

Implementation of performance-based budgeting and accrual accounting in public organizations in Iraq

Mohammad Kashanipour, Mohammad Nadiri*, Gholamhossein Moharrampour, Ahmed Baher

Faculty of Management and Accounting, Farabi School, University of Tehran, Tehran, Iran

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Abstract

The purpose of this research is to investigate the current state of budgeting and accounting in Iraqi public organizations and develop a conceptual framework and model for the implementation of performance-based budgeting and accrual accounting in these organizations. The required data were collected through an open-ended questionnaire and the Delphi technique, and qualitative content analysis was used to identify the requirements for the implementation of performance-based budgeting and accrual accounting in Iraq. The population consisted of faculty members, senior managers, financial managers, and financial and budget experts in Iraqi public organizations over the period 2021–2022. Using purposive sampling, 65 individuals were selected as the sample. Descriptive data were analyzed using measures of central tendency and dispersion, and the validity and reliability of the instrument were assessed through face validity and Cronbach's alpha. The results indicated the absence of performance-based budgeting and accrual accounting in Iraqi public organizations, and conceptual frameworks and models are proposed for the implementation of these systems.

Keywords: Performance-based Budgeting, Accrual Accounting, Iraqi Public Organizations, Conceptual Model
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1 Introduction

The economic, political, and social developments of the 21st century require governments to transform their planning, decision-making, and management systems and make use of accounting information for optimal allocation of their limited resources. The use of new budgeting and accounting methods not only facilitates public service and prevents misuse or waste of public funds, but is also effective in promoting social and economic goals, and can be used by governments to optimally allocate national resources among these goals. Performance-based budgeting and accrual accounting are effective tools for providing the information needed for decision-making about the resources and activities of organizations, and are considered key elements in improving public financial management in both developed and developing countries.

A budget is an estimation of expenses and revenues over a specific period of time [20]. Budgeting is the process of preparing a budget in order to plan for revenues and expenses in an upcoming period [5]. In general, budgeting systems are classified into performance-based and non-performance-based. Non-performance-based budgeting systems

*Corresponding author

Email addresses: kashanipour@ut.ac.ir (Mohammad Kashanipour), m.nadiri@ut.ac.ir (Mohammad Nadiri), moharrampor@ut.ac.ir (Gholamhossein Moharrampour), ahmed.baher@ut.ac.ir (Ahmed Baher)

only control where and how funds are spent, without any clear link between funds, expenses, and the outcomes of programs and activities, and with effectiveness shrouded in uncertainty. In contrast, performance-based budgeting systems clearly link strategic long-term goals with the organization's annual performance targets and the anticipated costs to achieve them.

Budgeting based on public expenditure management emphasizes three outcomes, i.e. allocative efficiency, aggregate fiscal discipline, and operational efficiency, and performance-based budgeting has been proposed as an effective way to achieve these goals [36]. Performance-based budgeting can provide a framework to overcome the decision-making problems and weaknesses of public finance by linking policies to visions, plans to goals, and resources to expenditures [13].

The purpose of accounting is to prepare and provide the information that is required for sound decision making. Accrual-basis accounting provides a better picture of the financial performance, financial position, and flexibility of public organizations compared to cash-basis accounting. Accrual-basis accounting reports realized revenue and incurred expenses for a fiscal period, which plays a significant role in improving accountability and informing citizens about the realities and operations of public organizations. The use of the accrual basis in government accounting and reporting enables citizens to assess the adequacy of the revenues to cover the costs of public services in a given period [14].

The traditional way of budgeting in Iraq cannot ensure optimal allocation of resources for various reasons such as the inability to provide sufficient information about spending results and the effectiveness and efficiency of programs, and the inability to trace funds and expenditures to the target community or to program outcomes. To achieve the goals stipulated in the country's vision for economic, political, social, and cultural growth and development, the current budgeting system should inevitably be reformed and shift toward modern budgeting approaches. In addition, the conventional method of cash-basis government accounting in Iraq cannot provide sufficient information about the financial performance, position, and flexibility of public organizations, thus requiring a shift toward accrual accounting.

The present research investigates the current state of budgeting and accounting in Iraqi public organizations, and provides a conceptual model as a step towards reforming these systems.

2 Theoretical Framework

2.1 Performance-based Budgeting

The annual government budget includes a forecast of revenues and funds and an estimation of expenses needed to perform specific operations and achieve certain goals in a given period. Budgeting is the process of planning, adopting, executing, monitoring, and auditing the fiscal program for the government and allocating finite resources to the prioritized needs [11]. Budgeting systems emphasize the need to ensure compliance with rules and regulations as well as annual budget limits, maintain economic stability, and increase productivity through more effective and efficient service delivery [17]. A key priority in economic reform is budgeting and resource allocation in public organizations. Public organizations often use traditional budgeting systems that do not provide any information about expenses and the efficiency and effectiveness of programs. These systems have short-term horizons, do not maintain expenses in long-term accounts, and undermine management's ability to achieve budgetary goals [19].

Performance-based budgeting refers to public sector funding mechanisms and processes designed to strengthen the link between funding and results through systematic use of performance information [35]. It is a form of budgeting that links allocated funds to measurable results and focuses on accountability for outputs and outcomes [12].

2.1.1 Goals of performance-based budgeting

Performance-based budgeting aims to improve the efficiency and effectiveness of public expenditure by linking the funding of public organizations to their results [34]. The main elements of a performance budget are: measurable targets; strategies; performance plans; performance measures; prioritization and allocation of resources; and collection, monitoring, evaluation, and reporting of results.

The ultimate goal of performance-based budgeting is to help decision making regarding the allocation and commitment of government resources based on measurable outcomes that reflect the expected results of the organization. Therefore, performance-based budgeting pursues the following objectives [33]:

1. Providing a sound basis for resource decisions;

2. Setting measurable targets that can be met through the specific budget allocation;
3. Focusing on the most important decisions regarding the issues and challenges that the organization is facing;
4. Creating a rational process for budgetary decision making that is directly linked to planning, implementation, control, evaluation, and performance reports;
5. Linking the budget to performance targets;
6. Providing measurable information to control the progress of programs against the allocated budget;
7. Providing state-of-the-art tools based on results (not just data and outputs) to assure the society that national resources are used to meet the essential needs of the society;
8. Providing incentives for performance management based on continuous improvement;
9. Providing the basis for greater accountability for the use of national resources;
10. Transforming the budgeting process from a purely political one to a process that involves a more objective, rational, and economic basis for budgetary decision making.

2.1.2 Benefits of performance-based budgeting

The benefits of performance-based budgeting can be summarized as follows [40]:

1. Improving budgetary decision making;
2. Allowing for effective monitoring of budget execution;
3. Facilitating the revision of the budget in all stages of the budgetary cycle, especially legislative approval;
4. Lack of focus on cost estimates;
5. Improving the relations between the government and the general public through the dissemination of clear information about public programs;
6. Enhancing the quality of public spending.

2.2 Accrual Accounting

Accounting is an information system that provides the necessary information for sound decision making by recording, summarizing, and reporting financial transactions. The outputs of the accounting system are financial and management reports that are made available to internal and external users.

Accountability and usefulness are two fundamental features of government accounting and financial reporting that are crucial to decision making. These features provide a basis for the financial reporting goals of the central government. Since the government must be accountable for the integrity and performance of its governance, it must provide useful information to evaluate its accountability. Accounting supports financial reporting, which is a prerequisite for government accountability and performance evaluation. Accounting and financial reporting has a special role in ensuring compliance with laws and regulations related to the financing of activities and provide useful information about expenses, assets, and liabilities. Although financial reporting is not the only source of information used in decision making and accountability and, in and of itself, cannot ensure the efficiency of government operations, it can play a useful role in achieving the goals of government financial reporting [32].

The government accounting system should record and report the financial events of public entities in accordance with financial reporting laws and regulations. The process of recording and incorporating financial events into financial statements is referred to as recognition. In fact, recognition can be used to link financial events to financial statements. According to accounting theories, common forms of recognition in financial statements include cash, modified cash, mixed, modified accrual, and accrual.

Accrual basis accounting is the system of recording and reporting that recognizes revenue and matching expenses when they are generated. That is, under this system, revenues are recognized when earned and expenses are recognized when incurred [11].

2.2.1 Accrual accounting in the public sector

The main factors influencing the use of accrual accounting in the public sector are:

1. Public sector management reforms: The use of accrual accounting in the public sector has been an inevitable response to public management reforms aimed at creating a performance-based or out-put-based management system that focuses on improving the efficiency, effectiveness, and accountability in the public sector while increasing managerial discretion in spending resources [27].
2. Shortcomings and drawbacks of cash basis accounting: Cash basis accounting does not provide a complete picture of the financial position and performance of organizations as it primarily focuses on cash flows, while accrual accounting also accounts for other cash information that are necessary for effective cash management. By using the accrual basis, many of the shortcomings and drawbacks of cash accounting can be overcome [16].
3. More effective management of assets and liabilities: Under accrual accounting, all assets and liabilities are recognized. It must be noted that optimal management of assets is vital in the public sector because many important assets are long-term infrastructures that are crucial to economic growth. In addition, accrual accounting provides useful information about the actual amount of government debt [15].
4. Increased comparability and accuracy of information: The use of accrual accounting by the government can harmonize accounting systems at all levels of the public sector [27]. Moreover, according to the International Monetary Fund [16], the use of accrual accounting in forecasting and preparation of public sector financial statements and macroeconomic indicators can increase information consistency and comparability across countries, while increasing the accuracy of national accounts and economic forecasts.
5. Intergenerational equity: Intergenerational equity is an important concept in public sector fiscal policies and captures the extent to which governments pass on their present expenses to future generations. Public sector accrual accounting provides a long-term perspective in judging the consequences of the government's fiscal policies [1].
6. Public-private competition: Due to hidden costs, the prices of public goods and services are often artificially lower than the same goods and services provided by the private sector. While the cash basis does not account for these costs, accrual accounting includes all costs, including depreciation, allocated to these goods and services [24].
7. Financial crisis: A study of New Zealand's experience with accrual accounting revealed that this country was in a financial crisis, which prompted the government to implement major economic reforms, including a shift toward accrual accounting [23].
8. Greater transparency and the difficulty of manipulating financial information: Governments may have incentives to provide an unrealistic picture of their financial position and performance. After the Economic and Monetary Union (EMU) was established in 1992 based on the Maastricht Treaty, many European countries began to manipulate their financial information under the cash basis in order to achieve the goals set in the agreement. As a result of these distortions, the implementation of accrual accounting became mandatory in the European System of Accounts (ESA). Using accrual information not only improves financial transparency, but also improves the integrity and reliability of reported financial information. When the government provides useful and relevant financial information, its credibility with the public will increase, thus creating greater confidence in its financial management ability [31].

2.2.2 Implications of accrual accounting in the public sector

According to Barrett [9], the use of accrual accounting in the public sector can lead to a more comprehensive definition of the cost of government programs, emphasis on cost control and effectiveness measurement, more accurate calculation of the cost of activities, productivity measurement, greater accountability for resources used and invested in the public sector, greater accountability for debt reduction, and measurement of the impact of government fiscal policies on initial estimates.

3 Literature Review

3.1 Performance-based Budgeting

Jordan and Hackbart [18] investigated the success of state performance-based budgeting and found that the use of performance information and performance-based budgeting increases program efficiency, while improving accountability in public organizations.

Diamond [10] argued that the transition from traditional to performance-based budgeting requires clearly defined programs, agreed upon performance measures, sufficient managerial autonomy regarding spending, implementation of a public expenditure management system, monitoring of performance and the achievement of outcomes, and periodic performance evaluation.

Azar and Vafaei [6] found the effectiveness of performance-based budgeting can be improved by developing the necessary legal framework, identifying priorities, building the information infrastructure, establishing a system for costing and management of activities, and modifying budget allocation and payment processes.

Lu et al. [22] investigated the content of performance-based budgeting legislation and its relationship to the quality of implemented budgeting system. They found that legislation containing detailed instructions about the development, reporting, and use of performance information leads to more effective use of performance-based budgeting systems in state governments.

Zamfirescu and Zamfirescu [41] investigated performance-based budgeting models and showed that the use of information technology can lead to improvements in the implementation of performance-based budgeting.

Babajani and Khodarahmi [8] proposed a model for performance-based budgeting, according to which, effective implementation of performance-based budgeting requires legislative support, development of information systems, the use of accrual basis, coordination of legislative, regulatory, and executive bodies, and the comprehensiveness and detail of the approved budgets.

The Plan and Budget Organization (PBO) of Iran [29] investigated the performance-based budgeting systems in provincial administrations. According to the findings, effective reform of performance-based budgeting requires modifying activities in the form of plans and programs, prioritizing activities, identifying responsibility centers, identifying cost drivers and appropriate metrics for activities, assigning services to responsibility centers, calculating the total cost of activities, eliminating non-value-added activities, preparing financial and performance reports, and establishing an accrual accounting system.

Muhammad [25] studied the importance of implementing performance-based budgeting in Iraqi public organizations and found that there is no logical link between resources, funds, and expenses. Therefore, it is necessary to use performance-based budgeting to plan and control revenues and expenses, evaluate the performance of organizations, and solve the country's budget deficit problem.

Al-Khafaji et al. [3] showed that the use of performance-based budgeting in Iraqi public organizations is driven by agency costs and that it ensures optimal use of scarce resources, increases the effectiveness, efficiency, and cost-effectiveness of activities, and improves accountability.

3.2 Accrual Accounting

Tiron Tudor and Mutio [38] examined the process of transitioning from cash accounting to accrual accounting and found that the implementation of accrual accounting requires the right legal framework, developed IT systems, improved administrative procedures, and training for both preparers and users of financial information.

Babajani [7] showed that transformation of the public sector accounting system requires changing the attitude of responsible authorities about accountability to the stakeholders. Moreover, they found that establishment of an accrual accounting system in Tehran Municipality resulted in accurate asset management, greater accountability, optimal cash management, and comprehensive recognition of revenues and expenses.

Wynne [39] investigated the impact of using accrual basis accounting in the UK public sector and showed that it leads to a more accurate reflection of the financial position public organizations and the ability of the public sector to finance its activities and pay its debts.

Peter van der Hoek [28] investigated the Dutch experience with the shift from cash-based to accrual-based accounting and budgeting. They argued that the use of accrual accounting systems in Dutch public organizations should be done according to the goals, activities, and resources of each organization and that national accounts should be aggregated into public financial statements.

Paulsson [28] investigated the use of accrual accounting in Swedish public organizations and showed that it provides useful information regarding the government's budgetary and financial policies.

The results of Sharab [37] suggested that the use of accrual accounting system in Khan Yunis Municipality, Palestine, led to improvements in the quality, predictability, verifiability, and timeliness of accounting information.

Al-Jadiah [2] showed that the use of accrual basis accounting in municipalities across the Gaza Strip requires the development of accounting and financial systems, the understanding and willingness of senior managers, and training of both operational managers and financial and budget experts.

Al-Kharabsheh [4] showed that the use of accrual accounting in compliance with international standards has improved accountability in Jordanian public organizations.

3.3 Research Questions

The present research seeks to answer the following questions:

1. Which budgeting methods are used in Iraq and what are their drawbacks?
2. What are the requirements for the implementation of performance-based budgeting in Iraqi public organizations?
3. What are the requirements for the implementation of accrual accounting in Iraqi public organizations?

Given that the purpose of this research is not to generalize the results to wider populations, hypothesis development is not relevant and only the research questions will be answered.

4 Methodology

4.1 Design

The present research is an applied, developmental research with a descriptive-survey design that seeks to identify the requirements for the implementation of performance-based budgeting and accrual accounting in Iraqi public organizations, and develop a conceptual model for such implementation.

4.2 Data Collection

Information related to the budgeting and accounting systems of Iraqi public organizations are collected from various documents such as books, articles, and national documents and reports. In addition, an open-ended questionnaire and the Delphi technique are used to collect data needed for answering the research questions.

4.3 Data Analysis

Data analysis is done in three stages. First, the components of the initial model are identified through document analysis, survey, and qualitative content analysis. Second, a Delphi questionnaire is developed based on the initial components and distributed among a panel of experts in order to validate and modify the conceptual model (consensus was reached after two rounds). Finally, face validity and Cronbach's alpha are used to measure the validity and reliability of the instrument.

4.4 Population and Sample

The population consists of faculty members, senior managers, financial managers, and financial and budget experts of Iraqi public organizations. Given the restrictions caused by the COVID-19 pandemic, purposive sampling is used to select the participants. The final sample includes 65 experts with the following composition:

- 20 faculty members familiar with the subject and affiliated with Iraqi public organizations;
- 7 senior managers from Iraqi public organizations with at least 5 years of management experience and financial and budgetary expertise;
- 7 financial managers from Iraqi public organizations;
- 31 financial and budget experts from Iraqi public organizations with at least 10 years of work experience.

5 Findings

5.1 Budgeting Methods Used in Iraq and Their Drawbacks

The budgeting methods used in Iraqi public organizations and their drawbacks are identified by analyzing relevant documents and comparing the opinions of experts in response to the questionnaire with the Iraqi budget law.

According to Section 1 of the Financial Management Law of Iraq approved in 2019, "budget is the government's financial plan, which is prepared for one fiscal year and includes a forecast of revenues and other sources of funds for current and capital expenditures as well as an estimate of the costs of operations intended to achieve the policies and goals specified in the law". The primary budgeting method used in Iraq is program budgeting. A program budget specifies the activities that organizations should carry out within the fiscal year and the appropriations allotted to each activity. The classification of appropriations in the annual budget law of this country is shown in Table 1.

Table 1: Classification of appropriations in the annual budget law of Iraq (Adopted from the 2019, 2020, 2021, and 2022 budget laws of Iraq.)

Appropriations	Classification	Source	Description
Current	Functional	Table 1 of the budget	Budget breakdown based on the function of appropriations under various rubrics such as security, defense, health, education, and economy
	Economic	Table 2 of the budget	Breakdown of government expenditures based on their economic impact under seven rubrics: employee compensation, use of goods and services, asset maintenance and repair, capital expenditures, subsidies, contributions and grants, benefits and social welfare
	Administrative	Table 3 of the budget	Breakdown of appropriations based on the entities responsible for budget execution: ministries, government institutions, affiliated organizations, departments, and subsidiaries
	Geographic	Table 4 of the budget	Budget breakdown based on the administrative divisions of Iraq and the Kurdistan region, such as governorates and special regions, in line with the constitution
	Qualitative	Table 5 of the budget	Budget breakdown based on expense items and categories
Capital		Table 6 of the budget	Budget breakdown of capital projects based on the administrative divisions of the central government and the Kurdistan Region and based on expense items and categories

5.2 Requirements for Implementation of PBB in Iraq

According to the theoretical framework, the reviewed literature, and the opinion of the experts, the main drawbacks of Iraq's program budgeting approach are: task-orientation and the use of appropriations to maintain the current level of services and ensure the survival of organizations rather than to achieve indicators; the disconnect between the budget and the economic realities of Iraq, especially inflation and financial crisis; inconsistency between budget resources and expenditures; deficit; lack of focus on cost efficiency; and the compartmentalized instead of a holistic approach in organizations.

Given the lack of PBB standards, laws, and regulations in Iraq, the "Performance-based Budgeting System Implementation Report" prepared by PBO's Development and Foresight Research Center as a supporting study for the 2019 budget law was used to develop a questionnaire to identify the requirements for PBB implementation in Iraq. The questions are developed in the form of implementation stages (Table 2) in order to check the status and progress of each of these stages and provide suggestions for improvement.

In the second round of the Delphi technique, a questionnaire consisting of 40 positive questions were distributed among 65 experts (N = 2,600). Overall, there were 76 'yes' answers to 3% of the questions, and 2,524 'no' answers to 97% of the questions, and none of the questions were answered with the "no opinion" option, which indicates the

Table 2: PBB implementation stages

Stage	Requirements	Items
1. Planning	<ul style="list-style-type: none"> • Macro, strategic and operational planning • Designing tree diagrams that link resources, goals, plans, activities, metrics, executors, processes, and time required to perform the activity • Formulating performance agreements and delegating the necessary authority • Training managers and personnel 	22
2. Process Management and Documentation	<ul style="list-style-type: none"> • Amending legal structures and legal capacities • Approval of implementation procedures • Approval of the tree diagrams by the relevant authorities 	4
3. Costing	<ul style="list-style-type: none"> • Identifying appropriate cost metrics and drivers • Determining the volume of activities based on metrics • Tracing costs to activities • Calculating the total and unit cost of activities 	4
4. Performance Management	<ul style="list-style-type: none"> • Establishing performance evaluation systems • Tracing outputs according to tree diagrams • Documenting the activities • Calculating the deviations of the actual cost of activities from the estimated cost • Regular reporting on the progress toward achievement of the metrics 	4
5. Information Technology	<ul style="list-style-type: none"> • Establishing the required information technology systems • Linking organizational software • Tracking information • Developing processes for information use 	2
6. Control and Monitoring	<ul style="list-style-type: none"> • Periodic update of tree diagrams, performance measures, and costing metrics • Regular/periodic evaluation of the progress toward PBB implementation 	4
Total		40

absence of any ambiguity. The standard deviation of 33 questions is zero, while for the rest of the questions, the standard deviation is less than 0.5, meaning that about 95% of the investigated cases are within 2 standard deviations of the mean, indicating a normal distribution.

The analysis of the measures of central tendency and dispersion confirms the agreement of the experts regarding the totality and validity of the questionnaire, and thus, the questions can be considered standard. Moreover, a Cronbach's alpha of 0.866 is obtained, indicating the high level of reliability of the instrument.

The median and mode of all the questions as well as the mean of 33 questions is zero, and the mean of the rest of the questions is less than 0.4, which indicates the concentration of a considerable portion of the answers around zero, i.e., most of the respondents' answers to the questions were negative. Furthermore, the total score for all the implementation stages is 3%, which is very insignificant.

Table 3 shows the status of PBB implementation in Iraqi public organizations, separately for each implementation stage similar to the questionnaire.

Table 3: Status of PBB implementation in Iraqi public organizations

Stages	Actions Taken	Maximum Possible Score	Obtained Score	Percentage
1. Planning	In spite of the program budget, only some organizations have identified the list of tasks and activities separately for each executor.	1,430	57	4%
2. Process Management and Documentation	Only some organizations have developed the breakdown structure of activities based on approved programs.	260	17	6%
3. Costing	Only the total cost of programs is determined, and it is not possible to cost activities and sub-activities based on the relevant cost metrics and drivers.	260	0	0%
4. Performance Management	Performance measurement is based solely on the managers' judgment and is done without establishing a performance evaluation system and tracing resources to activities.	260	0	0%
5. Information Technology	Personnel, administrative, budget, financial, and payroll software are neither linked to each other nor to programs and activities.	130	0	0%
6. Control and Monitoring	Approved programs are reviewed based on the approved budgets without any performance evaluation system.	260	2	1%
Total		2,600	76	3%

The above data indicates that most PBB stages are not implemented in Iraqi public organizations, which can be attributed to the lack of a legal framework, the lack of clear plans and visions, failure to link activities to plans and programs, lack of clarity about the expected volume and cost of organizations' missions without quantitative goals and cost drivers, failure to identify responsibility centers, lack of activity-based resource allocation, inadequate costing of activities, and poor use of information technology.

Based on the opinions of the experts, a framework and a model of PBB implementation in Iraqi public organizations are developed as shown in Table 4 and Figure 1.

Table 4: Conceptual framework for PBB implementation in Iraqi public organizations

PBB Implementation	
Steps	Strategies
Establishing Accrual Accounting	Developing an integrated accrual accounting system, which entails developing the necessary legal framework, designating execution and monitoring officials, developing an activity-based coding of accounts, establishing an accrual accounting executive committee in both the Ministry of Finance and in public organizations, and establishing the necessary information systems
	Recognizing financial accounts, including current/non-current assets and liabilities and net (surplus) value
	Recognizing budgetary accounts, including appropriations received, purposes of appropriations, and revenues
	Recognizing contra and control accounts by statistical, quantitative, and rial-value categories
	Preparing financial statements, including statistics and management reports, statement of financial position, statement of changes in financial position, statement of changes in net assets, statement of performance against budget, and cash flow statement

	Preparing government's consolidated financial statements, including economic/macroeconomic variables, statistics and management reports, statement of financial position, statement of changes in financial position, statement of changes in net assets, statement of performance against budget, and cash flow statement
Establishing Activity-Based Costing	Identifying activities in the form of plans and programs
	Prioritizing activities
	Identifying responsibility centers
	Identifying cost drivers
	Setting quantitative targets based on cost drivers
	Measuring services provided
	Assigning services to responsibility centers
	Tracing direct costs
	Allocating indirect costs
	Calculating the cost of activities
Establishing Activity-Based Management	Preparing financial statements for different activities
	Defining organizational goals and determining activity criteria
	Defining the objectives and duties of employees and establishing teams
	Using the results of the activity-based costing system in budgeting
	Continuous monitoring of the performance and progress of activities
	Receiving feedback and establishing a customer relationship management system
Value Engineering of Activities	Allocating resources based on performance and establishing a reward system
	Eliminating non-value-added activities
	Eliminating unnecessary paperwork

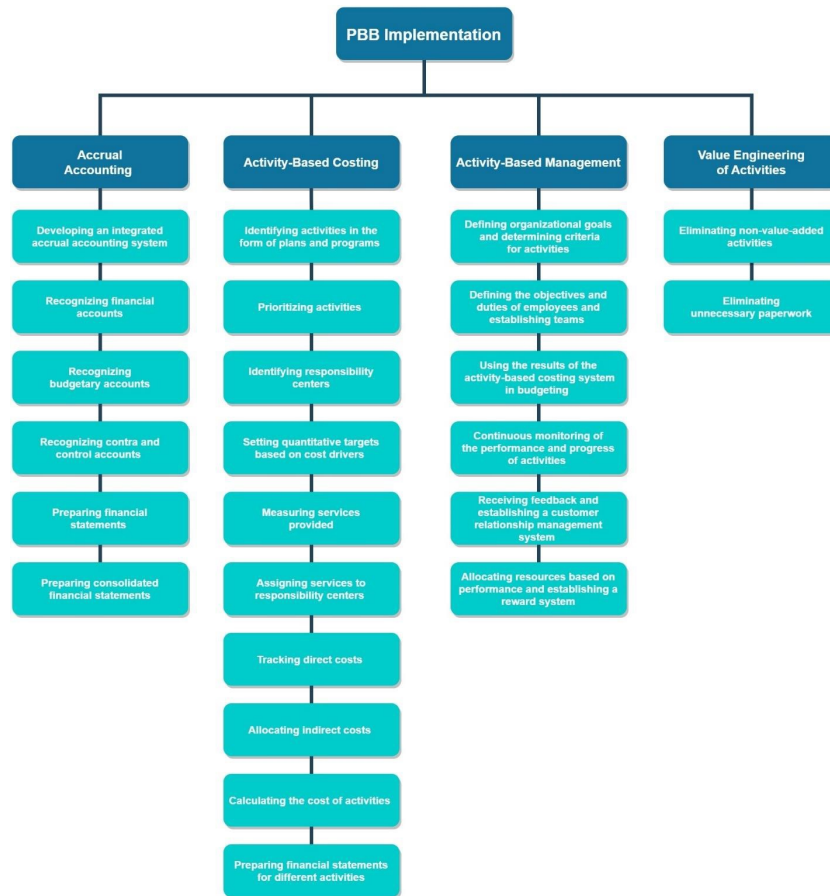


Figure 1: Conceptual model of PBB implementation in Iraqi public organizations

5.3 Requirements for Implementation of Accrual Accounting in Iraq

Given the lack of public sector accounting standards, laws, and regulations in Iraq, a questionnaire was developed based on Iranian public sector accounting standards (Paragraph 1, Article 26 of Amendments to the Government Financial Regulations, approved by the Ministry of Economic Affairs and Finance) to identify the requirements for the implementation of accrual accounting in Iraq. The questions were designed in the form of nine factors as shown to Table 5 to check the status and progress of each of these factors and providing suggestions for improvement.

Table 5: Factors in the implementation of accrual accounting

Stages	Requirements	Items
Accrual-based recognition of assets	<ul style="list-style-type: none"> • Recognizing the cost, book value, and current value of assets • Recognizing accounts receivable when generated • Using the imprest system for petty cash accounts • Identifying assets by activity center • Stock taking 	7
Accrual-based recognition of liabilities	<ul style="list-style-type: none"> • Recognizing liabilities related to approved provisional statement and approved Final statement • Recognizing reserves for post-retirement benefits and accrued paid time off • Recognizing reserves for accrued expenses payable in the next year • Recognizing current liabilities in excess of allotment and appropriation • Recognizing liabilities by activity center 	6
Accrual-based recognition of revenues	<ul style="list-style-type: none"> • Recognizing revenues from the sale of goods or services when generated • Recognizing revenues by revenue item • Recognizing revenues from lodging houses for employees • Recognizing revenues by revenue category • Recognizing revenues by activity center 	5
Accrual-based recognition of expenses	<ul style="list-style-type: none"> • Recognizing expenses when incurred • Recognizing the cost of asset depreciation • Recognizing expenses by plan and program • Recognizing expenses by activity center 	4
Recognition of net value	<ul style="list-style-type: none"> • Recognizing net value by activity center 	1
Recognition of budgetary accounts	<ul style="list-style-type: none"> • Using budget records to communicate, allocate, receive, and spend appropriations • Matching budget information with financial information 	2
Recognition of contra accounts	<ul style="list-style-type: none"> • Using statistical accounts to keep statistical information • Recognizing trust accounts 	2
Preparation of accrual-based financial statements	<ul style="list-style-type: none"> • Preparing statement of financial position, statement of changes in financial position, and statement of changes in net assets for the fiscal period • Preparing statement of performance against budget and cash flow statement for the budget period • Providing comparative items 	3

Preparation of explanatory notes	<ul style="list-style-type: none"> • Providing supplementary information regarding assets, liabilities, contracts, and guarantees • Disclosure of contingent liabilities, including legal claims for and against the organization • Providing information about default documents and state property deficit • Providing information on related parties 	3
Total		33

In the second round of the Delphi technique, 33 positive questions were distributed among 65 experts ($N = 2,145$). Overall, there were 325 'yes' answers equivalent to 15% and 1,820 'no' answers equivalent to 85%, and none of the questions were answered with the "no opinion" option, which indicates the absence of any ambiguity. The standard deviation and range of all the questions are zero, the median and mode of each question is equal, meaning that all the respondents gave either a positive or negative answer to each question. This confirms that the questionnaire items are standard and the experts' opinion about the status and progress of accrual accounting implementation in Iraq is consistent.

The analysis of the measures of central tendency and dispersion confirms the agreement of the experts regarding the totality and validity of the questionnaire, and thus, the questions can be considered standard. Moreover, a Cronbach's alpha of 0.897 is obtained, indicating the high level of reliability of the instrument.

The median and mode are equal to zero for 28 questions and equal to one for five questions, which indicates the concentration of a considerable portion of the answers around zero, i.e., most of the respondents' answers to the questions were negative. Furthermore, the total score for all the implementation factors is 15%, which is relatively small.

Table 6 shows the status of accrual accounting implementation in Iraqi public organizations, separately for each implementation factor similar to the questionnaire.

Table 6: Status of accrual accounting implementation in Iraq

Stages	Actions Taken	Maximum Possible Score	Obtained Score	Percentage
Accrual-based recognition of assets	Information related to tangible fixed assets is recorded and maintained in the property software in accordance with the instructions of the Ministry of Finance.	455	65	14%
Accrual-based recognition of liabilities	Liabilities are recognized as payable obligations when paid.	390	0	0%
Accrual-based recognition of revenues	Revenues are recognized by revenue category.	325	65	20%
Accrual-based recognition of expenses	Expenses are recognized by plan and program, with only some organizations recognizing non-personnel expenses by responsibility center.	260	65	25%
Recognition of net value	The surplus value is calculated by deducting expenses from appropriations received.	65	0	0%
Recognition of budgetary accounts	Budget records are used to notify, allocate, receive, and spend appropriations.	130	65	50%
Recognition of contra accounts	Reports on default documents, state property deficit, contracts, and guarantees can be prepared using a software.	130	0	0%
Preparation of accrual-based financial statements	Budget statements and cash financial statements are prepared according to the instructions of the Ministry of Planning and Budget and the Ministry of Finance along with comparative figures for the previous period.	195	65	33%

Preparation of explanatory notes	Ad-hoc reports are provided to regulatory bodies along with cash financial statements and budget statements.	195	0	0%
Total		2,145	325	15%

The above data indicates that most accrual accounting implementation factors are not considered in Iraqi public organizations, which can be attributed to the lack of a legal framework, absence of integrated coding of accounts, failure to evaluate the financial position, performance and flexibility of organizations, lack of integrated financial reporting in the form of government's consolidated financial statements, and poor use of information technology.

Based on the opinions of the experts, a framework and a model are developed for accrual accounting implementation in Iraqi public organizations as shown in Table 7 and Figure 2.

Table 7: Conceptual framework for accrual accounting implementation in Iraqi public organizations

Steps	Strategic Actions	Executive Actions
1. Development of an Integrated Accrual Accounting System	Developing the necessary legal framework and designating execution and monitoring officials	Development and approval of a strategic document for the implementation of accrual accounting by the relevant authorities
	Coding accounts based on organizational activities	At the level of account group, general, subsidiary, detailed, detailed subsidiary, floating, and detailed floating accounts
	Establishing an accrual accounting executive committee in both the Ministry of Finance and in public organizations	Holding meetings, tracking the progress of the project, and making necessary adjustments Examining the relationships between accounts by reviewing balances and analytical ratios
	Establishing required information systems	Implementing the operational process of organizations through financial software with the ability to issue electronic and smart documents Examining the links between financial and other software such as personnel, administrative, budgeting, payroll, and property software
2. Recognition of Financial Accounts	Recognizing current and non-current assets	Including cash reserve, accounts receivable, inventories, prepayments, tangible fixed assets, intangible assets, investments, and other assets
	Recognizing current and non-current liabilities	Including accounts payable, deposits, advances, reserves, and contingent liabilities
	Recognizing net (surplus) value	Including net accumulated value (net value at the beginning of the period, revenues, expenses, and annual adjustments), revaluation surplus of assets, and exchange rate difference
3. Recognition of Budgetary Accounts	Recognizing appropriations received	Broken down into approved, allocated, and secured appropriations from general/special expenses and capital/financial asset acquisitions
	Recognizing the purposes of appropriations	Broken down into general/special expenses and capital/financial asset acquisitions
	Recognizing revenues	Broken down into general/special revenues and capital/financial asset acquisitions
4. Recognition of Control Accounts	Recognizing contra accounts	Broken down into rial-value, quantitative, and statistical
	Preparing statistics and management reports	Including reports on human resources, management structure, social capital, visions, and etc.

5. Preparation of Financial Statements	Preparing statement of financial position	Reflecting the accounting equation in the form of a balance between assets, liabilities, and net value
	Preparing statement of changes in financial position	
	Preparing statement of changes in net assets	Reflecting the difference in net accumulated value between the end and the beginning of the period, changes in financial position during the period, annual adjustments, revaluation surplus of assets, and exchange rate difference
	Preparing statement of performance against budget	Reflecting the budget equation of the organization in the form of a balance between sources and purposes of appropriations, revenues, and unexpended balance
	Preparing cash flow statement	Reflecting cash flows from operating activities, returns on investments, and interest expense, investment activities, and financing activities
Preparing explanatory notes	Reflecting important information about measurement and recognition of various elements of financial statements	
6. Preparation of Government's Consolidated Financial Statements	Reporting macroeconomic variables	Including gross domestic product (GDP), GDP per capita, total factor productivity, gross fixed capital formation, total consumer spending, non-oil exports, total imports, liquidity, inflation rate, employment rate, etc.
	Reporting economic variables	Including annual growth rate of added value, annual employment growth, annual investment growth, annual total factor productivity growth, etc., broken down for different sectors (e.g., agriculture, oil, industry, mining, water, electricity and gas, construction, transportation, warehousing, telecommunications, etc.)
	Preparing statistics	Including reports on human resources, management structure, social capital, visions, and etc.
	Preparing statement of financial position	Reflecting the accounting equation of the government in the form of a balance between assets, liabilities, and net value
	Preparing statement of changes in financial position	Reflecting the changes in the financial position of the government with statements of receipts, expenses, revenues, and unexpended funds
	Preparing statement of changes in net assets	Reflecting the difference in net accumulated value of the government between the end and the beginning of the period, changes in financial position during the period, annual adjustments, revaluation surplus of assets, and exchange rate difference
	Preparing statement of performance against budget	Reflecting the budget equation of the government in the form of a balance between sources and purposes of appropriations, revenues, and unexpended balance of all public organizations
	Preparing cash flow statement	Reflecting cash flows from operating activities, returns on investments, and interest expense, investment activities, and financing activities
	Preparing explanatory notes	Reflecting important information about measurement and recognition of various elements of financial statements

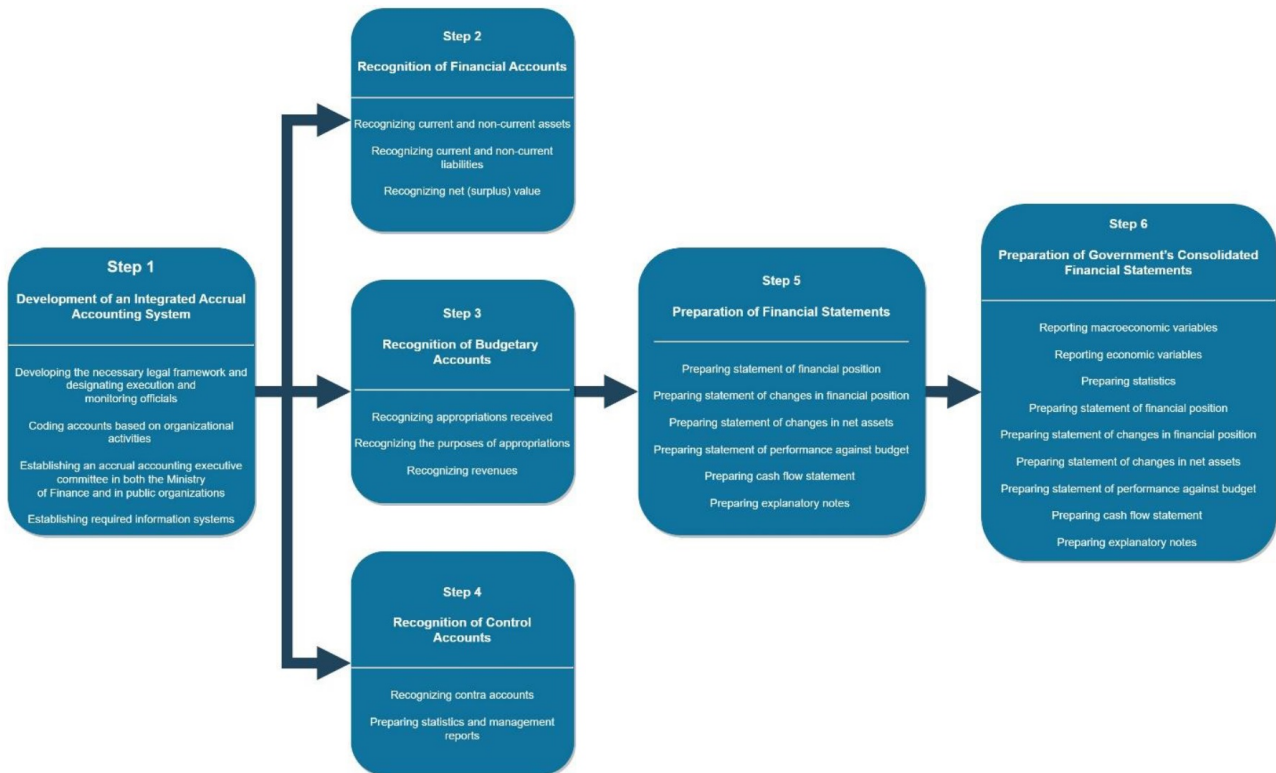


Figure 2: Conceptual model of accrual accounting implementation in Iraqi public organizations.

6 Discussion and Conclusion

The results related to the first question indicated that program budgeting is the primary method of budgeting used Iraqi public organizations. In this method, the appropriations of public organizations are specified with respect to tasks, programs, activities, and capital projects to enable these organizations to achieve the specified goals during the budget execution period. Some of the drawbacks of this budgeting method are: the lack of participation of operational and human resource managers in budgeting; incremental forecasting of continuing expenses; using appropriations for survival rather than to achieve indicators; the compartmentalized instead of a holistic approach in organizations; the lack of a link between resources and expenses; and the disregard for cost efficiency. These findings are consistent with the results of Muhammad [25] and Al-Khafaji et al. [3].

As for the second question, most PBB stages are not implemented in Iraqi public organizations, which can be attributed to the lack of a legal framework, the lack of clear plans and visions, failure to link activities to plans and programs, lack of clarity about the expected volume and cost of organizations' missions without quantitative goals and cost drivers, failure to identify responsibility centers, lack of activity-based resource allocation, inadequate costing of activities, and poor use of information technology. These findings are consistent with the results of Azar and Vafaei [6], Nobakht [26], Babajani and Khodarahmi [8], PBO [29], Kordbacheh [21], Lu et al. [22], Muhammad [25], and Al-Khafaji et al. [3].

Finally, the results related to the third question indicated that the recognition of financial events in Iraqi public organizations is based on cash accounting and no significant step has been taken to establish an accrual accounting system. This can be attributed to the lack of a legal framework, absence of integrated coding of accounts, failure to evaluate the financial position, performance and flexibility of organizations, lack of integrated financial reporting in the form of government's consolidated financial statements, and poor use of information technology. These findings are consistent with the results of Al-Jadiah [2] and Al-Kharabsheh [4].

6.1 Limitations

The following limitations must be taken into consideration in the interpretation and generalization of the findings:

1. The use of convenience sampling as a result of the restrictions caused by the COVID-19 pandemic prevented us from having a broader cross-section of experts in our sample. A larger or more diverse sample may have yielded different indicators and the theoretical model of the research would have been slightly different.
2. Contact with experts and the review, modification, and completion of questionnaires was also a long and arduous process due to COVID-19 restrictions such as lockdowns and closure of certain organizations. To mitigate this problem, a significant portion of the communication between the researchers and the experts was done through online platforms.

6.2 Implications for Practice

1. Due to the lack of necessary legal framework in Iraq regarding the implementation of PBB and accrual accounting in the public sector, it is suggested that relevant laws and regulations explicitly require the implementation of these systems within a certain period of time, using specific mechanisms, and under regulatory or judicial supervision.
2. Given that the budget laws of Iraq are annual and there is significant delay in approval and communication of budget execution guidelines by the relevant authorities, it is recommended that the instructions of the previous year's budget law be implemented until the approval of the new guide-lines, so as to prevent delayed or incomplete execution.
3. Since the implementation of PBB and accrual accounting in Iraq is in its infancy and is far from international best practices, scholarships can be granted to talented students to grow the knowledge base of this country and improve its outcomes.
4. In order to improve financial reporting in Iraqi public organizations, it is necessary to develop an integrated coding system based on accounting theories and modeled after the accrual accounting system of neighboring countries, including Iran, along with the necessary legal framework in the form of a law or guideline that is communicated to all public organizations of this country.
5. Due to the fact that the establishment and proper implementation of PBB and accrual accounting systems depends on the use of state-of-the-art ICT systems, it is suggested that Iraqi public organizations establish working groups consisting of accounting, management, and IT experts to develop and use appropriate financial and information software.
6. Financial, psychological, and organizational support from managers plays a crucial role in every project or activity. Hence, it is suggested that managers of Iraqi public organizations provide all-round support to employees, including financial incentives and acknowledgement of their efforts in official ceremonies.
7. Given that employees are at the core of effective implementation of organizational projects, Iraqi public organizations are advised to engage the employees involved in the establishment of PBB and accrual accounting system and encourage them to accept the upcoming changes and actions by informing them about the goals of the plan and its benefits.

6.3 Implications for Future Research

1. Future research can replicate this study for other countries and compare the results with the present findings.
2. Given the legal, social, cultural, and political conditions of Iraq, it is recommended that researchers examine the causal, environmental, and disruptive factors in Iraq's budgeting system reform and provide the legal mechanisms necessary for dealing with each of these factors.
3. Given the use of different coding techniques by Iraqi public organizations, which makes it difficult to prepare consolidated financial statements of the government, future research can study ways of harmonizing these coding techniques.

References

- [1] ADB, *Accrual budgeting and accounting in government and its relevance for developing member countries*, Manila, Asian Development Bank, 2003.
- [2] S.S. Al-Jadia, *The possibility of shifting from cash basis to accrual basis in the municipalities of the Gaza Strip: A case of Jabalia municipality*, Master's thesis, Islamic University of Gaza, Palestine, 2019.
- [3] H.J.H. Al-Khafaji and S.A.M. Al-Ani, *Strengthened accountability in Iraqi governmental departments in light of the implementation of program and performance budgeting*, *J. Soc. Sci. Human.* **19** (2020), no. 2, 92–132.
- [4] F.A. Al-Kharabsheh, *The effect of accrual basis accounting on the final accounts of Jordanian ministries and government agencies*, *Islamic Univer. Econ. Admin. Stud.* **28** (2020), no. 2, 187–208.
- [5] M. Andrews, *Beyond best practice and basics first in adopting performance budgeting reform*, *Public Admin. Dev.* **26** (2006), no. 2, 147–161.
- [6] A. Azar and A. Vafaei, *Investigating the factors in the effectiveness of performance-based budgeting in public organizations*, *Program Budget* **15** (2010), no. 110, 79–98.
- [7] J. Babajani, *The importance of accrual accounting in the public sector: a case of Iran*, *PNH J.* **5** (2007), no. 4, 4–46.
- [8] J. Babajani and B. Khodarahmi, *A model for establishing a performance-based budgeting system in Iranian government*, *Empir. Financ. Account. Stud.* **11** (2014), no. 41, 1–36.
- [9] P. Barrett, *Whole of government financial reporting*, Australian National Audit Office, 1997.
- [10] J. Diamond, *Establishing a performance management framework for government*, IMF Working Paper, 2005.
- [11] A. Faqih Qayen, *Investigating the mechanisms of financial system reform and establishment of accrual accounting in non-governmental public institutions of Qom province*, Master's thesis, Payam-e-Noor University, 2016.
- [12] G. Gruening, *Origin and theoretical basis of new public management*, *Int. Public Manag. J.* **4** (2001), no. 1, 1–25.
- [13] U.T.Z. Helmuth, *Better performance with performance budgeting? Analyzing cases of success and failure in public administrations*, *Int. Public Manag. J.* **13** (2010), no. 4, 408–428.
- [14] M. Hematfar, F. Rahimi, and A. Maleki, *Investigating the shift in government accounting from cash to accrual basis and its impact on the quality of financial reporting*, 2nd Nat. Conf. Ways Improv. Manag. Account. Ind. Manag., Gachsaran, Iran, 2013.
- [15] IFAC, *Perspectives on accrual accounting*, Occasional Paper 3, New York: Public Sector Committee, 1997.
- [16] IMF, *Government finance statistics manual*, Washington: IMF, 2001.
- [17] L. Jones, *Learning from international public management reform experience*, London: Elsevier-Oxford, 2001.
- [18] M. Jordan and M. Hackbart, *The goals and implementation success of state performance-based budgeting*, *J. Public Budget. Account. Financ. Manag.* **17** (2005), no. 4, 471–487.
- [19] L. Killian, *Once more with feeling: performance budgets*, *Armed Forces Comptrol.* **44** (1999), no. 2, 23–26.
- [20] D. Kong, *Performance-based budgeting: the U.S. experience*, *Public Organ. Rev.: Glob. J.* **5** (2005), 91–107.
- [21] M. Kordbacheh, *Implementation of the performance-based budgeting system in a medium-term framework of government expenditures*, Tehran, Center for Development and Foresight Research, National Program and Budget Organization, 2019.
- [22] Y. Lu, K. Willoughby, and S. Arnett, *Performance budgeting in the American states: what's law got to do with it?*, *State Local Gover. Rev.* **43** (2011), no. 2, 79–94.
- [23] K. Luder, *Contingency model of government accounting innovations*, *Res. Gover. Non-Profit Account.* **7** (1992), 99–127.
- [24] T. Mellor, *Why governments should produce balance sheets?*, *Aust. J. Public Admin.* **55** (1996), no. 1, 78–81.
- [25] M.T. Muhammad, *The importance of transitioning from program budgeting to performance budgeting to address*

- general budget deficit in Iraq*, Al-Anbar Univ. J. Econ. Admin. Sci. **24** (2019), 1–24.
- [26] M.B. Nobakht, *A conceptual model for structural reform of Iran's budgeting system*, Econ. Strategy **1** (2012), no. 2, 7–46.
- [27] H. Ouda, *Public sector accounting and budgeting reform: the main issues involved*, Expert Group Meeting on Public Sector Reform, United Nations, 2003.
- [28] G. Paulsson, *Accrual accounting in the public sector: experiences from the central government in Sweden*, Financ. Account. Manag. **22** (2016), no. 1, 47–62.
- [29] PBO, *Establishment of performance-based budgeting in the provincial departments across the country*, Plan and Budget Organization of Iran, 2018.
- [30] M. Peter Van Der Hoek, *From cash to accrual budgeting and accounting in the public sector: the Dutch experience*, Public Budget. Account. **4** (2012), no. 12, 32–45.
- [31] R. Qureshi, A. Haghghi, and A. Ashkazran, *The necessity of transitioning from cash basis accounting to accrual basis accounting in Iranian executive bodies*, 2nd National Conference on Public Sector Accounting Standards, Tehran, 2014.
- [32] N. Rahimian and M.J. Saffar, *Objectives of financial reporting by the central government*, Iran Audit Organization, Tehran, 2000.
- [33] S.F. Redburn, R.J. Shea, T.F. Buss, and D.M. Walker, *Performance management and budgeting: how governments can learn from experience*, 1st edition, Routledge, 2007.
- [34] M. Robinson, *Performance budgeting: linking funding and results*, New York: Springer, 2009.
- [35] M. Robinson and J. Brumby, *Does performance budgeting work? an analytical review of the empirical literature*, IMF Working Paper **3** (2005), 3–5.
- [36] A. Schick, *Performance budgeting and accrual budgeting: decision rules or analytical tools?*, OECD J. Budget. **7** (2007), no. 2, 109–138.
- [37] A.A. Sharab, *The relationship between the shift from cash basis to accrual basis and the quality of accounting information: A case study of Khan Younis municipality*, Master's thesis, Islamic University of Gaza, Palestine, 2019.
- [38] A. Tiron Tudor and A. Mutiu, *Cash versus accrual accounting in public sector*, Studia Universitatis Babeş Bolyai Oeconomica, Available at SSRN: <https://ssrn.com/abstract=906813>, (1990).
- [39] A. Wynne, *Accrual accounting basis for public sector*, Int. J. Gover. Financ. Manag. **8** (2012), no. 2, 43–45.
- [40] A. Zaltsman, *The effects of performance information on public resource allocations: a study of Chile's performance-based budgeting system*, Int. Public Manag. J. **12** (2009), no. 4, 450–483.
- [41] L. Zamfirescu and C. Zamfirescu, *Goal programming as a decision model for performance-based budgeting*, Proc. Comput. Sci. **17** (2013), 426–433.