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## **A Study on the Establishment of Performance-Based Budgeting (PBB) System Based on Diamond Model**

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### **ABSTRACT**

The performance-based budgeting (PBB) is a type of budgeting system based on evaluating and tracking the performance of every agency, providing the budget, and allocating the credits according to the performance progress made throughout the projects. Despite the emphasis and mandatory requirements, the PBB has not succeeded much in Iran over the recent years. According to the Fourth Development Plan, the management and planning organization of Khuzestan Province is obliged to enforce the performance-based budgeting, even though little difference has been made in this regard. The present research aimed at examining the internal and external factors contributing to the organizational implementation of performance-based budgeting under the Diamond Model. The Diamond Model seems the involvement of six factors crucial for the progression of a budgeting system into the performance-based budgeting. The factors include management planning, cost management, performance management, change management, accountability and motivation system. Results indicated that planning, cost management, and performance management ranked from first to third among the factors in terms of utilization in organizational, while change management, accountability, and motivation system ranked the lowest in terms of organizational utilization in implementation of performance-based budgeting. In other words, the organization has more difficulty concerning performance management, change management and accountability and motivation system. Finally, the SWOT matrix illustrated the weaknesses and strengths, opportunities and threats in each of the contributing factors.

JEL Classification: G31; H61; H68.

Keywords: Performance-Based Budgeting; Strengths; Weaknesses; Opportunities; Threats; Strategies.

### **1. INTRODUCTION**

Budgeting refers to a process through which the limited resources are allocated to unlimited needs. Budget can reflect the goals and strategies in the form of financial statements, thus pointing out how to implement the plan and control the progress. In performance-based budgeting (PBB), the credits are categorized into tasks, programs, activities and projects. Moreover, the volume of operations and the cost of actions made by government and relevant agencies are calculated on the basis of cost accounting practices (Raesi Sarkandiz, 2006). Despite the ever-growing government functions and plans as well as the demand for establishment of an effective information system in the financial management of government organizations, the governmental accounting in Iran has so far experienced no fundamental evolution. Given the government's next serious move towards economic liberalization and creation of competitive markets, it is necessary to shift focus on the costs and how to further operationalize the budget preparation procedure.

The performance-based budgeting integrates "efficiency and effectiveness" into the traditional aspects of budgeting. The performance-based budgeting makes a distinction between "efficiency" and "effectiveness". In the former, the goal involves the optimal utilization of resources, whereas the latter is concerned with performance. The performance-based budgeting categorizes the performance in a way to set out more transparent objectives, the budget is assessed more conveniently, the costs are estimated with a concentration on how to link the input and output data (Hassanabadi et al., 2007). In spite of the advantages mentioned above, the available evidence shows that budget reform is implemented to a very limited extent, which raises the question why few governments implement the performance-based budgeting, and what requirements there are to ensure its full implementation (Katircioglu, 2010; Andrew, 2004). Performance-based budgeting adds effectiveness and economizing factors to traditional aspects of budgeting. This system distinguishes efficiency from effectiveness. Efficiency emphasizes on the useful utilization of the resources concerned while effectiveness considers the performance.

Categorization of operations in performance-based budgeting is in a way that goals are expressed more transparently, the budget is reassessed more easily and its costing method emphasizes on the input-output relations. The most important goal of performance-based budgeting is to reform the public sector management system and increase the effectiveness in this sector (Kurdabacheh, 2007). The Diamond Model seems the involvement of five factors crucial for the progression of a budgeting system into the performance-based budgeting. The factors include management planning, cost management, performance management, change management, accountability and motivation system. Below, the definition of those factors are presented as:

1. Planning:

A. Considering the qualitative and quantitative development of strategic planning models, it is recommended that strategic planning models be employed for fulfillment of the 5-year Plan.

B. Greater interaction between the budget-receiving executive agencies and the organization

2. Performance management:

A. Signing agreements and MoUs in order to achieve the national Vision 2025 and supervision over the subordinate agencies and department

B. Establishment of a performance assessment unit at the organization in order to achieve the short-term and long-term goals, based on which the managers shall adopt decisions

3. Cost management:

A. It is recommended that a cost committee be established for estimation of costs based on different activities and implementation of the cost system composed of several proficient experts.

B. Allocation of exclusive credit for projects subject to cost

4. Change management:

A. According to the priorities in the PBB and the excellent managerial operational skills and competency, it is recommended to adopt legal authority for better and faster execution of PBB.

B. If possible, it is recommended that troublesome regulations be restricted so as to delegate the essential authority to the executive agencies to spend the budget where necessary.

C. The organization ought to provide the executive agencies with the necessary instructions.

D. Support and participation from the entire key influential executive managers

5. Accountability and motivation:

A. Establishment of an employee suggestion system

B. Planning for receiving continuous feedback from the executive agencies

C. Establishment of a proper system to attract managers and employees through reasonable consistency between salaries and performances aimed at achievement of annual goals

This research sought out an answer to why the performance-based budgeting has not been fully implemented in the organization. What barriers are there against the full and proper implementation of performance-based budgeting? And what are the requirements for effective implementation of performance-based budgeting?

## 2. LITERATURE REVIEW

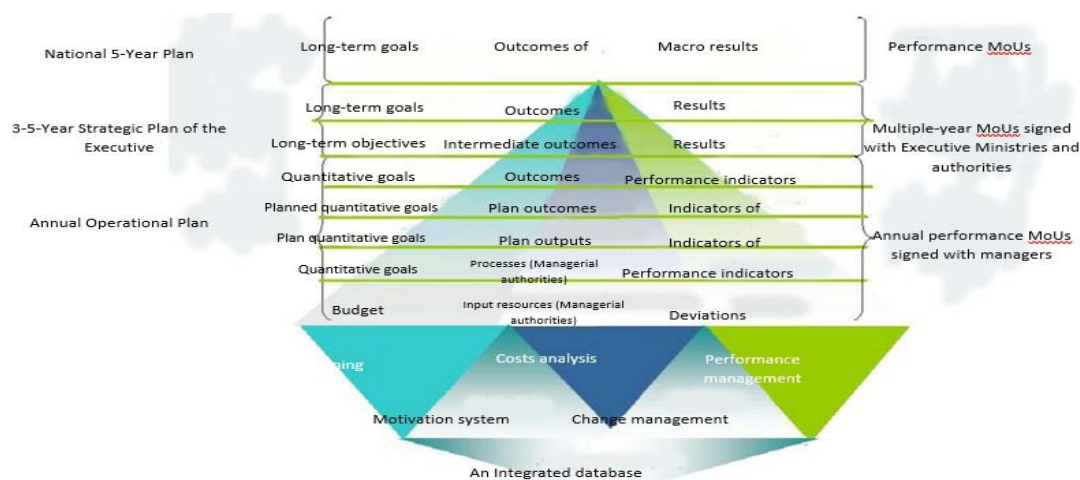
The term budget was originally spelled as *bougette* in the middle-age colloquial French, referring to a small leather bags worn around the waist, in which money was kept. The transliterated Persian equivalent of the term "budget" was imported to Iran after the Constitutional Revolution (1905), since the former Iranian Constitution had been adapted based on the Constitutions of France and Belgium. Furthermore, the term later appeared in the Iranian Calculations Law along with the French Financial Laws, turning into a widely used French-pronounced term in the Persian financial lexicon. There are different viewpoints, theories and definitions regarding the concept of budget. In this respect, the definitions have been influenced by a variety of political, economic and cultural situations in the society as well as the governmental economic theories. This may have been due to the diverse applications associated with budget from one era to another. Accordingly, the various definitions proposed for budget can be divided into three major categories including 1) politics, 2) economy and finance, and 3) planning and management. At the formulation stage in any country, the budget provides a framework for devising the government policies.

Moreover, it can specify the various activities to achieve the development goals and assign the activities to the executive agencies. At the approval stage, the budget functions as a means of legal control. At the execution stage, the budgeting can guide the managers in how to enforce the formulated policies. Eventually, budgeting is regarded as the most essential tool for controlling and monitoring the government's performance. The performance-based budget (PBB) refers to a type of budget calculated based on the tasks, performances, and projects carried out by the government executive agencies. In formulation of the performance-based budget, the focus is on the activities and expenditures, rather than the requirements and means of execution. The ultimate goal of PBB is to facilitate the adoption of rational decisions on how to allocate the resources based on measurable outcomes. From an alternative perspective, the PBB serves to reform the public sector and enhance the effectiveness of the spending (Saedi & Mazidi, 2006).

It seeks to explain survey findings showing that, while most states are implementing PBB reforms, few show any evidence of direct behavioral changes resulting from such reforms either in terms of the development of, or response to, new performance-based incentives, or allocations that are linked to performance. The explanation offered is that PBB approaches are implemented in addition to traditional approaches, resulting in the traditional approaches dominating PBB. In order to influence behavior, PBB reforms should be implemented as replacements of, not additions to, pre-existing budgetary regimes (Andrews & Hill, 2003). Almost all American States have tried some form of performance-based budgeting, and this study examines the impact of this budget process innovation on state expenditures. Using panel data for 1970 through 1997 the findings indicate that performance-based budgeting curtails state spending per capita by at least two percentage points. However, not all state government programs are affected equally; some budget categories experience spending increases after the implementation of performance budgeting. The paper also examines the adoption pattern among states of performance budgeting rules (Crain & O'Roark, 2004).

The model adopted in this study is known as Diamond, which deems essential six factors including "planning management, cost management, performance management, change management, and accountability and motivation system" for modifying the current budgeting system into PBB. The Diamond Model starts with planning, which reflects the fact that the plans carried out by the executive agencies needs to be designed within a long-term strategic framework drawing on the Iranian Five-year Development Plan and general policies, which shall on other hand be financed within a short-term period. In this section, the executive plans are defined on a long-term basis according to the strategic plan adopted by the involved agency. At the next stage, the executive agency will formulate its PBB document called the annual plan as a portion of the annual strategic plan so as to estimate the budget, raise funding and evaluate the performances. The quantitative objectives pursued by an output-oriented plan determine the outcomes as well as the corresponding performance indicators. At the final stage, the budget for the executive agency will be obtained based on the cost analysis of the planned outputs. In this regard, change managements functions as an element empowering the model the efficiently reform the budgeting system.

The motivation system deals with the scope of power delegated to the managers, whose scope of authority is expanded in the performance-based budgeting system, allowing them to take managerial measures for utilization of inputs and modification of process aimed at generation of favorable outcomes.



**Figure 1.**  
**Comprehensive Diamond Model**

Similarly, the accountability system assists the performance management within the conventional administrative framework or reliance on the performance MoUs, thereby to assess the performance of managers and programs in terms of objectives, outcomes, and outputs identified in the annual plans.

### 3. METHODOLOGY

This is an applied descriptive survey research. The information was extracted through the SWOT matrix under the Diamond Model. At the next stage, the data were collected in a field effort through questionnaire, the results of which were then tabulated in several tables. Next, all the data at both descriptive and inferential levels were analyzed. Regarding the results, the internal factors contributing to the organizational PBB implementation procedure (strengths, weaknesses) and the external factors (threats, opportunities) were extracted so as to propose a strategy for each factor with regard to the matrix score achieved in the internal and external assessment. The population consisted of three groups of individuals informed of the budget stages (i.e. preparation and formulation, approval, execution and supervision) as follows:

1. The general managers and deputy general managers who are involved in the budgeting process
2. The budget, incorporation and planning experts at the Iranian Management and Planning Organization
3. The experts in accounting, finance, credit as well as chief accountants and organizational deputies.

No sampling in this research since the population was too small. Instead, census was used for data collection. The population covered the following individuals:

A total of 11 managers, 18 budget experts, and 10 accounting experts

In order to analyze the findings, the data collected from the field research via questionnaire were first extracted and tabulated. The entire data were then analyzed through SPSS using both descriptive and inferential statistics. As for the descriptive examination of data, the statistical indicators related to each variable were calculated since the questionnaire had been constructed based on a Likert's scale which is a popular method in questionnaire surveys (Arasli et al., 2008; 2005a; 2005b; Katircioglu et al., 2012; 2011a; 2011b). In the inferential phase, the PBB system was established through the SWOT matrix, where the T-test was applied for each element and the extent of progress. Furthermore, the Friedman's test was employed to rank the utilization of factors contributing to the establishment of the budgeting system. Findings were used to estimate the significance and ranking of the internal factors contributing to the organizational PBB implementation trend (strengths, weaknesses) and the external factors (threats, opportunities) with regard to their mean values.

#### 4. RESULTS AND DISCUSSION

The results of Friedman's test indicated that planning, cost management, and performance management ranked from first to third among the factors in terms of organizational utilization. Moreover, change management, accountability system, and motivation ranked the lowest in terms of organizational utilization in the implementation of performance-based budgeting. In fact, the results of T-test indicated that the organization has more difficulty concerning performance management, change management, and accountability and motivation system. Finally, the SWOT matrix for the internal and external factors ranked the weaknesses and strengths, opportunities and threats in each of the contributing factors based on the findings of descriptive statistics.

**Table 1. Assessment Matrix for the Internal Factors**

Factor	Status	Title	Relative significance coefficient	Ranking	Score
Planning	Strength	Existence of strategic plans under the framework of 5-year Plans	0.22	4	00.88
		Clear relationship between plans and budget categories	0.22	4	0.88
		Clear plan statistics for assessment of objectives	0.22	4	0.88
		Quantitative objectives are devised with regard to the executive capacities	0.16	3	0.48
	Weakness	Enhanced productivity is not a prerequisite to credit receivable from the organization	0.05	1	0.05
		There are relatively appropriate grounds for decision-making concerning the allocation of resources	0.11	2	0.22
<b>Total</b>			<b>1</b>		<b>2.39</b>
Performance management	Strength	Existence of ideal performance indicators	0.21	3	0.63
		Powerful organizational executive management	0.28	4	1.12
		Feasibility of plans in terms of required technical capability	0.21	3	0.63
	Weakness	Poor conversion of qualitative indicators to the quantitative ones	0.14	2	0.28
		Ineffective performance assessment across various departments	0.14	2	0.28
	<b>Total</b>			<b>1</b>	
Cost management	Strength	Existence of an automated accounting system linked to the automated revenue and budget system	0.22	4	0.88
		Familiarity with the concepts of cost and analytical practices concerning the organizational performance-based budgeting	0.16	3	0.48
		Sufficient manpower at the executive departments in terms of population and specialty	0.16	3	0.48
	Weakness	Difficulties concerning the indirect and overhead costs	0.11	2	0.22
		Poor analysis over the economic efficiency of activities	0.05	1	0.05
		Inadequate output-oriented accounting systems (either accrual or adjusted accrual)	0.11	2	0.22
		Lack of a cost accounting system	0.05	1	0.05
		Elimination of highly expensive areas only when credits are limited	0.11	2	0.22
<b>Total</b>			<b>1</b>		<b>1.94</b>

**Table 1. Assessment Matrix for the Internal Factors (Continued)**

Change management	Strength	Involvement of essential managerial capacities for progress toward PBB	0.4	4	1.6
		Excellent management skills and capabilities	0.4	4	1.6
	Weakness	Non-delegation of power to the executive agencies for obtaining credits and spending on where necessary.	0.2	2	0.40
<b>Total</b>			<b>1</b>		<b>3.60</b>
Accountability and motivation system	Strength	Performance MoUs enhancing the accountability	0.3	3	0.9
		Great management motivation and accountability spirit for tackling the problems	0.3	3	0.9
	Weakness	Absence of an employee-citizen suggestion system	0.2	2	0.4
		Inadequate motivation among the organizational employees for implementation of the PBB	0.1	1	0.1
		Poor consistency between the employee salaries and their performances aimed at achievement of annual objectives	0.1	1	0.1
	<b>Total</b>			<b>1</b>	

SWOT matrix for the external factors is presented in Table 2.

**Table 2. Assessment Matrix for the External Factors**

Factor	Status	Title	Relative significance coefficient	Ranking	Score
Planning	Opportunity	Qualitative and quantitative evolution of the strategic planning models	0.4	4	1.6
		Application of planning models	0.4	4	1.6
	Threat	Political factors leading to implementation of low-priority projects and operations in an area	0.1	1	0.1
		Incapability of the budget-receiving executive agencies in implementation of the PBB	0.1	1	0.1
	<b>Total</b>			<b>1</b>	
Performance management	Opportunity	Organizational managers ought to make decisions based on the performance assessment information	0.37	3	1.11
		Establishment of an independent organization for performance assessment revolving around the long-term and short-term goals	0.37	3	1.11
	Threat	Poor connection between the inputs and expected outputs	0.12	1	0.12
		Inadequate assessment of extra activities leading to aggravation of costs	0.12	1	0.12
	<b>Total</b>			<b>1</b>	
Cost management	Opportunity	Priority of management in the PBB	0.36	4	1.44
		Possibility to develop software applications for carrying out the essential calculations concerning the cost management	0.27	3	0.81
		Essential measures taken for cost management			
		The location of education courses on cost for managers and employees at executive agencies	0.27	3	0.81

**Table 2. Assessment Matrix for the External Factors (Continued)**

	Threat	Certain activities of the budget-receiving executive agencies are immeasurable	0.09	1	0.09
	<b>Total</b>		1		3.96
Change management	Opportunity	Government pressure for enforcement of change based on the modern budgeting system	0.37	3	1.11
		Involvement of expert managers and consuler highly specializing in the concept of change	0.5	4	2
	Threat	Inconsistency between the Iranian budget-related financial laws (calculations regulations) and the performance-based budget	0.12	1	0.12
	<b>Total</b>		<b>1</b>		<b>3.23</b>
Accountability and motivation system	Opportunity	Elimination of cumbersome financial regulations and simplification of financial procedures	0.33	3	0.99
		Expanding the scope of power delegated to the mangers at executive agencies	0.33	3	0.99
	Threat	Lack of a reward and accountability framework in exchange for the performance of the budget-receiving executive agencies	0.11	1	0.11
		Poor support from the provincial authorities for the PBB	0.22	2	0.44
	<b>Total</b>		1		<b>2.53</b>

Regarding the results of descriptive and inferential statistics as well as the internal and external scores achieved by each of the involved elements, this section explores the desirable strategies for improvement and promotion of PBB implementation in the organization:

**Table 3. Summary of Results**

The Performance-Based factors	Performance-Budgeting	Total score for the internal factors IFE	Total score for the external factors EFE	Strategy
Planning		3.39	3.40	SO
Performance management		2.87	2.46	WO
Cost management		1.94	3.96	ST
Change management		3.60	3.23	SO
Accountability and motivation system		2.40	2.53	SO

## 5. CONCLUSION

The present research aimed at examining the internal and external factors contributing to the organizational implementation of performance-based budgeting under the Diamond Model. Results indicated that planning, cost management, and performance management ranked from first to third among the factors in terms of utilization in organizational, while change management, accountability, and motivation system ranked the lowest in terms of organizational utilization in implementation of performance-based budgeting. In other words, the organization has more difficulty concerning performance management, change management and accountability and motivation system. Finally, the SWOT matrix illustrated the weaknesses and strengths, opportunities and threats in each of the contributing factors.

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