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# The Factors Used to Create Performance-Based Budgeting: A Research on Turkey

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## Abstract

Performance-based budgeting (PBB) is the practice of developing flexible financial management tools to increase the efficiency and productivity of public institutions both in developed and developing countries such as Turkey. It can be seen from international literature gathered as a result of researches that developing countries have come a long way in developing performance-based budgeting activities. In developed economies, successful international institutions such as Organization for Economic Cooperation and Development (OECD) and International Monetary Fund (IMF) promote the implementation of performance-based budgeting for a developing world. Fiscal transparency, medium-term expenditure framework, and other institutional arrangements are factors effective in developing performance-based budgeting. Budget experts regard these factors as important factors, and the view that it is difficult to implement these prevails. Within the context of this theory, the main purpose of this study is to determine the preparation and implementation of performance-based budgeting in public institutions of developing countries such as Turkey, which has an important economy in the world, and to measure the perception levels of employees working in these institutions. As a result of the confirmatory factor analysis (CFA) based on the main findings of the study, goodness-of-fit values of the measurement model were found to be sufficient. Independent *t* test and one-way ANOVA analyses were conducted to find out the perception levels of the participants in the study. As a result of the analyses, significant differences were found between demographic features and perception levels.

**Keywords:** confirmatory factor analysis, performance-based budgeting, perception, fiscal transparency, Turkey

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## 1. Introduction

Performance-based budgeting (PBB) has been developed in many countries within the frame of a new administrative mentality based on the performance of public sector as of 1980s, which included primary objectives such as increasing the quality of public services, reinforcing decision-making processes by getting more information about the activities of the state, and ensuring accountability and fiscal transparency. With the aforementioned objectives, governments focused on the effective and productive use of public funding and, within this context, tended toward allocation of resources in line with the results reached through goods and services produced rather than information regarding the input in budget processes. Although it does not have only one accepted model in the world, performance-based budgeting, which is defined as a type of budgeting that associates resources with measurable objectives in the widest sense, has found area of implementation in many developed countries in various forms with its outcome-oriented mode of management. Within this context, while some countries followed a transition process that included all the public administration gradually, other countries allowed public administration to switch to the application in process on a volunteer basis [1].

New Zealand and Australia at the end of 1980s, Canada, Denmark, Finland, France, Holland, Sweden, England, and the USA in 1990s, and Austria, Germany, and Switzerland at the beginning of 2000s started various practices of performance-based management, budgeting, and reporting.

“The law no. 5018 on public financial management and control” issued at the end of 2003 in Turkey is about the efficient, economic, and effective use of public resources. With the efficient and effective use of resources, accountability and fiscal transparency will also increase in institutions. Performance-based budgeting practices started with the Article 9 of the Law no. 5018 on public financial management and control, which makes the statement that public institutions prepare their budgets in line with the mission, vision, strategic goals, and targets in strategic plans and based on performance.

The reasons for switching to performance-based budgeting system include public financial crises, inefficient use of public resources, increase in the amount and quality of public expenditures, rapid changes in technology, and the new mode of public administration [2].

With the development of democratic systems in the whole world, public services are performed in line with the needs of society. Accordingly, there has been an increase and variety in demands from administrators directed at public services. The increase in the expectations of the society for public services has led to an increase in public spending and tax load, which in turn made it imperative to ensure efficiency in the use of resources.

Strategic planning-oriented PBB model: the model makes it imperative for public institutions to prepare strategic plan, and these plans constitute the basis of preparing the budgets of public institution [3].

- Performance agreement-oriented PBB model: in this model in which it is not imperative to prepare strategic planning in terms of public institutions, performance agreements have

to be made with the top executives of the institution in order to be able to maximize the performance of employees.

- Budget format PBB model: unlike the other two models, no document is prepared to measure performance except the budget text in this model. Thus, the budget has information about only performance and allowance. In addition, there is no independent performance report.

Performance programs bring an output and result-oriented budgeting system to the forefront by making performance information available as well as fiscal information in the budget documents and thus bring fiscal transparency and accountability principles into force to which our new public financial administration system depends on [1].

The items in the questionnaire given to employees in this study were designed on four basic factors. Confirmatory factor analysis (CFA) analysis results show that the goodness-of-fit values of measurement model are sufficient. Significant differences were found between the genders and education levels of the participants in terms of performance-based budgeting practices level of perception.

## 2. Literature review

Some of the national and international literature studies about performance-based budgeting practices and researches and the key findings of these are explained below.

In Egeli et al.'s study [5], titled "Analysis of Critical Control Points of Strategic Planning Oriented Performance Based Budgeting System: The Applications of Turkey's Public Institutions," a general conclusion was reached that the system may not be effectively applied before the completion of all steps toward the performance-based budgeting within the framework of the results obtained from the critical control points and analysis of public institutions in Turkey [5].

According to Kim and Park's study [6] titled "Performance Budgeting in Korea," Korea is in the initial stages of implementing performance-based budgeting; it is therefore too early to form an assessment. However, it has been concluded that it should be noted that having introduced performance-based budgeting as one component within a broader range of comprehensive reforms has helped to lower resistance and resolve institutional problems [6].

Jordan and Hackbart's study [7], titled "The Goals and Implementation Success of State Performance Based Budgeting," concluded that accountability can be seen as a goal, rather than budget allocation, makes a stronger foundation for determining performance-based budget success [7].

In Çildir's study [8] titled "An Assessment of United Kingdom's Performance Based Budgeting System," since the application of Public Service Agreement started in England in 1998, a lot of changes have occurred. Each expenditure analysis underwent some changes in terms of their structure. Ever since it began to be applied, the Public Services Agreement framework has

guided the government in terms of the increases in public expenditures. The Public Services Agreement places importance on focusing on the data that create a problem for those who make use of management inputs and public services, prioritizing public services that should specifically be conducted and providing more flexibility [8].

In their study titled "Theoretical and Practical Problems of Performance-Based Budgeting System," Çelebi and Kovancılar [9] stated that advantages of performance-based budget system in terms of public fiscal management were effective in their being preferred by other countries. However, it was also stated that the aforementioned system included some theoretical and practical problems and difficulties within the structure of the system [9].

In their study titled "Performance-Based Budgeting Process in Turkey: Kocaeli University Case," Badem et al. [10] concluded that if the performance-based budgeting system is fully applied in Turkey, an awareness of transparency and calling to account will be developed in the society; policies and strategic goals will be evaluated by everyone; and the performances and policies of top executives in both the government and the public institutions will become questionable. In addition, by means of PBB, institutions' expenditures will be questioned through performance auditing, and it will be possible to find out whether public resources are used economically and effectively. In terms of Turkey, time, interest, care, raising an awareness of questioning in the public, and increasing the legal sanctions of this are evaluated as what is needed for a full implementation of PBB [10].

In Liu's study [4] titled "What Drives Performance Budgeting to Perform? A Survey Examination in Taiwan," it was found that while there was high consensus over international experiences in Taiwan, respondents in different categories featured slightly different attitude. The survey results revealed that experts in academia were more affirmative toward auxiliary institutional arrangements for performance budgeting compared to the practitioners in selective government's agencies [4].

Demirel's [11] study titled "The Financial Aspect of Performance: Performance Based Budget" aimed to ensure fiscal transparency and accountability through performance-based budgeting. Performance-based budgeting, which is indispensable in popularizing performance-based practices in public administration, is also closely related with a great number of concepts. One of these concepts, strategic planning, contributes to the preparation process of performance-based budgeting through missions which clearly reveal the duties and functions of the institution with future visions. Performance programs and indicators reveal the adaptation capacity of an institution to specified strategies. Announcement of activity reports prepares the basis for a healthy comparison of past and future results [11].

In their study titled "Performance-Based Budget Arrangements, the Implementation Process and Advancements in Turkey," Karacan and Yazıcı [12] stated that the Law no. 5018 brought radical changes in the financial management and control system, the findings, evaluations, and suggestions related to the ownership, coordination, role of the parliament, capacity, calendar, reporting, and budget connections in Turkey undergone during the 10-year period. They stated that the public management sector is a sector where the outputs and results are seen in the long term. They also added that the best practices are experienced for long years

in planning and nearly 30 years in management and PBB. As a result, when the best practices and other applications in the world are considered, they concluded that we can be optimistic about the future of the PBB in Turkey [12].

In Ciubotaru and Hincu's study [13], titled "Implementing Performance-Based Budgeting in Republic of Moldova," the researchers stated that the analysis of performance indicators shows the linkages between the policies, and budgeting, as well as budgeting performance in compliance with European principles in this area [13].

### **3. Budget reform in Turkey Law no. 5018**

Public Financial Management and Control Law no. 5018 foresees public administrations to prepare strategic plans which include their medium- and long-term objectives, basic principles and policies, targets and priorities, performance criteria, the methods to reach these, and their resource distributions and also to prepare these in line with and based on the missions, visions, strategic goals, and targets included in the strategic plans of budgets [1].

Public administrations prepare strategic plans with participatory methods in order to create future missions and visions, to find out strategic objectives and measurable targets, to measure performance in line with present indicators, and to follow and evaluate this process within the framework of development plans, programs, applicable law, and adapted basic principles. Public institutions prepare their budgets in line with the mission, vision, strategic goal, and targets in their strategic plans and also based on performance. The Ministry of Finance is authorized to audit the suitability of public institutions' budgets to the performance indicators in strategic plans and other issues related with the activities of institutions and their performance-based budgeting. Performance indicators, which are determined by the Ministry of Finance, the under secretariat of state planning organization, and the relevant public administration appear in the budgets of institutions. Performance audits take place within the framework of these indicators [14].

Performance planning has been predicted to take place through strategic plan. Strategic plan, according to its definition in Article 3 of Law no. 5018, refers to the plan which includes medium- and long-term goals, basic principles and policies, objectives and priorities, and performance indicators of public administrations, as well as the methods and the resource distribution to achieve these. In the legislation, the period of strategic plans has been predicted as a period of 5 years within the scope of regulations related to the period, updating and renewing. Updating of strategic plans has been made possible only 2 years after they have been implemented. Updating has been defined as quantitative changes in goals without changing the mission, vision, and goals of the strategic plan [15].

Performance-based budgeting, proposed by Law no. 5018, has been defined as the kind of budgeting that shows the information about what public institutions will do with the budget allocated to them. The basic expectations of countries which have adapted or which are about to adapt performance-based budgeting from this system are classified as follows [16]:

- Effective distribution and use of resources,
- Establishing a mode of administration based on targets,
- Reinforcement of the processes of preparing, implementing, and auditing a budget,
- Increasing the quality of service, and
- Ensuring fiscal transparency.

Fiscal transparency allows a better analysis and assessment of the government's budget policies. This in turn allows development of programs and more efficient use of resources. Thus, one of the eventual objectives of reforms in budget systems, maybe the most important, is fiscal transparency [17].

The concept of fiscal transparency entered into application with performance-based budgeting. Fiscal transparency makes it obligatory to provide flow of information to those concerned and the public about the performances of public institutions. To do this, public institutions prepare activity reports, and they present these for public use in electronic or printed version. The objective of fiscal transparency is to prevent exploitation and waste in public resources. However, activity reports prepared by public institutions cannot provide the expected benefits. In addition to having too much information, these reports are far from reflecting the performance of public institutions [18].

Performance-based budgeting assumes that all the officers, administrators, and executives in the process have the necessary skills and equipment. A full implementation of a real performance-based budgeting will take years, and it requires administrative capacity. Most of the countries, especially developing countries, seem to be deprived of institutional capacity in this sense. Within this context, the perception levels of employees working in institutions and departments, in which it is essential to implement performance-based budgeting, will be examined. In addition, employees' fiscal transparency and medium-term expenditure frameworks and their views about other factors will be analyzed.

#### **4. Research design**

Fiscal transparency, medium-term expenditure framework, and other institutional arrangements are factors effective in developing performance-based budgeting. Budget experts regard these factors as important factors, and the view that it is difficult to implement these prevails. Within the context of this theory, the main purpose of this study is to determine the preparation and implementation of performance-based budgeting in public institutions of developing countries such as Turkey, which has an important economy in the world, and to measure the perception levels of employees working in these institutions. In the study, a questionnaire was given to employees of public institutions in Turkey through question forms. The question forms were prepared by using a study from Taiwan (Liu [4]), which is a developing country like Turkey. The question forms were designed on four basic factors. The first factor is about measuring the comprehension or perception level of performance-based budgeting activity. The second factor is about the role of performance-based budgeting

on fiscal transparency. The third factor is about how performance-based budgeting influences medium-term expenditure frameworks. The fourth factor consists of elements that in performance-based budgeting implementation, other institutional organizations may be necessary. The factors in the question forms were formed with five Likert scale. The universe of the study consists of institutions within the body of the Ministry of Finance, which implement performance-based budgeting, universities, provincial special administrations, and municipalities, which have a level of information about performance-based budgeting practices.

Since the number of staff working in institutions which have performance-based budgeting is unknown and it was not possible to reach the employees in the universe and due to limitations such as the cost of data collection and time, sampling was thought to be appropriate. The exact number of the employees in the universe of this study is unknown. Thus, the following formula was used to find out the sample size [19]:

$$n = \frac{z^2(pq)}{e^2} \quad (1)$$

In this formula,

$n$  is the sample size,

$p$  is the incidence of the phenomenon examined, the probability of occurrence (50%),

$q$  is the non-incidence of the phenomenon examined, the probability of non-occurrence ( $1 - p$ ),

$e$  is the level of acceptable error ( $\pm 5\%$ ), and

$z$  is the standard error within the specified confidence interval (95%).

Since the universe is unknown in this study, the incidence ( $p$ ) and non-incidence ( $q$ ) of the phenomenon examined was taken as 0.5. Error tolerance was accepted as 0.05, while the level of confidence was accepted as 95%. When these values are inserted in the formula, the sample size was calculated as follows:

$$\frac{1.96^2(0.5 \times 0.5)}{0.05^2} = 385 \quad (2)$$

The sample size consists of 385 people. In this study, the first factor is about measuring the comprehension or perception level of performance-based budgeting activity. The second factor is about the role of performance-based budgeting on fiscal transparency. The third factor is about how performance-based budgeting influences medium-term expenditure frameworks. The fourth factor consists of elements that in performance-based budgeting implementation, other institutional organizations may be necessary. After the sample size was determined as 385, in order to reach the desired sample size, samples were gathered from different public institutions that use performance-based budgeting and 416 questionnaire data were obtained for analysis from different cities and public institutions as much as possible. The confirmatory factor analysis (CFA) method was used to test the suitability of each dimension of the factors used in performance-based budgeting practice in the study.

The confirmatory factor analysis (CFA) is an analysis method that is frequently used in developing measurement models, and it provides significant conveniences. The CFA is used in both scale development and validity analysis as well as in the verification of a present structure [20].

## 5. Empirical results

In terms of the demographic features of the data obtained from the study, data about the individuals' genders, educational status, occupational experiences, and working positions were collected, and the data obtained were shown in **Table 1** with frequency and percentages.

According to the descriptive analysis results, 66% of the participants are males, while 34% are females. In terms of education, it can be seen that 72% are undergraduates, while 17% have master's degree. In terms of professional experience, 57% have 1–5 years of professional experience, 21% have 6–10 years of professional experience, 9% have 11–15 years of professional experience, and 13% have 16 and over years of professional experience. About 41% of the participants are staff directly responsible for the performance-based budgeting activities, 6% are executives, 7% are auditors, and 46% are assistant qualified personnel for performance-based budgeting activities. In **Table 2**, sub-dimensions related to performance-based budgeting are given.

The confirmatory factor analysis (CFA) was conducted for the performance-based budgeting scale used in the study (**Figure 1**). As a result of CFA, goodness-of-fit values such as Chi-square statistics ( $\chi^2$ ), Chi-square/Degree of freedom ( $\chi^2/df$ ), root mean square error of approximation (RMSEA), comparative fit index (CFI), goodness-of-fit index (GFI), and AGFI were checked first, and the fitness of the model was found.

As a result of CFA, goodness-of-fit values of the measurement model were found to be sufficient ( $\chi^2 = 227.360$ ;  $sd = 84$ ;  $\chi^2/sd = 2.707$ ;  $CFI = 0.87$ ;  $GFI = 0.93$ ;  $AGFI = 0.89$ ;  $RMSEA = 0.067$ ). The most commonly used goodness-of-fit indices are Chi-square statistics ( $\chi^2$ ), Chi-square/degree of freedom ( $\chi^2/df$ ), RMSEA (root mean square error of approximation) and CFI (comparative fit index), goodness-of-fit index (GFI), and adjusted goodness of fit. ( $\chi^2/df$ ), an acceptable model fit value less than 3, a value equal to or less than 0.05 for RMSEA means perfect fit and a value equal to or less than 0.08 means acceptable fit. For AGFI, GFI, and CFI, values equal to and more than show perfect fit, while values between 0.85 and 0.95 show acceptable fit [21–23]. In addition, according to another method that examines whether discriminant validity is met, correlation coefficients between the specified dimensions differ between  $-0.110$  and  $0.602$ . Since these values are less than 80, it can be said that discriminant validity is met [24].

Independent  $t$  test and one-way ANOVA analysis were used to show whether the perceptions of the participants differed on performance-based budgeting.

In **Table 3**, significant difference was found between female employees and male employees in terms of *level of perception about performance budgeting* [ $t_{(414)} = -2.145$ ;  $P < 0.05$ ]. When the

Demographic features	Frequency	Percentage
<b>Gender</b>		
Female	143	34
Male	273	66
<b>Education</b>		
High school	21	5
Two-year degree	21	5
Undergraduate	299	72
Master's	72	17
Doctorate	2	1
<b>Professional experience</b>		
1–5 years	238	57
6–10 years	87	21
11–15 years	37	9
16 years and above	54	13
<b>Professional field</b>		
Executive	25	6
Staff directly responsible for the performance-based budgeting activities	171	41
Auditor	29	7
Assistant qualified personnel for performance-based budgeting activities	191	46

**Table 1.** Results of demographic features.

reason for this difference was examined, it was found that when compared with male employees ( $\mu = 3.68$ ;  $sd = 0.876$ ), female employees ( $\mu = 3.48$ ;  $sd = 0.933$ ) agreed less with the thought that their level of perception about performance-based budgeting was insufficient.

Similarly, when the Independent  $t$  test results about the expression “Ministry of Finance should develop medium-term expenditure ceilings in all ministries for performance-based budgeting to be successful” were analyzed in terms of gender, a significant difference was found between female employees and male employees in terms of this expression ( $t_{(414)} = 3.067$ ;  $P < 0.005$ ). When the reason for this difference was examined, it was found that when compared with male employees ( $\mu = 3.23$ ;  $sd = 0.841$ ), female employees ( $\mu = 3.13$ ;  $sd = 0.887$ ) agreed less with the thought that the Ministry of Finance should develop medium-term expenditure ceilings in all ministries for performance-based budgeting to be successful.

Under the assumption that the data obtained from the employees were homogeneous, when the ANOVA analysis results were examined in terms of level of education in **Table 4**,

<b>Level of perception</b>	A1	Your level of perception about performance-based budgeting
	A2	Your opinion about the implementation of performance-based budgeting in OECD countries, in which Turkey is a member
	A3	Your opinion about the implementation of performance-based budgeting in Turkey
<b>Fiscal transparency</b>	B1	Public sector should explain the policies that will be implemented clearly to the public for performance-based budgeting to be successful
	B2	The state's asset-liability management policy should be clearly defined for performance-based budgeting to be successful
	B3	Same policies should be used in preparing fiscal reports for performance-based budgeting to be successful
	B4	The state's activities and finance should be audited with transparency by national audit firms for performance-based budgeting to be successful
<b>Medium-term expenditure frameworks</b>	C1	Medium-term income and expenditure frameworks should be prepared with macroeconomic models for performance-based budgeting to be successful
	C2	All ministries should develop a medium-term expenditure ceiling to present to the Ministry of Finance for performance-based budgeting to be successful
	C3	Ministry of Finance should develop medium-term expenditure ceilings in all ministries for performance-based budgeting to be successful
	C4	Ministry of Finance should hold regular meetings periodically for all ministries about medium-term expenditure ceilings for performance-based budgeting to be successful
<b>Other institutional organizations</b>	D1	The support and assurance of agency leaders are essential for performance-based budgeting to be successful
	D2	Professional skills of employees of the institution are essential for performance-based budgeting to be successful
	D3	A customer-oriented organizational culture of the institution is essential for performance-based budgeting to be successful
	D4	Performance evaluation involving citizen participation is essential for performance-based budgeting to be successful
<b>Staff information</b>	E1	Gender?
	E2	Level of education?
	E3	Professional experience with budgeting activities?
	E4	Professional field (work position)

**Table 2.** Distribution of items in sub-dimensions.

a significant difference was found between participants with undergraduate and master's degree and participants with doctorate degree [ $F_{(4-411)} = 3.459$ ;  $P < 0.05$ ] in terms of "opinion about the implementation of performance-based budgeting in OECD countries, in which Turkey is a member." When the reason for this difference was analyzed according to the Tukey test, it was found that compared with employees with undergraduate degree ( $\mu = 3.14$ )

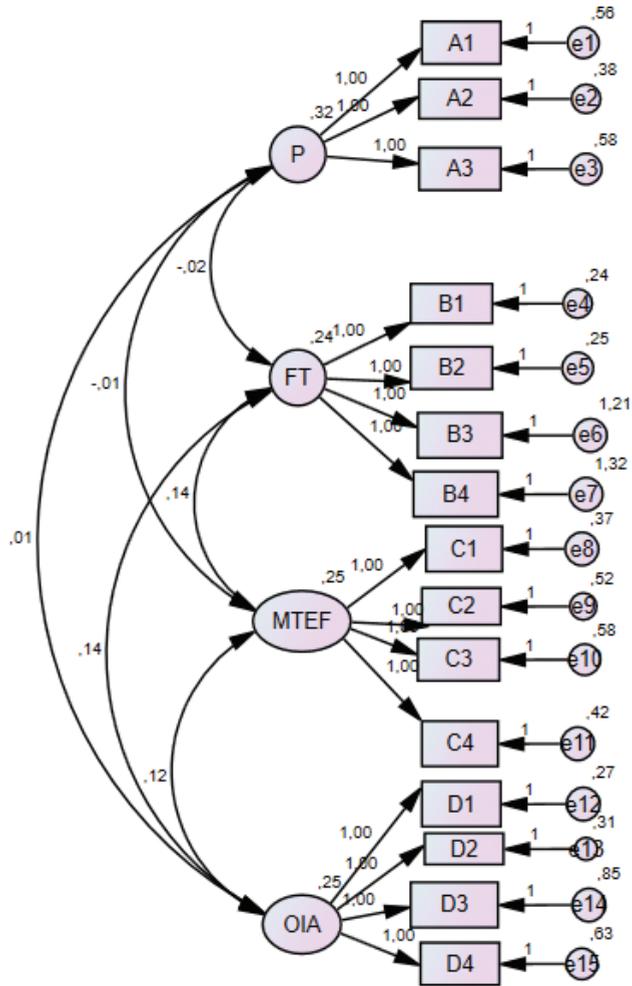


Figure 1. General CFA model goodness of fit.

and employees with master’s degree ( $\mu = 3.14$ ), employees with doctorate degree ( $\mu = 5$ ) thought that the implementation of performance-based budgeting in Organization for Economic Cooperation and Development (OECD) countries, in which Turkey is a member, is very sufficient.

In terms of Turkey’s performance-based budgeting implementations, significant differences were found between both high school graduate employees and employees with undergraduate and master’s degree and between employees with master’s degree and employees with doctorate degree [ $F_{(4-411)} = 6.238; P < 0.01$ ]. According to Tukey test results, which was conducted to show the reason of differences, it was found that when high school graduate

Items		Levene's test for equality of variances				
		F	Sig.	t	df	Sig. (2-tailed)
Your level of perception about performance budgeting	Equal variances assumed	1.450	0.229	-2.188	414	0.029
	Equal variances not assumed			-2.145*	273.037	0.033
Ministry of Finance should develop medium-term expenditure ceilings in all ministries for performance-based budgeting to be successful	Equal variances assumed	22.898	0.000	2.876	414	0.004
	Equal variances not assumed			3.067	343.883	0.002
	Equal variances not assumed			0.114	314.385	0.910

\* $P < 0.05$ ;  $N = 414$ .

**Table 3.** Independent  $t$  test statistics of performance-based budgeting in terms of gender.

employees ( $\mu = 3.52$ ) were compared with employees with undergraduate degree ( $\mu = 2.76$ ) and master's degree ( $\mu = 2.76$ ), they thought that performance-based budgeting implementations in Turkey are very sufficient. In addition, employees with doctorate degree ( $\mu = 3.50$ ) rather than employees with master's degree ( $\mu = 2.76$ ) accept that performance-based budgeting implementations in Turkey are more sufficient.

As can be seen from **Table 5**, "level of perception about performance-based budgeting" differs in terms of work position [ $F_{(4-412)} = 6.410$ ;  $P < 0.01$ ]. According to the Tukey test, the reason for the difference is the fact that the staff directly responsible for performance-based budgeting activities ( $\mu = 3.73$ ) believe that their level of perception about performance-based budgeting is more sufficient when compared with assistant qualified personnel for performance-based budgeting activities ( $\mu = 3.33$ ).

On the other hand, "opinion about the implementation of performance-based budgeting in Turkey" also differs in terms of work position [ $F_{(4-412)} = 2.631$ ;  $P < 0.05$ ]. According to the Tukey test, the reason for the difference is the fact that the staff directly responsible for performance-based budgeting activities ( $\mu = 2.65$ ) think that the implementation of performance-based budgeting in Turkey is more sufficient when compared with assistant qualified personnel for performance-based budgeting activities ( $\mu = 2.92$ ).

The perceptions about the expression "Ministry of Finance should develop medium-term expenditure ceilings in all ministries for performance-based budgeting to be successful" also differ in terms of work position [ $F_{(4-412)} = 3.091$ ;  $P < 0.05$ ]. When Tukey test results are examined, the reason for this difference is the fact that auditors ( $\mu = 3.31$ ) agree with this view less than assistant qualified personnel for performance-based budgeting activities ( $\mu = 3.81$ ).

Finally, the perceptions about the expression "Performance evaluation involving citizen participation is essential for performance-based budgeting to be successful" also differ in terms of work position [ $F_{(4-412)} = 6.065$ ;  $P < 0.05$ ]. When Tukey test results are examined, the reason for this difference is the fact the auditors ( $\mu = 3.20$ ) agree with the approach less when compared with executives ( $\mu = 3.96$ ), staff directly responsible for performance-based budgeting

ANOVA						
		Sum of squares	df	Mean square	F	Sig.
Your opinion about the implementation of performance-based budgeting in OECD countries, in which Turkey is a member	Between groups	9940	4	2.485	3.459	0.009
	Within groups	295.288	411	0.718		
	Total	305.228	415			
Your opinion about the implementation of performance-based budgeting in Turkey	Between groups	22.966	4	5.741	6.238	0.000
	Within groups	378.262	411	0.920		
	Total	401.228	415			

**Table 4.** Statistics of one-way ANOVA for education level.

ANOVA						
	Sum of squares	df	Mean square	F	Sig.	
Your level of perception about performance-based budgeting	Between groups	15.394	3	5.131	6.410	0.000
	Within groups	329.828	412	0.801		
	Total	345.221	415			
Your opinion about the implementation of performance-based budgeting in Turkey	Between groups	7.541	3	2.514	2.631	0.050
	Within groups	393.687	412	0.956		
	Total	401.228	415			
	Between groups	605.186	412	1.469		
	Within groups	607.962	415			
	Total	356.565	412	0.865		
Ministry of Finance should develop medium-term expenditure ceilings in all ministries for performance-based budgeting to be successful	Between groups	8970	3	2.990	3.091	0.027
	Within groups	398.509	412	0.967		
	Total	407.478	415			
Performance evaluation involving citizen participation is essential for performance-based budgeting to be successful	Between groups	18.191	3	6.064	6.065	0.000
	Within groups	411.941	412	1.000		
	Total	430.132	415			

Table 5. Statistics of one-way ANOVA for work position.

activities ( $\mu = 4.02$ ) and assistant qualified personnel for performance-based budgeting activities ( $\mu = 3.96$ ).

No differences were found in other expressions about performance-based budgeting in terms of gender, level of education, work position, and professional experience.

## 6. Conclusion and evaluations

According to key findings obtained as a result of the study, the confirmatory factor analysis showed that goodness-of-fit values were sufficient for the measurement model. Independent  $t$  test and one-way ANOVA analysis were conducted to show whether the perception levels of the participants differed. According to the findings, a significant difference was found between female employees and male employees in terms of the perception levels about performance-based budgeting. When the Independent  $t$  test results were examined about the expression "Ministry of Finance should develop medium-term expenditure ceilings in all ministries for performance-based budgeting to be successful," significant difference was found between female employees and male employees in terms of this expression. When the ANOVA analysis results were examined in terms of the level of education, significant difference was found between participants with undergraduate and master's degree and participants with doctorate degree in terms of "opinion about the implementation of performance-based budgeting in OECD countries, in which Turkey is a member." Perception levels about performance-based budgeting differ in terms of work position.

In terms of Turkey's performance-based budgeting implementations, significant differences were found between both high school graduate employees and employees with undergraduate and master's degree and between employees with master's degree and employees with doctorate degree. Finally, perceptions about the expression "Performance evaluation involving citizen participation is essential for performance-based budgeting to be successful" also differed in terms of work position.

No differences were found in other expressions about performance-based budgeting in terms of gender, level of education, work position, and professional experience.

Importance should be attached to performance-based budgeting in public institutions, and institutions should organize meetings and briefings to emphasize the importance of performance-based budgeting. Especially at the end of the year, expenditures of institutions should be presented online in detail in terms of transparency and accountability. Public audition should be made independent, and its activities should be increased. Legislation should be developed for these. Performance-based wage for employees will increase the efficiency of performance-based budgeting. It is also thought that public institutions should be audited by a national audit firm in terms of fiscal transparency. It has been stated that only the necessities of the legislation are realized in public institutions within the context of performance-based budgeting. In terms of medium-term expenditure frameworks, in case of a change in the policies of the institution, institutions should be able to update their activities and expenditure

frameworks, and there should not be strict rules about updates. Performance-based budgeting activities should be seen not as written works on documents, but as policies with which institutions can realize their missions, analyze their visions, and be eager about providing service. At this stage, it seems important both to adopt the process and to control it with audit mechanisms.

## Author details

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