

## Assessing SHAH Model Performance-Based Budgeting (PBB) Possibility Case Study: Shiraz Municipality

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**Abstract:** This study is to assess PBB in Shiraz municipality. So a questionnaire was issued and a model was proposed to assess the possibility of PBB. Based on SHAH model the study findings concerning the subjects were negative in relation to three authority dimensions namely the authority to assess the performance and human and technical abilities and there is not the authority necessary to execute PBB and the subjects believe there is appropriate authority in Shiraz municipality in relation to three power dimensions namely legal, procedural and organizational authority. Also there are good conditions in relation to dimensions namely policy and Managerial acceptance, but there is not appropriate motive for the performance in another dimension of acceptance, that is, incentive compatibility. Also the findings show that PBB has decreased the expense in Shiraz municipality.

**Keywords:** Performance assessment, Performance-Based Budgeting (PBB), possibility assessment, programmed budgeting, SHAH model

### INTRODUCTION

As the most important government operation financial document, the budget plays an important role in achieving state development long term goals. Hence, any attempt to improve it has been interested. Generally any budget discussion focused on governmental inputs such as the amount of the sources, numbers of the personnel, etc. until recent decades and different theories presented about PEM (Public Expenditures Management) of which the most famous is PA (Public Administration) and was the dominant thought in PA field until the first years of 1980s, but when its negative dimensions and weaknesses appeared the managers' responding culture and PA and accounting administration developed and a new ideology NPM (New Public Management) in England and U.S.A. appeared, too, emphasizing on privatizing, contracting operation indexes and benefiting from operation assessment; thereafter by virtue of gradual successes of NPM (New Public Management) operational budget was proposed in services systems of the developed countries and the governmental sector authorities (As the respondents) and the citizens (As the inquirers) asked for more information regarding the outputs, the effects, efficiency and the cost prices of the operations mentioned in the governmental budget (McGill, 2001).

Having approved the Financial Responsibility Acceptance Law in 1994 New Zealand became the first country who applied operational budget system and after a short while Australia and England and then North European countries and U.S.A. imitated the same pattern; these expressions developed in a manner that

the governmental organizations found more power and flexibility to benefit from scientific and new systems costing (For example, based on ABC namely 'Activity Based Costing') by virtue of changing accounting system from cash to undertaking base like private sector (McGill, 2001).

The law approved to define some governmental regulations in Iran for 2001-2004 and generalized it to Fourth Development Program Law was of the important governmental performances reforming state financial system; in the same direction the budget bill was drafted for 2002 on the basis of the Government Finance Statistics (GFS) for 2002 and approved by the parliament; the Government Finance Statistics system was on the basis of governmental operational budgeting so it was decreed that the government was obliged to operate the budget according to Article 144 of Fourth Development Program Law.

Although the operating budget was incorporated into the government procedure manual and specially in previous state program and management organization the examinations show that the actual budget process is based on traditional linear budgeting model in most state governmental organizations who distribute the validities by allocating a little amount to the data; the process has complicated the budget preparation and execution in public administration in governmental organizations in recent fifty years. A high specialists' potentiality is spent to prepare and approve the budget for each period and encountered with several problems. Hence, there are some problems when some new accounting methods including governments' budget system are to be put into operation and some views

influencing budget and accounting system reforms have been proposed to solve them and one of the views was shown in the Shah (1998) studies. He described a model for governmental sector in which a model was defined to analyze the factors influencing governments' operating budget including three Authority, Acceptance and Ability factors; nowadays these factors are considered as the most important elements necessary to install the operating budget in governmental sector. So the governments demanding to put into operation the operating budget system first they need to identify and correct their weak points in each of above fields. So considering on one hand, the municipalities obligation and the importance of such budgeting as a transparent operation in world it is necessary to have such study in some departments such as municipalities. Thus, it is necessary to examine the actual challenges in program or traditional budgeting on one hand, and on the other hand, examination of putting into operation the operating budget in Shiraz metropolitan.

#### **LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

In 2008 the study 'Budgeting Partnership and Performance (A sample from Malaysia)' done by Yahya, Nikahmad and Fatima about budgeting partnership and performance in Ministry of Defense in Malaysia. Perhaps the budgeting behavior in the governmental organizations in developed countries differs from it in the developing ones. The study evaluated the findings of following study in the Ministry of Defense.

Nouri and Parker (1998) study done about 135 managers and supervisors in an American organization argued that when the managers are permitted to play some role in the budget process they have more organizational undertaking so their professional performance improves.

Blumentritt (2006) done as 'Strategic Management and Budgeting' showed that the managers face many challenges during budgeting and strategies programs and the budgets have no relation with the commercial and operational strategies and a budget is efficient only when the organization decides strategically. The strategic management and budgeting are separate, but they have interdependent activities so if both of them are used appropriately they can create and keep better operation.

Jordan and Harkbart (1999) study as 'The Goals & Success PBB Execution' shows that the responsibility to have an efficient program is more effective than budget allocation in order to establish PBB; the study examined the PBB models recommended by the executive department and provincial council and the findings showed that the estimated variables are negative in both models; in other words, PBB decreases the expenses.

Recent attentions to PBB have created some views about the effective factors on the successful system

execution. Such complex of the views was presented in SHAH governmental department model. The model emphasizes on three effective factors in PBB execution: Authority, Acceptance and Ability (Andrew, 2004). Another important factor in relation to PBB execution is the economic aspect. On this basis the study hypotheses can be grouped as follows. Three essential variables are examined in each group to execute PBB by virtue of the economic aspect:

**H1:** There is the ability for PBB in Shiraz municipality.

It is thought that the PBB execution would be unsuccessful because of low potential or organizational in ability. The examinations and reports show that the three key organizational abilities for PBB are: Performance evaluation ability, Personnel ability and Technical abilities:

**H1-1:** There is the potential for Performance evaluation ability for PBB goals in Shiraz municipality.

**H1-2:** There is the personnel ability necessary for PBB execution in Shiraz municipality.

**H1-3:** There is the technical ability for PBB execution in Shiraz municipality.

The second factor effective on PBB relates to the mechanisms available to the governments. If the budget policy makers have not the authority necessary to execute the PBB in different phases, the execution encounters with problem(s). There are three important power dimensions: legal, procedural and organizational authority:

**H2:** There is the authority necessary for PBB execution in Shiraz municipality.

**H2-1:** The legal authority necessary to execute PBB have been transferred to Shiraz municipality.

**H2-2:** The authority concerning the procedures to execute PBB exists in Shiraz municipality.

**H2-3:** The organizational authority necessary to execute PBB have been transferred to Shiraz municipality sections and exist yet.

If some governmental authorities, departments heads and employees disagree with the reforms, it can be the greatest obstacle against the execution and Performance evaluation ability (Robinson and Brumby, 2005):

**H3:** There is potential acceptance to execute PBB in Shiraz municipality.

If PBB is accepted by the groups, it will be executed high probably. As stated the authorities, managers and employees should believe that PBB is worthwhile to decrease the costs and achieve short and long term profits for the government and community in order to execute PBB successfully. The three dimensions of acceptance are necessary: Political

acceptance, Managerial acceptance and Incentive compatibility:

**H3-1:** There is potential political acceptance to execute PBB in Shiraz municipality.

**H3-2:** There is potential Managerial acceptance to execute PBB in Shiraz municipality.

In some governments people can have access to the details about PBB by internet. So the citizens can know daily government operation and undertakings and the organizations validity are presented simultaneously considering their operations in order to enable the budget policy makers respond the citizens better because they like the control led to the desired results:

**H3-3:** There is potential incentive compatibility to execute PBB in Shiraz municipality.

Another factor which is important in relation to execute the PBB is the legislator's, politicians', managers' and all organizational employees' views about the PBB profits; for instance, well managed income sources and organization expense lead to decrease the costs concerning the data process to be used by the managers or facilitate the relation between the users and related software or improve the personnel ability:

**H4:** PBB execution creates economic advantages for Shiraz municipality.

In the study first the PBB insufficiencies and challenges were reviewed by virtue of library studies; then by virtue of SHAH model (2004) the three essential factors to execute successfully PBB (Namely Ability, Acceptance and Authority in detail for related theoretical model) and the fourth factor, that is, 'Economic Advantage' are presented in order to assess the economic benefits.

The possibility of the PBB execution was assessed in 2011.

The universe of the case study was Shiraz metropolis including seven assistant departments and sixteen affiliated organizations.

## RESEARCH MODELS

Recent attentions to PBB have created some views about the effective factors on the successful system execution. Such complex of the views was presented in SHAH governmental department model. The model emphasizes on three effective factors in PBB execution: authority, ability and acceptance (Andrew, 2004). Another important factor in relation to PBB execution is the economic aspect.

The studies show that the interaction between the three factors defines the room to correct the PBB.

**The ability to execute PBB:** It is thought that the PBB execution would be unsuccessful because of low potential or organizational inability. The examinations and reports show that the three key organizational abilities for PBB are: Performance evaluation ability, Personnel ability and Technical abilities.

**The authority to execute PBB:** The second factor effective on PBB relates to the mechanisms available to the governments. If the budget policy makers have not the authority necessary to execute the PBB in different phases, the execution encounters with problem(s). There are three important authority dimensions: legal, procedural and organizational authority.

**The acceptance in relation to the PBB execution:** If some governmental authorities, department's heads and employees disagree with the reforms, it can be the greatest obstacle against the execution and performance evaluation ability.

If PBB is accepted by above groups, it will be executed high probably. As stated the authorities, managers and employees should believe that PBB is worthwhile to decrease the costs and achieve short and long term profits for the government and community in order to execute PBB successfully. The three dimensions of acceptance are necessary: Political acceptance, Managerial acceptance and Incentive compatibility.

**Economic advantage:** Another factor which is important in relation to execute the PBB is the legislator's, politicians', managers' and all organizational employees' views about the PBB profits; for instance, well managed income sources and organization expense lead to decrease the costs concerning the data process to be used by the managers or facilitate the relation between the users and related software or improve the personnel ability:

The variables of the study:

|                     |                                    |
|---------------------|------------------------------------|
| Essential variables | 1 - Authority                      |
|                     | 2 - Ability                        |
|                     | 3 - Acceptance                     |
|                     | 4 - Economic advantage             |
| Secondary variables | 1 - Performance evaluation ability |
|                     | 2 - Personnel ability              |
|                     | 3 - Technical ability              |
|                     | 4 - Legal Authority                |
|                     | 5 - Procedural Authority           |
|                     | 6 - Organizational Authority       |
|                     | 7 - Political acceptance           |
|                     | 8 - Managerial acceptance          |
|                     | 9 - Incentive compatibility        |
|                     | 10 - Economic advantage            |

In the study by virtue of SHAH model (2004) the three essential factors to execute successfully PBB (Namely ability, acceptance and authority in detail for

related theoretical model) including performance evaluation ability, personnel ability, technical ability, legal authority, procedural authority, organizational authority, political acceptance, managerial acceptance and incentive compatibility are presented. On the same basis a questionnaire was issued and a model was proposed to assess the possibility of PBB. The questionnaire included thirty questions defined and their validity was certified by the experts; then the final amount measure was defined by alpha Cronbach, the data entered into the Excel developed page and analyzed by SPSS software. Then the questions normality was tested in each group by single sample t-test and the abnormal questions were eliminated by virtue of their level of significance. Fifty questionnaires were given to a selected sample of the universe at first and during the experimental phase to be completed by the subjects and collected in order to examine the questionnaire stability. Having analyzed the data the stability coefficient was measured by alpha Cronbach test and the questionnaire alpha was 0.8597.

In the study the necessary data were collected, processed and analyzed by SPSS and Excel software in order to test the hypotheses:

- **Descriptive:** First the observations were described by descriptive statistics method including the Frequency and Agreement Tables, statistical figures and central and distributional tendency indexes
- **Inferential:** The observations were analyzed by inferential statistics methods and the alpha Cronbach tests were used to evaluate the validity of the questionnaire and single sample t-nonparametric test was used to certify or eliminate (If the deviation standard was higher than five percent) the essential hypotheses 1-4

The study universe included three economical, operational and technical groups into four subgroups of the subjects who knew the budget steps (Preparation and regulation, approval, execution and supervision) in Shiraz municipality as follows:

By virtue of the personnel office reports the universe included 524 employees into four following groups:

- High managers and administrative and financial assistants: 78 persons
- Financial management, head of accounting office and budget authorities: 112 persons
- Financial expert (issuing deeds, salary, wage, contracts, purchasing office, etc.): 201 persons
- Programming, training and data technology experts: 133 persons

## RESULT ANALYSIS

The descriptive study statistics including sexuality, age, the educational level and financial service experience were executed by SPSS software.

By virtue of the statistics 43.80% of the subjects were female and 56.20% were male. Also 32.20% of the subjects were 20-30, 40% were 30-40 and 27.70% were more than 40 years old. (26.90%) had less than five years finance experience, 38.50% had 5-10 years finance experience, 16.90% had 10-20 years finance experience and 17.70% had more than 20 years finance experience. (22.30%) of the subjects had doctorate or M.A. (or M.S.), 57.70% had B.A. (B.S.), 10.80% had Associate of Arts (or Science) and 9.20% had diploma or less degree.

We begin the data analysis by virtue of the presented descriptive statistics:

- H1:** There is the ability for PBB in Shiraz municipality.
- H1-1:** There is the potential for Performance evaluation ability for PBB goals in Shiraz municipality.
- H1-2:** There is the personnel ability necessary for PBB execution in Shiraz municipality.
- H1-3:** There is the technical ability for PBB execution in Shiraz municipality.

By virtue of Table 1 the result of H1-1 test has the significant rate less than five percent and the mean is less than 3. So in the subjects' views the operation assessment potential to achieve the PBB goals does not exist in actual conditions of Shiraz municipality. So the hypothesis is not certified. Also the result of H1-2 test has the significant rate less than 5% and the mean is less than 3 so in the subjects' views the personnel ability potential to execute PBB does not exist in actual conditions of Shiraz municipality. The result of H1-3 test has the significant rate less than 5% in all groups and the mean is less than 3. So in the subjects' views the technical ability to execute the PBB does not exist in actual conditions of Shiraz municipality. So the hypothesis is not certified.

So by virtue of three above hypotheses H1 namely the potential necessary to execute PBB in actual conditions in Shiraz municipality is not certified.

- H2:** There are the authorities necessary for PBB execution in Shiraz municipality.
- H2-1:** The legal authority necessary to execute PBB have been transferred to Shiraz municipality.
- H2-2:** The authority concerning the procedures to execute PBB exist in Shiraz municipality
- H2-3:** The organizational authority necessary to execute PBB have been transferred to Shiraz municipality sections and exist yet.

By virtue of Table 2 the result of H2-1 test has the significant rate less than 5% and has the mean more than 3. So in subjects' views the legal authority to

Table 1: Inferential test, hypothesis 1

| Effective factor<br>Group                         | Performance evaluation ability |                  |                  | Personnel ability |                  |                  | Technical ability |                  |                  |
|---|--------------------------------|------------------|------------------|-------------------|------------------|------------------|-------------------|------------------|------------------|
|   | Mean                           | t-statistic rate | Significant rate | Mean              | t-statistic rate | Significant rate | Mean              | t-statistic rate | Significant rate |
| Financial expert                                  | 2.714                          | -827/3           | 0                | 2.68              | -4.120           | 0                | 2.80              | -2.48            | 0.019            |
| Programming, training and data technology experts | 2.690                          | -288/3           | 0.002            | 2.70              | -4.699           | 0                | 2.40              | -4.95            | 0                |
| High manager & assistant                          | 2.780                          | -024/3           | 0.007            | 2.81              | -2.421           | 0.026            | 2.21              | -4.371           | 0                |
| Financial manager                                 | 2.750                          | -1.88            | 0.070            | 3.35              | 3.87             | 0.001            | 3.65              | 4.29             | 0                |
| Effective factor                                  | Mean                           |                  |                  | t-statistic rate  |                  |                  | Significant rate  |                  |                  |
| Performance evaluation ability                    | 2.6938                         |                  |                  | -6.363            |                  |                  | 0                 |                  |                  |
| Personnel ability                                 | 2.6730                         |                  |                  | -7.341            |                  |                  | 0.044             |                  |                  |
| Technical ability                                 | 2.4940                         |                  |                  | -80.06            |                  |                  | 0                 |                  |                  |

Table 2: Inferential test, hypothesis 2

| Effective factor<br>Group                         | Legal authority |                  |                  | Procedural authority |                  |                  | Organizational authority |                  |                  |
|---|-----------------|------------------|------------------|----------------------|------------------|------------------|--------------------------|------------------|------------------|
|   | Mean            | t-statistic rate | Significant rate | Mean                 | t-statistic rate | Significant rate | Mean                     | t-statistic rate | Significant rate |
| Financial expert                                  | 3.30            | 2.70             | 0.010            | -                    | -                | -                | -                        | -                | -                |
| Programming, training and data technology experts | 3.43            | 5.73             | 0                | -                    | -                | -                | -                        | -                | -                |
| High manager and assistant                        | 2.73            | -2.53            | 0.007            | 3.47                 | 4.025            | 0.001            | 3.51                     | 4.96             | 0                |
| Financial manager                                 | 2.75            | -1.88            | 0.070            | 3.35                 | 3.870            | 0.001            | 3.65                     | 4.29             | 0                |
| Effective factor                                  | Mean            |                  |                  | t-statistic rate     |                  |                  | Significant rate         |                  |                  |
| Legal authority                                   | 3.14            |                  |                  | 2.387                |                  |                  | 0.018                    |                  |                  |
| Procedural authority                              | 3.40            |                  |                  | 5.587                |                  |                  | 0                        |                  |                  |
| Organizational authority                          | 3.54            |                  |                  | 6.578                |                  |                  | 0                        |                  |                  |

Table 3: Inferential test, hypothesis 3

| Effective factor<br>Group                         | Political acceptance |                  |                  | Managerial acceptance |                  |                  | Incentive compatibility |                  |                  |
|---|----------------------|------------------|------------------|-----------------------|------------------|------------------|-------------------------|------------------|------------------|
|   | Mean                 | t-statistic rate | Significant rate | Mean                  | t-statistic rate | Significant rate | Mean                    | t-statistic rate | Significant rate |
| Financial expert                                  | 3.75                 | 10.820           | 0                | 3.50                  | 7.40             | 0                | -                       | -                | -                |
| Programming, training and data technology experts | 3.78                 | 13.200           | 0                | 3.55                  | 10.61            | 0                | 2.8                     | -3.83            | 0.008            |
| High manager & assistant                          | 3.73                 | 6.890            | 0                | 3.73                  | 3.68             | 0.002            | 2.8                     | -3.30            | 0.020            |
| Financial manager                                 | 3.77                 | 7.981            | 0                | 3.66                  | 7.36             | 0                | 2.8                     | -1.93            | 0.064            |
| Effective factor                                  | Mean                 |                  |                  | t-statistic rate      |                  |                  | Significant rate        |                  |                  |
| Political acceptance                              | 3.76                 |                  |                  | 19.764                |                  |                  | 0                       |                  |                  |
| Managerial acceptance                             | 3.59                 |                  |                  | 13.338                |                  |                  | 0                       |                  |                  |
| Incentive compatibility                           | 2.96                 |                  |                  | -0.748                |                  |                  | 0                       |                  |                  |

Table 4: Inferential test, hypothesis 4

| Group   | Effective factor   | Mean             | t-statistic rate | Significant rate |
|---|--------------------|------------------|------------------|------------------|
| Programming, training and data technology experts | Economic advantage | 3.90             | 12.46            | 0                |
| Financial expert                                  | Economic advantage | 3.85             | 13.13            | 0                |
| High manager & assistant                          | Economic advantage | 3.98             | 7.63             | 0                |
| Financial manager                                 | Economic advantage | 3.91             | 9.43             | 0                |
| Effective factor                                  | Mean               | t-statistic rate |                  | Significant rate |
| Economic advantage                                | 3.9                | 21.667           |                  | 0                |

execute PBB exist in Shiraz municipality and the hypothesis is certified. Also the result of H2-2 test has the significant rate less than five percent and the mean is more than 3 so in the subjects' views the potential authority concerning the procedures to execute PBB exists in Shiraz municipality. So the hypothesis is certified in the groups. By virtue of presented data the result of H2-3 test has the significant rate less than 5 percent and has the mean more than 3. So the hypothesis is certified in all groups and in subjects' views the organizational authority to execute PBB exists in Shiraz municipality.

So by virtue of three above hypotheses results H2 namely the potential authority necessary to execute PBB is certified.

**H3:** There is potential acceptance to execute PBB in Shiraz municipality.

**H3-1:** There is potential political acceptance to execute PBB in Shiraz municipality.

**H3-2:** There is potential Managerial acceptance to execute PBB in Shiraz municipality.

**H3-3:** There is potential incentive compatibility to execute PBB in Shiraz municipality.

By virtue of Table 3 the result of H3-1 test has the significant rate less than 5% and has the mean more than 3. So the hypothesis is certified in the groups and in the subjects' views the political acceptance to execute PBB exist in Shiraz municipality and the hypothesis is certified. Also the result of H3-2 test has the significant rate less than 5% and the mean is more than 3 so the hypothesis is certified in all groups and in the subjects' views the managerial acceptance to execute PBB exists in Shiraz municipality. So the hypothesis is certified. By virtue of the data the result of H3-3 test has the significant rate less than 5% and the mean less than 3. So the hypothesis is not certified in the groups and in the subjects' views the organizational acceptance to execute the PBB does not exist in Shiraz municipality.

So by virtue of the results of H3-1 and H3-2 the political acceptance and managerial acceptance of H3

to execute PBB is certified and by virtue of H3-3 in the subjects' views there is not the Incentive compatibility necessary to execute the PBB.

**H4:** PBB execution creates economic advantages for Shiraz municipality.

By virtue of the Table 4 the result of H4 has the significant rate less than 5% and the mean is less than 3. So in the subjects' views the PBB execution in Shiraz municipality creates economical advantage. So H4 is certified.

### CONCLUSION

By virtue of the studies in relation to H1 and the presence of the potential to execute PBB considering the performance evaluation ability, personnel ability and technical ability were not certified in H1-1, H1-2 and H1-3 generally the potential to execute the PBB was not certified; it is very important issue and it is necessary to have potentials to execute successfully the PBB. In relation to the authority appropriate to achieve the PBB goals the H2 and its secondary hypotheses related to legal, managerial authority and organizational authority the presence of such factors were certified to execute successfully PBB. In relation to the potential acceptance, H3 and its essential factors except Incentive compatibility, the political acceptance and managerial acceptance exist to execute PBB and it shows that it is necessary to know final goals and have different systems to create necessary motives in order to execute

successfully PBB. In relation to economical advantage because of PBB execution and related results H4 shows that all the subjects believe completely in the economical advantage.

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