predicted performance. The hypotheses are in the following.

H₁₁: When the department manager's propensity to budgetary slack is higher, the budgetary performance decreases.

Budgetary motivation refers to the intrinsic motivation a department manager gains out of budgeting activities (Brownell and McInnes, 1986). Therefore, high intensity of budgetary motivation is a positive budgetary perception which has a major purpose of helping budgeting managers to achieve budgeting targets and performance measures (Kanodia, 1993). Such intrinsic motivation normally related to reward obtained after completion of the budget, thus budgetary performance is always increased by active action taken by the budgeting managers through high intensity of budgetary motivation. Overall, achievement of budgeting targets normally represents completion of operational plan of the current year. Therefore, this paper reason that budgetary motivation would have a positively affect on budgetary performance. The hypotheses are in the following.

H₁₂: When the department manager's budgetary motivation is higher, the budgetary performance increases.

METHODOLOGY

Research model

In sum, the object of this study is to investigate the members' budgetary perceptions of a professional organization and the influence of budgetary perceptions on performance. According to the literature review, it is well known that the characteristics of budgeting control system are budgetary participation, budgetary feedback and budgetary evaluation, and the characteristics of

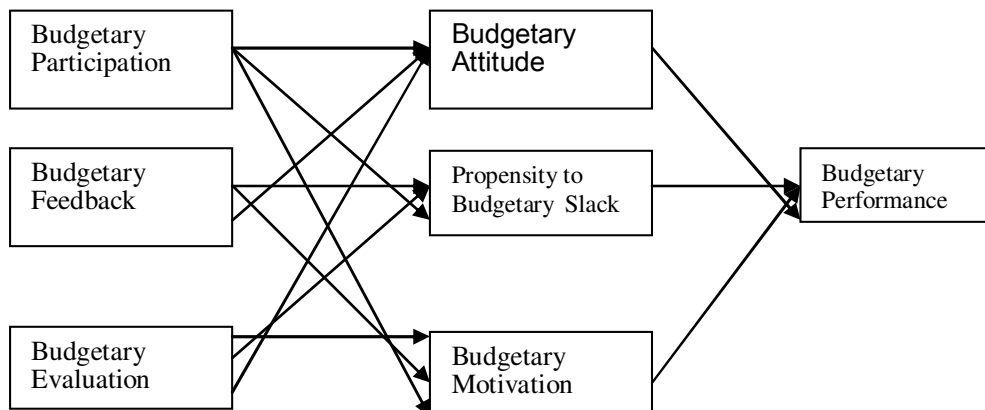


Figure 1. Research model

budgeting control system would affect budgetary perceptions (budgetary attitudes, propensity to budgetary slack and budgetary motivation). The study further discusses the relationship between budgetary perceptions and performance based on relative literatures and hypothesis reasoning. The aforementioned dimensions are then tailored to fit the practical operation of budgeting at hospitals to build up the research model (Figure 1).

Data collection and sampling procedure

A university-affiliated public hospital is chosen as the sample. The researchers visited the management to gain support on the research activities. Data are collected in two stages. In stage one, an in-depth interview is conducted with 10 budgeting managers to confirm the measurement variables and interview sample in stage two. On hundred and fifty-six initial questionnaires are mailed to budgeting managers for anonymous response. A second-wave questionnaires are mailed out to the sample after three weeks. Three are 132 valid questionnaires. The sample's average age is 41.39 years old, average working experience 10.97 years, and experience with the current job 6.13 years. The service units include clinical departments, nursing departments, auxiliary departments, and administrative departments.

Measurements

With respect to the measurement of the variables (Appendix), budgetary participation was measured using a revised 3-item scale developed by Kren (1992). The six items were loaded into one factor (Cronbach's $\alpha=0.75$; eigenvalue= 2.57; factor loadings all above 0.54; KMO = 0.73). The scale of budgetary feedback was adopted from Hirst and Lowy (1990). The three items were loaded into one factor (Cronbach's $\alpha=0.79$; eigenvalue= 2.11; factor loadings all above 0.80; KMO = 0.64). Budgetary evaluation was measured using a revised 5-item scale developed by Kenis's (1979). The five items were loaded into one factor (Cronbach's $\alpha=0.84$; eigenvalue= 3.39; factor loadings all above 0.58; KMO = 0.83). On the other hand, the scale of budgetary motivation was revised from Brownell and McInnes (1986). The three items were loaded into one factor (Cronbach's $\alpha=0.88$; eigenvalue= 1.79; factor loadings all above 0.95; KMO = 0.50). Budgetary attitude was measured using a revised 2-item scale from Govindarajan (1986). The two items were loaded into one factor (Cronbach's $\alpha=0.85$; eigenvalue= 1.74; factor loadings both above 0.93; KMO = 0.50). The scale of propensity to budgetary slack was adapted from Dunk

(1993). The six items were loaded into one factor (Cronbach's $\alpha=0.51$; eigenvalue= 1.32; factor loadings both above 0.81; KMO = 0.50). Budgetary performance was measured using a revised 8-item scale developed by Abernethy and Stoelwinder (1991) and Wentzel (2002). For each questionnaire item, subjects were asked to express the degree to which they agreed with the statements on seven-point Likert rating scale with strongly disagree (1) to strongly agree (7). The construct validity is confirmed because the KMO of all variables are above 0.50 (Kaiser and Rice, 1974) and the selected items are loaded into their corresponding factor. Besides, Cronbach's α of all variables are all above the acceptable level of 0.5 (Cuieford, 1965).

RESULTS

Descriptive statistics

In this study, descriptive statistics analysis (Table 1) and Pearson correlation analyses are employed to analysis the data for the purpose of understanding the sample characteristics and level of correlation among variables. As the Pearson correlation analysis in Table 2, the higher the degree of budgetary feedback is, the lower the department manager's propensity to budgetary slack, the stronger the budgetary motivation, and the higher the budgetary performance are. The higher the department manager's budgetary participation is, the more positive the budgetary attitude, the stronger budgetary motivation, and the higher the budgetary performance are.

Hypotheses testing

To test hypotheses, canonical analysis is adopted. Characteristics of budgeting control systems (including budgetary participation, budgetary feedback, and budgetary evaluation) are chosen as the independent variable set, while budgetary perception variables (including budgetary attitude, propensity to budgetary slack and budgetary motivation) as the dependent variable

Table 1. Descriptive statistics analysis (n=132).

Variable	Mean	S. D.	Cronbach's α
Propensity to budgetary slack	4.63	0.72	0.51
Budgetary attitude	4.90	1.29	0.85
Budgetary motivation	5.04	0.90	0.88
Budgetary participation	5.52	0.98	0.75
Budgetary feedback	4.51	1.14	0.79
Budgetary evaluation	5.36	1.48	0.84
Budgetary performance	6.08	0.58	0.61

Table 2. Pearson correlation analysis.

Variable	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Propensity to budgetary slack (A)	1.00						
Budgetary attitude (B)	0.09	1.00					
Budgetary motivation (C)	0.23 ^{***}	0.69 ^{***}	1.00				
Budgetary participation (D)	0.16 [*]	0.69 ^{***}	0.74 ^{***}	1.00			
Budgetary feedback (E)	0.11	0.57 ^{***}	0.61 ^{***}	0.76 ^{***}	1.00		
Budgetary evaluation (F)	-0.01	0.16 [*]	0.14	0.19 [*]	0.27 ^{***}	1.00	
Budgetary performance (G)	-0.19 ^{**}	0.14	0.11	0.15 [*]	0.29 ^{***}	0.47 ^{***}	1.00

***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.1$

set. It intended to test whether there are significant correlation between scores from the two linear functions and whether a reasonable interpretation can be made of the two set of coefficients from the functions. In Table 3, the canonical coefficient 0.37 and Wilk's Λ 0.83 ($p < 0.01$) illustrate a significant linear correlation between the two sets. The canonical loading is 0.98 for budgetary feedback, 0.64 for budgetary participation, and 0.31 for budgetary evaluation, while the canonical loading is 0.84 for budgetary motivation, -0.45 for propensity to budgetary slack, and 0.43 for budgetary attitude. In other words, when budgetary feedback and budgetary participation are higher, the department manager's budgetary motivation tends to be higher, when budgetary participation is higher, budgetary attitude will be more positive, when budgetary feedback is high, the department manager's propensity to budgetary slack will be lower. Hypotheses 1, 3, 5, and 6 are supported. At the study hospital, the budget is proposed by department managers and then adjusted by department's past performance and number of employees. This could explain why the relationship between budgetary participation and propensity to budgetary slack and that between budgetary feedback and budgetary attitude are not significant.

As Table 4 indicates, the canonical coefficient 0.29, and Wilk's Λ 0.90 ($p < 0.05$) shows a significant linear correlation between the two variable sets (budgetary perceptions and performance). The canonical loading is 0.97 for budgetary motivation, 0.72 for budgetary attitude, and 0.28 for propensity to budgetary slack; while the

canonical loading is 0.97 for budgetary performance. That is, when budgetary motivation is higher and budgetary attitude is more positive, a department manager's budgetary performance tends to be higher. The results support Hypotheses 10 and 12. Figure 2 illustrates the canonical correlation paths among variables.

CONCLUSION AND IMPLICATIONS

Research findings

This study continues the concept of scholars who believe that the relation between budgeting control system design and organizational performance can be intermediated by other variables (Govindarajan, 1984; Kren, 1992; Magner et al., 1996; Frow et al., 2005; Chong and Johnson, 2007). For compensating the shortages of previous researches, our study integrates the budgetary perceptions (budgetary motivation, budgetary attitude, and propensity to budgetary slack) as the intermediate variables between budgeting control system and performance. This is the difference of the study from other researches. Besides, most related researches explore the relation between budgeting control system design and organizational effectiveness for profit-seeking enterprises, there are rarely non-profit enterprises. This study focuses on hospital to examine the important issues mentioned previously. This is one of the main practical contributions. In sum, this study investigates the members'

Table 3. Canonical correlation analysis - Characteristics of budgeting control system and budgetary perceptions.

Variable	Canonical variate
Independent variable	χ^2
Budgetary participation	0.64
Budgetary feedback	0.98
Budgetary evaluation	0.31
Variance extracted (%)	6.74
Redundancy index	48.75
Dependent variable	η^2
Budgetary attitude	0.43
Propensity to budgetary slack	-0.45
Budgetary motivation	0.84
Variance extracted (%)	36.25
Redundancy index	5.01
Canonical R ²	0.14
Canonical correlation coefficient	0.37***

***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.1$

Table 4. Canonical correlation analysis - Budgetary perceptions and performance.

Variable	Canonical variate
Independent variable	χ^2
Budgetary attitude	0.72
Propensity to budgetary slack	0.28
Budgetary motivation	0.97
Variance extracted (%)	4.21
Redundancy index	50.63
Dependent variable	η^2
Budgetary performance	0.97
Variance extracted (%)	62.87
Redundancy index	5.23
Canonical R ²	0.08
Canonical correlation coefficient	0.29**

***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.1$

budgetary perceptions and the influence of budgetary perceptions on performance in the medical industry. Empirical results show that when budgetary feedback and participation is higher, the department managers' budgetary motivation tends to be higher, the budgetary attitude more positive, and the propensity to budgetary slack slower. Next, when the department managers have higher budgetary motivation and more positive budgetary attitude, the budgetary performance tends to be higher. Thirdly, when the department manager perceives higher "budgetary usefulness" or "budgetary relevance", the budgetary attitude tends to be positive.

Management implications

This study aimed to investigate related factors affecting budgetary performance of medical organizations, including the characteristics of budgeting control system and budgetary perception factors, and to further construct an integrated research model. This model can be used as references by medical organizations in planning budgeting control system. Empirical results show that budgetary feedback information would have effects of supervision, control, and encouragement on budgeting managers. Hence, budgetary feedback will yield positive effect to

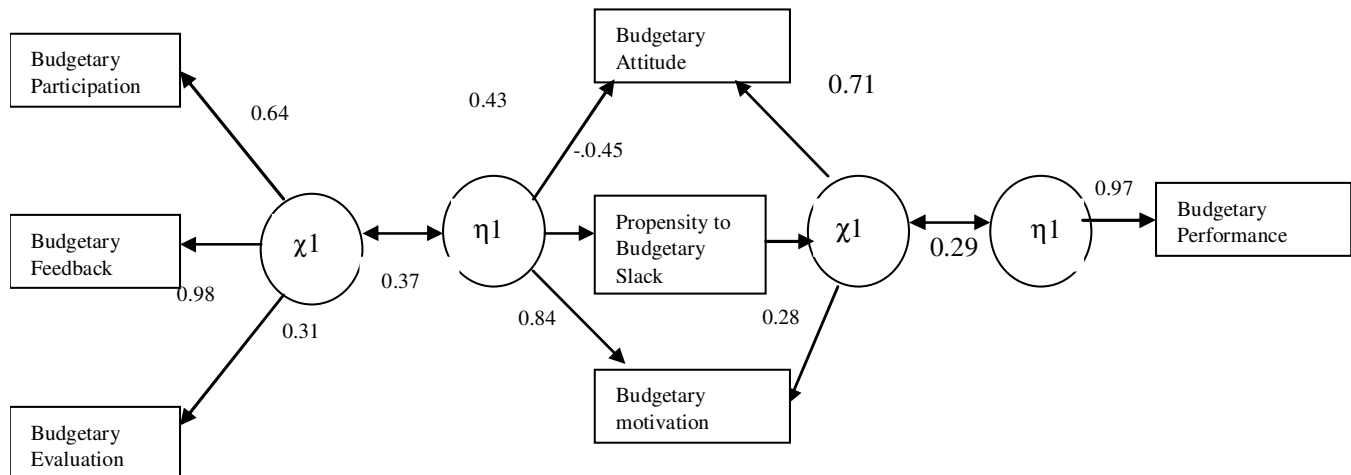


Figure 2. Canonical correlation analysis.

managers' budgetary motivation (sense of accomplishment and promotion). Besides, department manager's taking part in budget planning in person indicating that empowerment intensity of the organization to budget is high, or that department manager will be consulted and his opinions will be taken into consideration in budget planning. This would further enhance positive and agreeable attitude of the budgetary participation, and would have positive effect on budgetary motivation. However, due to budget planning principles of medical institutions is proposed by department managers, and then distributed in terms of department performance or employee number, thus, intensity of budgetary participation is not relevant to budgetary slack. In other words, it is not that a supervisor who highly participates in budget planning would therefore, propose a slacker budget, but he should do it according to overall performance and sales. In consequence, this paper suggests that budgeting manager should take the consistency between organizational object and department strategic object as guidelines of budget planning, rather than merely budget achievement ratio of an individual department.

On the other hand, the relationship between the budgetary feedback and the budgetary attitude is not significant. The budgetary feedback information about variation of budget execution has power in supervision, performance measurement, and control. Budgetary feedback may decrease the possibility that the department supervisor positively deal with the budgeting system. This empirical result is consistent with previous studies (Goddard, 1997; Hirst and Yetton, 1999; Chaney et al., 2002). It is recommended that medical organization should take educational propaganda of utilities, characteristics, and functions of budgeting control system highly to acquaint department managers with budgeting mechanism that create profit for organization. The effect of budgetary evaluation on budgetary perceptions is not significant. In other words, the budgeting managers

imputed by his superior for responsibility of demands and discontent do not have significant relevance to budgetary attitude and budgetary motivation. Hence, "the same knife cuts bread and fingers." Most budgeting managers are lacking positive attitude in accepting negative budgetary performance. This paper still suggests that top management should negotiate with budgeting managers and listen to their reasons about poor budgeting execution ratio, rather than merely order budgeting managers with quantitative values to prevent a result of dysfunctional decision.

Research limitations and suggestions

However, some limitations of this study have to be recognized. First, the research variables are designed to measure respondents' perception. Biases of instability, central tendency, leniency or strictness could occur. Secondly, the research model is cautiously built upon existing literature. Nevertheless, due to time and budget constraints, a cross-sectional, instead of longitudinal, design is adopted. The causality needs to be conservatively concluded. Thirdly, the bias of questionnaire interviews is inevitable, including halo effect, dishonest response, respondents being unqualified and social desirability bias. Fourthly, the results obtained from studying only one hospital might not be generalized to other hospitals or even the entire health industry. Fifthly, some variables (such as personal traits, culture differences (Williams et al., 1990) are not included in the study but might have important influence. In spite of the aforementioned limitations, the current study has contributions in in-depth understanding about department managers' performance and budgetary perceptions. It reveals the important factors that affect budgetary attitude. Findings can help management of non-profit organizations in effectively implementing a budgeting

control system that accomplishes planning, coordinating, motivating, and control.

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APPENDIX

Budgetary participation

I am involved in setting all portions of my budget.
My budget is not final until I am satisfied with it.
My opinion is an important factor in setting my budget.

Budgetary feedback

1. I could obtain considerable amount of information about budget objective fulfillment of my department.
2. I could obtain considerable amount of information and guidance about the budgetary gap of my department.
3. My superior would make me aware of how well I have done in objective fulfillment of budget.

Budgetary evaluation

1. My superior demands that I am responsible for budget gap.
2. My superior has asked me to keep up with schedule as to fulfill budget objectives.
3. My superior would express discontentment when I fail to fulfill budget objectives.
4. My superior would consider my performance unsatisfactory when a big budget gap occurs in my department.
5. My superior would be discontent with budget gap in my department.

Budgetary motivation

1. Good budgetary performance gives me sense of achievement.
2. Reaching budgeting objectives help me in growth and development.
3. Reaching budgeting objectives give me in high pay.

Budgetary attitude

1. I think making a budget fairly helpful in management.
2. I think making a budget fairly helpful in planning department's activities.

Propensity to budgetary slack

1. Standards set in the budget induce high productivity in my area of responsibility.
2. Budgets set for my area of responsibility are safely attainable.
3. I have to carefully monitor costs in my area of responsibility because of budgetary constraints.
4. Budgets for my area of responsibility are not particularly demanding.
5. Budgetary targets have not caused me to be particularly concerned with improving efficiency in my area of responsibility.
6. Targets incorporated in the budget are difficult to reach (reverse- scored).

Budgetary performance

1. Cost-to-charge ratio.
2. Medical revenue ratio.
3. Medical margin ratio.
4. Number of outpatients.
5. Occupancy rate of hospital beds.
6. Planning activities.
7. Generally, meeting budgetary targets set for my area of responsibility.