

Adoption Enhancing Program and Performance Budgeting in the Higher Education Sector in the Kurdistan Region of Iraq through the Implementation of International Public Sector Accounting Standards and Government Financial Statistics Manual

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Abstract

The aim of this paper is to explore the practical dimensions of the International Public Sector Accounting Standards (IPSAS), Government Financial Statistics Manual (GFSM), and Program and performance budgeting in the higher education sector in the Kurdistan region of Iraq. To achieve this objective, a survey was conducted among practicing accountants, auditors, and specialized academic professionals in the higher education sector. The survey aimed to test the relationship between the study variables and determine the degree of compatibility between the opinions of academics and professionals regarding the application of these variables. To evaluate and analyze the study variables, a descriptive survey method was employed, and statistical analysis tools were used to analyze the collected data. A special survey list was prepared for this purpose to investigate the opinions of a random sample of professionals and academic specialists in the field of accounting and auditing. An inferential statistical method was also adopted to test the study hypotheses, which consisted of three main hypotheses. The study findings indicate that the integrated application of IPSAS and GFSM is essential and beneficial for adopting Program and performance budgeting in the higher education sector in the Kurdistan region of Iraq.

Keywords: *International Public Sector Accounting Standards (IPSAS), Government Finance Statistics Manual (GFSM), Program and Performance Budgeting, Kurdistan Region.*

1. Introduction

The general budget of a state is a fundamental tool for public financial management and an essential element for the operational and investment plans, programs, and policies of the state. It enables the estimation of public revenues and expenditures for the upcoming period and regulates the mechanisms for collecting these revenues and spending the budget. The implementation of the budget must be continuously monitored to ensure its legitimacy (Canan, 2010). Modern budgeting approaches emphasize not only control but also increasing the efficiency and effectiveness of government programs and activities, strengthening control mechanisms and accountability, and enhancing transparency in the implementation of planned objectives. Program and performance budgeting, which is widely adopted globally, represents this approach. It focuses on the outputs of the budget

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system and seeks to maximize their quality within the limitations of inputs (Savignon, 2019). In the context of aligning the general budget system based on program and performance and the government accounting system, the application of International Public Sector Accounting Standards (IPSASs) is crucial in various accounting, economic, and social variables. IPSASs are instrumental in enabling effective planning activities, prudent investment, and monitoring of various economic activities and budget programs (AL-Kharabsh, 2021). Furthermore, the adoption of the Government Finance Statistics Manual (GFSM) contributes to the classification of general budget data, enabling the application of statistical methods that support planning processes (Mohammed, 2020).

Over the past two decades, countries worldwide have increasingly focused on implementing Program and performance budgeting system in public sector management. This trend has been characterized by efforts to generate more data on performance and improve evaluations of government programs (Aristovnik & Seljekm, 2010). In recent years, there has been a noticeable surge in the design and implementation of Program and performance budgeting systems in the field of public financial management (Robinson, 2013). Program and performance budgeting provides government departments with the opportunity to improve consistency between budget allocations and their core priorities, integrate the overall government strategy and performance management, make spending more transparent, and promote the efficient and effective use of public resources (Savignon, 2019). Adopting a program and Program and performance budgeting system helps to clarify the relationship between the outputs and inputs of the accounting system in government units by ensuring optimal use of available resources (Ouda, 2014). Miraj (2018) suggests that countries that initiate financial management reforms to change their budgeting system should rely on the International Public Sector Accounting Standards (IPSASs) as a basis for application, as they contribute to enhancing the transparency and reliability of data provided by government units. Additionally, changing the state's general budget system to a program-based one requires the adoption of accrual accounting and the application of the Government Finance Statistics Manual (GFSM), providing an accurate picture of financial data that serves the financial and economic plan in preparing the Program and performance budgeting (Opanyi, 2016).

According to Mohammad (2020), reforming the general budget of the state requires the application of International Public Sector Accounting Standards (IPSASs) and the Government Finance Statistics Manual (GFSM) at the local environmental level to increase the disclosure and transparency of the budget. However, the general budget in Iraq, especially in the Kurdistan region, faces numerous issues in terms of accountability for effectiveness, implementation efficiency, and control. The budget relies on traditional budgeting methods (line items) that operate on a cash basis, leading to inadequate allocation distribution, ineffective program implementation, and low efficiency, as well as wasting available funds. Therefore, the current study aims to investigate how applying IPSASs and GFSM can support the successful adoption of program and performance budgeting in the higher education sector of the Kurdistan region.

The problem statement of the study is focused on two main issues: the impact of implementing IPSASs and GFSM on supporting the adoption of Program and performance budgeting in the local environment, and the contribution of these standards and manuals in enhancing financial transparency and accountability in the public sector. The study aims to analyze the effect of IPSASs and GFSM on activating the adoption of Program and performance budgeting in the Kurdistan Region of Iraq, and to highlight the importance of utilizing these standards and manuals to enhance financial transparency and accountability in the public sector. Ultimately, the study seeks to emphasize the need for reforms in the traditional budgeting system, and the adoption of a program-based budgeting approach that reflects real financial data to serve financial and economic planning.

It is important to note that the study has limitations, such as the relatively small sample size and the focus on a specific local environment. Future research could expand the scope to other regions and sectors to provide more comprehensive and generalizable results. Nevertheless, the study's findings provide important insights into the potential benefits of adopting IPSASs and GFSM in supporting the successful implementation of Program and performance budgeting, which can contribute to enhancing financial transparency and accountability in the public sector.

The remaining sections of this study are organized as follows: Section 2 will provide a review and analysis of previous studies related to the topic at hand. Section 3 will present the hypotheses developed by the researchers based on the analysis and evaluation of the implementation process of International Public Sector Accounting Standards (IPSASs) and the Government Finance Statistics Manual (GFSM) in relation to program and performance budgeting, as well as the results of previous studies. Section 4 will explain the methodology used for conducting the survey study. Section 5 will present the descriptive statistics and results of hypothesis testing, along with a discussion of the results. Lastly, in Section 6, the researchers will conclude the study by presenting the main findings.

2. Literature Review and Hypothesis Development

2.1 Literature Review

For a long time, public sector accounting relied on the cash basis, until researchers, professional organizations, and scientific communities began showing interest in the accrual basis in the early 1990s. During this time, some countries faced financial constraints that led to a reduction in public spending while improving the efficiency and effectiveness of the services provided. The push for performance-focused reform necessitated the introduction of the accrual accounting basis practiced in the private sector to public sector accounting. Progress was slow initially, but significant progress was made in the year 2000 when an initial set of IPSASs based on the accrual basis was developed, building on the IASs (James, 2010; Shaw, 2014; Boulefia, 2015).

The new council adopted the necessary measures to develop IPSASs, which allow all relevant parties (auditors, financial information preparers, standard setters, etc.) to comment on them, as noted by Akinleye & Ajewole (2018). Council meetings were open to the public, and some were published on the internet, with observers including the World Bank, the European Union, the Asian Development Bank, the International Monetary Fund, the International Accounting Standards Board, INTOSAI, the Organization for Economic Cooperation and Development, the United Nations Development Programme, and the United Nations (Patrick et al., 2017). Over time, studies have shown that implementing International Public Sector Accounting Standards is an important part of reforming the public sector system in government entities and following global trends in government accounting, as demonstrated by Opanyi's (2016) study. AL-Kharabash (2021) suggests that relying on International Public Sector Accounting Standards (IPSAS) has a moderate impact on the quality of financial reporting in the public sector. It is necessary to reform the government accounting system by adopting an accrual basis, based on IPSAS, to improve the quality of financial reporting in the public sector.

On a different note, numerous studies have examined the impact of International Public Sector Accounting Standards (IPSAS) on delivering high-quality financial information. A study conducted by Akinleye and Alaran (2018) found that adopting IPSAS in the public sector in Nigeria increased the quality of financial information provided, enhancing accountability and transparency. Through regression analysis, the study demonstrated the positive impact of IPSAS adoption on financial information quality. In addition, several

studies have focused on the modern market requirements that necessitate having two separate systems for accounting and statistical information. These studies emphasized the significant importance of analyzing government accounting and financial statistics systems to support macroeconomic analysis and provide financial reports for general purposes in line with IPSAS. Crisana and Eulopa's (2014) study found a low level of similarity between Government Finance Statistics Manual (GFSM) data and IPSAS data, indicating that these systems serve different purposes. While government financial statistics serve as a support for macroeconomic analysis, IPSAS serves as a support for decision-making in government entities. Therefore, standardization efforts are considered premature at this time.

A study conducted by Gonzalez et al. (2018) emphasizes the importance of reforming the public financial management system by applying the Government Finance Statistics Manual and International Public Sector Accounting Standards. The study highlights the need for modifications between various systems used in different countries and government regions within the European Union. Conversely, Abdelaziz's (2017) study addresses the weakness of Egypt's public financial management system, resulting from following traditional methods in preparing and implementing the state's general budget, leading to a lack of transparency and disclosure of government financial transactions. The study concludes that applying the Government Financial Statistics Manual to align sound principles of public financial management with the primary objective of budgeting under the traditional concept, which is to control public funds, is necessary. Therefore, in the light of financial austerity in many countries, which indicates the need for governments to make radical changes in public financial management, adopting performance and program budgeting is crucial. Canan's (2010) and Savignon's (2019) studies found that a lack of laws and regulations leads to deficiencies in strategic planning, performance budgeting, financial reporting, and detailed expenditure programs. This was achieved through distributing a set of questionnaires and conducting a series of interviews.

Previous studies have highlighted a lack of research on the application of International Public Sector Accounting Standards (IPSAS) and Government Financial Statistics Manual (GFSM) in the adoption of Program and performance budgeting at the local and global levels. In this context, the present study aims to demonstrate the impact of implementing IPSAS and GFSM in the adoption of Program and performance budgeting in the higher education sector in the Kurdistan Region of Iraq. The study takes into account the conflicting results of previous research on the application of IPSAS and GFSM. To contribute to this issue, the researchers will use a specially designed questionnaire to measure the impact of implementing IPSAS and GFSM on program and performance budgeting. The sample will consist of academics and practitioners working in universities in the Kurdistan Region of Iraq. This study is conducted to provide a modest scientific contribution to the understanding of the impact of IPSAS and GFSM on Program and performance budgeting at the local and global levels.

2.2 Hypotheses

In light of the research problem and its objectives, the study adopts the following hypotheses:

2.2.1 Impact of Implementing International Public Sector Accounting Standards (IPSAS) and Government Financial Statistics Manual (GFSM) on Program and Performance Budgeting in the Higher Education Sector of Kurdistan Region, Iraq

Previous studies have examined how the adoption of International Public Sector Accounting Standards (IPSASs) can contribute to the implementation of Program and performance budgeting. For example, Opanyi's study (2016) found that adopting IPSASs on an accrual basis can enhance public financial management reforms by facilitating the adoption of medium-term Program and performance budgeting, as it provides more

performance-related information on government units. Likewise, Kamel's study (2018) confirmed that the adoption of IPSASs can improve the quality of financial reporting in the public sector, which can lead to better Program and performance budgeting. Other studies such as Shakirat (2019) and Boulifa (2015) have also demonstrated how implementing IPSASs on an accrual basis can provide useful information to support planning for program and performance budgeting in subsequent years. Based on this literature review, the first main hypothesis of this study is formulated as follows:

There is a statistically significant relationship and impact of the application of IPSAS in adopting program and performance budgeting.

2.2.2 There is a significant relationship and impact of applying the Government Financial Statistics Manual in adopting program and performance budgeting in the Kurdistan Region of Iraq.

Studies have shown that adopting the Government Financial Statistics Manual (GFSM) can have a positive impact on the adoption of program and performance budgeting. Al-Khazali and Al-Mousawi (2017) found that applying the GFSM enhances control over government units' activities and programs, helping to ensure the preservation of public funds. Similarly, Gonzalez et al. (2017) demonstrated that applying the GFSM can improve decision-making and accountability by dividing activities and programs, leading to better adoption of program and performance budgeting. Siksamat (2015) showed that preparing a proper tabulation of programs and activities is critical for success in implementing program and performance budgeting with the GFSM, which tabulates all revenues and expenditures according to activities and programs. Thus, the second main hypothesis of this study is that there is a significant relationship and impact of applying the GFSM in adopting program and performance budgeting in the Kurdistan Region of Iraq.

There is a statistically significant relationship and impact of applying the Government Financial Statistics Manual (GFSM) on adopting a performance-based budget.

2.2.3 The application of International Public Sector Accounting Standards (IPSAS) in the public sector and the use of the government financial statistics guide are important in adopting a Program and performance budgeting approach

Aggreh and Dabor (2017) have highlighted the significance of applying International Public Sector Accounting Standards (IPSAS) in the public sector as they serve as a significant function for several accounting, economic, social, legal, and political variables. IPSAS play a crucial role in planning, investment, and monitoring economic activities through the government's budget. Al-Zaki's (2018) study emphasized the need to reform the government accounting system by transitioning to a more advanced stage of the prevailing government budget, i.e., a program and Program and performance budgeting, to achieve administrative and financial reform. Adopting IPSAS targets the use of a set of standards that support decision-making regarding the budgeting approach directed towards programs and performance. Seiferling (2013) indicates that the Government Financial Statistics Manual (GFSM) serves as a control system for the legitimacy of spending and the implementation of the general budget of the state. The GFSM plays an important role in developing the general budget as the budget is a crucial tool for planning, controlling expenses, achievements, and programs, and coordinating government activities. The manual provides necessary information for planning, policy-making, evaluation, financial, economic, and administrative analysis, and making appropriate decisions. Based on this, the third main hypothesis is formulated as follows: There is a significant relationship and impact of applying IPSAS and GFSM in adopting a program and performance budget.

3. Methodology and Data collection tools:

The study utilizes a theoretical framework to test its hypotheses and employs research methodologies and data collection tools based on the following study axes:

3.1 Data

The study utilizes the descriptive survey method to assess and analyze the implementation of the study variables in the public sector sample. This involves creating a unique survey form to collect the opinions of a group of experts and professionals specialized in accounting and auditing within the study sample. The inferential statistical method is employed to test and analyze the relationships between the study variables and their hypotheses.

3.2 Sample Selection:

The study sample was chosen based on the research problem and its practical objectives, with Duhok University selected as it represents a government university in the higher education sector that impacts society. This choice was made due to the nature, capabilities, time, and economic constraints of the study. The survey was conducted among two communities in the field of accounting: academics and practitioners in the accounting and auditing sector of the education industry in Duhok province. The opinions of these communities were collected to evaluate the application process of the study variables. A stratified random sample was chosen to ensure a representative sample.

4. Descriptive Statistical analysis

The first phase of the study involves conducting a descriptive statistical analysis of the variable "IPSAS implementation." This variable is comprised of 10 sub-variables, and the study presents the results of the sample's responses to this variable.

The results are shown in Table (1).

	Sub-Variable Mean	Coefficient of Variation	Standard Deviation	Percentage of Mean	Mean
1	IPSAS application contributes to measuring and presenting the expenses of the government unit in a way that helps evaluate and monitor its financial performance	.340	.58346	%82	4.0851
2	IPSAS application provides accuracy in measuring and presenting the revenues obtained by the government unit	.601	.77543	%82	4.0851
3	IPSAS application contributes to the accuracy in measuring and presenting the financial performance results of a surplus or deficit of the government unit and its causes	.694	.83295	%81	4.0426
4	IPSAS application can monitor amounts receivable and prepaid amounts accurately.	.521	.72167	%83	4.1489
5	IPSAS application provides a clear picture of all types of current and non-current assets and liabilities of the unit within the financial position statement.	.897	.94727	%76	3.8085
6	IPSAS application increases the accuracy of expense calculation and	.607	.77900	%79	3.9574

	does not charge expenses except for the value that the assets consume				
7	IPSAS application helps in recognizing and measuring fixed assets, contributing to planning and controlling the investment activity of the government unit	.870	.93250	%80	4.0000
8	IPSAS application contributes to presenting the cash flows of the government unit according to its activities.	.564	.75119	%83	4.1489
9	IPSAS application contributes to increasing the transparency of accounting information, serving accountability, direction, and control.	.439	.66288	%86	4.3191
10	IPSAS application contributes to presenting information about the financial position, financial performance, and cash flows of the unit in a way that helps the successful implementation of performance and program budgeting.	.723	.85053	%84	4.1915
	Average of means	0.6256	0.783688	%82	4.07871

The table above (Table 1) demonstrates that the variable of IPSAS application's contribution to enhancing transparency to achieve accountability and oversight has obtained the highest level of agreement among the study sample with an arithmetic mean of 4.3191, a percentage of 86%, and a low standard deviation of 0.66288. On the other hand, the variable of providing a clear picture of all types of current and non-current assets and liabilities within the financial position statement obtained the lowest arithmetic mean of 3.8085, a percentage of 76%, and a standard deviation of 0.947. The overall average of all variable means was 4.0787, with a percentage of 82% and a standard deviation of 0.783, indicating a consensus among the study's sample regarding the mechanisms of IPSAS application and its benefits to the study's unit.

4.2 Descriptive statistical analysis of the variable "Application of GFSM":

The second main variable was expressed through 10 sub-variables, and the results of the study sample's responses to the variable items were as follows:

Table (2): Descriptive statistical analysis results of the variable "Application of GFSM"

	Sub-Variable Mean	Coefficient of Variation	Standard Deviation	Percentage of Mean	Mean
1	The GFSM application helps link inputs and outputs of the government unit based on activities and programs.	.645	.80298	%78	3.9149
2	The GFSM application provides the ability to apply the accrual basis according to IPSAS and to provide financial information according to international classifications.	.607	.77900	%81	4.0426
3	The GFSM application contributes to showing fixed assets in the financial position statement in order to control the quantity and value of these assets.	.706	.84014	%82	4.1064
4	The GFSM application helps use functional classification in classifying expenditure items	.514	.71717	%78	3.9149

	uniformly, systematically, and in compliance with IPSAS.				
5	The GFSM application helps display detailed financial information on all cash and non-cash transactions of government unit operations.	.652	.80757	%80	4.0000
6	The GFSM application achieves financial discipline and transparency for the government unit through standardizing financial reports and statements.	.666	.81612	%83	4.1702
7	The GFSM application contributes to identifying, measuring, and presenting expenditure items within the framework of program and performance budgeting, ensuring effective control over them.	.543	.73690	%79	3.9787
8	The GFSM application leads to the interconnection of the analytical framework based on proving all financial transactions according to the accrual basis to determine the level of government financial performance.	.680	.82458	%76	3.8085
9	The GFSM application contributes to showing financial and non-financial assets and accurately classifying them, helping monitor and control each item of assets.	.662	.81385	%78	3.8936
10	The GFSM application contributes to improving financial performance efficiency by improving the quality of financial reports and statements for the government unit	.521	.72167	%83	4.1489
	Average of means	0.619	0.78599	%80	3.99787

Table (2) above shows that both the variable "The application of GFSM achieves financial discipline and transparency through the standardization of financial reports and statements" and the sub-variable "The application of GFSM contributes to improving financial performance by enhancing the quality of financial reports and statements" obtained the highest level of agreement among the study sample individuals, with means of (4.1702) and (4.1489) respectively, with a percentage of agreement of (83%) and a low standard deviation of (0.81612) and (0.72167) respectively. Meanwhile, the variable "The application of GFSM leads to the coherence of the analytical framework that is based on proving all financial operations according to the accrual basis to determine the level of government financial performance" obtained the lowest mean value of (3.8085). The overall average of the main variable was 3.9978, with a percentage of 80% and a standard deviation of 0.785, indicating the agreement of the study sample on the mechanisms of applying GFSM and its benefits in the study unit.

3. Descriptive statistical analysis of the variable "Adoption of program budgeting and performance" was conducted using 10 sub-variables. The results of the study sample's responses were as follows:

Table (3) Descriptive statistical analysis results of the Adoption of Program and performance budgeting variable.

	Sub-Variable Mean	Coefficient of Variation	Standard Deviation	Percentage of Mean	Mean
1	It implementation of program and performance budgeting contributes to achieving the vision and strategic objectives of the government in proportion to the allocated budget.	.378	.61510	%86	4.2766
2	It implementation of program and performance budgeting helps in identifying and monitoring the implementation of programs and activities as cost centers that consume expenditures	.694	.83295	%79	3.9574
3	The application of program and performance budgeting requires the allocation of expenses according to the specific objectives of each program or activity, which helps in evaluating the efficiency of the government unit's performance	.531	.72869	%85	4.2340
4	It also requires identifying the expected costs of each program or activity, which contributes to improving the services provided.	.732	.85541	%82	4.0851
5	Program and performance budgeting requires identifying performance indicators for use in measuring outputs and comparing them with planned programs and activities	.422	.64949	%86	4.2766
6	It also contributes to activating accountability at the program, activity, and tunnel unit levels, leading to improving the efficiency and effectiveness of performance and rationalizing public spending	.608	.77960	%83	4.1489
7	The implementation of program and performance budgeting helps in periodically monitoring performance and preparing performance reports	.800	.89453	%81	4.0638
8	The presentation of program and performance budgeting is consistent with IPSAS by identifying the objectives set for estimating expenditures and revenues with expected results	.539	.73438	%79	3.9362
9	The preparation of program and performance budgeting is also in line with GFSM in linking expenditures to the objectives of the overall financial policy to improve decision-making on the allocation of financial resources in the budget	.539	.73438	%79	3.9362
10	The application of program and performance budgeting contributes to transparency of information on the government unit's performance,	.670	.81838	%79	3.9362

	which helps activate public accountability				
	Average of means	0.591	0.76420	%82	4.0841

The table (3) above demonstrates that both the variable "The application of program and performance budgeting contributes to achieving the organization's vision and strategic objectives in proportion to the allocated budget" and "The application of program and performance budgeting requires identifying performance indicators to be used in measuring outputs" achieved the highest level of agreement among the study sample individuals. The means were 4.2766 and the percentage of agreement was 86%, with a low standard deviation of 0.61510 and 0.6494, respectively. Additionally, the sub-variables numbered (2, 8, 9, 10) were also obtained. Variable (2) had the lowest mean value of 3.9362, with a percentage of 79% and a standard deviation of 0.8329, while variables (8, 9) had a mean value of 0.73438, and variable (10) had a mean value of 0.81838, all with low standard deviations. The overall average of the main variable was 4.0841 with a percentage of 82% and a standard deviation of 0.76420, indicating that the study sample agreed on the mechanisms for adopting program and performance budgeting and its benefits in the study unit.

Table (4) Average of means for the main study variables.

	variables	Main	Percentage of Mean	Standard Deviation	Coefficient of Variation
1	Implementation of IPSAS	4.07871	%82	0.783688	0.6256
2	Implementation of GFSM	3.99787	%80	0.78599	0.619
3	Adoption of program and performance budgeting	4.0841	%82	0.76420	0.591
	Average of means	4.05356	%81.333	0.7779	0.61186

The table (4) above shows that among the variables studied, the "Application of Program and Performance Budgeting" received the highest level of agreement from the sample, with an overall mean score of 4.0841 and a percentage agreement of 82%, along with the lowest standard deviation among the variables. In contrast, the variable "Application of GFSM" received the lowest level of agreement with an overall mean score of 3.99787, a percentage agreement of 80%, and a standard deviation of 0.619. However, the results indicate that all variables had a high level of agreement among the study sample, with minimal differences between them, highlighting the importance and benefits of implementing these variables in local government units. The overall mean score for all variables was 4.05356, with a percentage agreement of 81.333% and a small standard deviation of 0.61186.

5. Results and Discussions:

5.1 Hypothesis Testing

This section focuses on testing the relationship between the application of International Public Sector Accounting Standards (IPSAS) and the adoption of program and performance budgeting. The study will use a simple linear regression model to analyze the relationship between the independent variable (application of IPSAS) and the dependent variable (adoption of program and performance budgeting). The first hypothesis of the study suggests that there is a significant statistical relationship and effect of applying IPSAS on the adoption of program and performance budgeting. To test this hypothesis, the following steps will be taken:

- Pearson's correlation coefficient was utilized to assess the relationship between the two variables, and the resulting correlation coefficients are presented in the table below.

Table (5) Correlation Coefficient Results for (IPSAS) and Program Budgeting Variables.

		IPSAS	BUDGET
IPSAS	Pearson Correlation	1	.721**
	Sig. (2-tailed)		.000
	N	47	47
BUDGET	Pearson Correlation	.721**	1
	Sig. (2-tailed)	.000	
	N	47	47

** . Correlation is significant at the 0.01 level (2-tailed).

The results presented in Table (5) demonstrate a strong positive correlation between the independent variable (IPSAS) and the dependent variable (program and performance budgeting), with a correlation coefficient of 0.721 and a significance level of 0.05, which was found to be significant at 0.000. These findings suggest that the greater the extent to which IPSAS is applied, the more likely it is for program and performance budgeting to be adopted. This is due to the fact that the application of IPSAS facilitates the establishment of a consolidated and integrated financial database within the sample unit, enabling financial information related to various programs and activities to be shared across departments responsible for planning, implementation, and budgetary control. Consequently, the adoption of program and performance budgeting is likely to be facilitated.

- Regression analysis: The results of the simple linear regression analysis indicate that there is a significant positive relationship between the independent variable (IPSAS) and the dependent variable (program and performance budgeting). The correlation coefficient (R) value of 0.721 suggests a strong positive relationship between the two variables. Additionally, the determination coefficient (R²) value of 0.520 indicates that 52% of the variance in the dependent variable can be explained by the independent variable, while the remaining variance can be attributed to other factors not included in the model. This suggests that the application of IPSAS has a significant impact on the adoption of program and performance budgeting in local government units.

Table (6) Correlation values in the regression model.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721 ^a	.520	.510	.36908

The results of the analysis of variance for the regression equation show that the calculated value of F was 48.816 with a significance level of 0.000, which is less than the adopted level of significance of 0.05. This indicates that the regression model as a whole has high statistical significance. The results of the regression equation coefficients shown in the table below indicate this.

Table (7) Regression Coefficients Results for IPSAS and Program and Performance Budgeting Variables.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.036	.440		2.356	.023
	IPSAS	.748	.107	.721	6.987	.000

The results of the regression coefficient analysis indicate that the impact coefficient value for the variable IPSAS (β_1) is positive and reaches 0.748. This means that there is a higher possibility of adopting a program and performance budget with the application of international standards. The value of t was equal to 6.987, with a significance level of 0.000, which is less than the adopted significance level of 0.05. Therefore, the main hypothesis is accepted, and it can be said that there is a significant relationship and impact of applying IPSAS on the adoption of a program and performance budget. This result confirms the necessity of reforming the government accounting system by transitioning to a more advanced stage than the general budget in the Kurdistan region of

Iraq and Iraq in general by applying IPSAS. IPSAS aims to use a set of standards that support decision-making about the budget approach directed towards programs and performance to assist in the effective management of public funds.

- Testing and analyzing the relationship between GFSM and Program and performance budgeting:

In this section, we will examine and analyze the relationship between the independent variable GFSM and the dependent variable (adoption of program and performance budgeting) to test the second main hypothesis of the study. This hypothesis states that there is a significant relationship and impact of applying GFSM on the adoption of program and performance budgeting. To test this hypothesis, we will follow the steps outlined below:

- Correlation analysis: The correlation coefficient between the variables in the relationship is shown in the following table:

Table (8): Correlation coefficients for GFSM and program budgeting and performance adoption.

		GFSM	BUDGET
GFSM	Pearson Correlation	1	.828**
	Sig. (2-tailed)		.000
	N	47	47
BUDGET	Pearson Correlation	.828**	1
	Sig. (2-tailed)	.000	
	N	47	47
**. Correlation is significant at the 0.01 level (2-tailed).			

Based on Table 8, a strong positive causal relationship was found between the adoption of program and performance budgeting and the application of the Government Finance Statistics Manual (GFSM), with a correlation coefficient value of 0.828 and a high level of statistical significance of 0.000, which is smaller than the adopted level of significance of 0.05. This indicates the essential relationship between the two variables. GFSM contributes to the preparation and development of program and performance budgets through the adoption of a process of planning and coordinating government functions. This, in turn, helps in preparing and estimating expenditures and revenues, presenting and analyzing alternative ways to implement programs and activities for the government unit.

- Regression Analysis: The results obtained from the simple linear regression equation applied to the correlation coefficient (R) show a value of (0.828), indicating a strong positive correlation. The coefficient of determination (R²) was (0.685), which indicates that approximately 69% of the variation in the dependent variable can be explained by the independent variable. This percentage is quite high.

Table (9) shows the correlation coefficient results for the regression equation for the variables (GFSM) and Program and performance budgeting

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.828 ^a	.685	.678	.29896

The results of the analysis of variance show that the calculated F-value was (97.780), which is highly significant with a p-value of (0.000), indicating that it is smaller than the adopted level of significance of (0.05). This suggests that the regression model between the independent and dependent variables as a whole has a high statistical significance. The results of applying the regression equation produced coefficients, as shown in the table below:

Table (10) shows the regression coefficients results for the variables (GFSM) and program budget.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.576	.357		1.614	.114
	GFSM	.878	.089	.828	9.899	.000

The regression equation coefficients showed a positive value of 0.878 for the coefficient of the statistical government indicator variable (β_1), indicating that a higher application of the GFSM results in a greater likelihood of adopting program and performance budgeting. The value of t was 9.899 with a p-value of 0.000, which was smaller than the established significance level of 0.05. Therefore, the second main hypothesis was accepted, indicating a significant relationship and influence of the GFSM on adopting program and performance budgeting. These findings confirm the crucial role of GFSM in adopting program and performance budgeting in the study sample unit. The GFSM focuses on identifying, tabulating, summarizing, and presenting programs and activities, covering expenditure items, determining revenues, expenses, assets, and liabilities, and coding them according to the international code. This enhances information transparency and classification, which serves the administrative decision-making process.

- The current section aims to analyze the relationship between the two main independent variables, namely the application of IPSAS and GFSM, and the dependent variable of adopting program and performance budgeting, using the standard multiple regression model. The primary hypothesis of the study, which posits that there is a significant relationship and effect between the application of IPSAS, GFSM, and the adoption of program and performance budgeting, will be tested using the model. The following steps will be undertaken to test the hypothesis:

- Correlation analysis: The Pearson correlation analysis was used to analyze the variables in the model, and the correlation coefficients between the variables are presented in the following table:

Table (11) Results of correlation coefficients between IPSAS, GFSM, and program and performance budgeting variables.

		IPSAS	GFSM	BUDGET
IPSAS	Pearson Correlation	1	.718**	.721**
	Sig. (2-tailed)		.000	.000
	N	47	47	47
GFSM	Pearson Correlation	.718**	1	.828**
	Sig. (2-tailed)	.000		.000
	N	47	47	47
BUDGET	Pearson Correlation	.721**	.828**	1
	Sig. (2-tailed)	.000	.000	
	N	47	47	47

** . Correlation is significant at the 0.01 level (2-tailed).

According to the results presented in the table, it is evident that there is a strong positive relationship between the independent variable IPSAS and the dependent variable, with a correlation coefficient value of 0.721. This relationship is also statistically significant at a significance level of 0.05, with a calculated significance level of 0.000. Similarly, the relationship between the independent variable GFSM and the dependent variable is also strong, with a correlation coefficient value of 0.828. This relationship is also statistically significant at a significance level of 0.05, with a calculated significance level of 0.000. These findings indicate a strong correlation between the application of IPSAS, GFSM, and the adoption of program budgeting and performance, as both depend on the accrual accounting basis. Their joint application ensures the provision of financial statements

with high credibility and transparency regarding the activities and programs of the study sample unit.

2. Multiple Regression Coefficients: The results obtained from the regression equation reveal that the correlation coefficient (R) has a value of (0.848), which confirms the presence of a high positive correlation between the independent variables and the dependent variable. The coefficient of determination (R²) was (0.719), indicating that 72% of the variation in the dependent variable is explained by the independent variables. These findings confirm the strong relationship between the independent variables and the dependent variable, highlighting the significance of concurrently implementing both IPSAS and GFSM to effectively adopt Program and performance budgeting process.

Table (12) Correlation Coefficients for Regression Equation of IPSAS, GFSM, and Program and performance budgeting Variables.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.848 ^a	.719	.706	.28586

The results of the analysis of variance show that the computed value of F is 56.194, which is significant at a significance level of 0.000, smaller than the adopted level of significance of 0.05. This indicates that the regression model as a whole between the independent and dependent variables has high statistical significance. The coefficients of the regression equation are presented in the table below:

Table (13): Results of the regression equation coefficients for the variables (IPSAS) and (GFSM) and program and performance budgeting.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.266	.368		.722	.474		
	IPSAS	.272	.119	.262	2.285	.027	.485	2.062
	GFSM	.678	.122	.640	5.569	.000	.485	2.062

The regression coefficients suggest that the impact coefficient of the IPSAS variable (β_1) has a positive value of 0.272, which is significant with a t-value of 2.285 and a significance level of 0.027, smaller than the adopted significance level of 0.05. The impact coefficient of the GFSM variable (β_2) is 0.678, with a t-value of 5.569 and a significance level of 0.000, also smaller than the adopted significance level. Therefore, the main hypothesis is accepted, and it can be concluded that there is a relationship and impact of implementing both IPSAS and GFSM in adopting program and performance budgeting. This means that applying both IPSAS and GFSM in the study unit will be useful tools for reforming and improving its financial situation. By adopting program and performance budgeting, financial resources can be managed efficiently through activities and programs that aim to achieve strategic objectives.

6. Conclusions:

Based on the current study and a review of previous research, it can be concluded that previous studies have focused more on the adoption of International Public Sector Accounting Standards (IPSAS) and the Government Financial Statistics Manual (GFSM) separately for adopting performance-based budgeting. As a result, this study took another step forward and showed that the application of both IPSAS and GFSM in government units in the Kurdistan region contributes significantly to enhancing their ability to adopt Program and performance budgeting. The consensus rate among academics and practitioners on the mechanisms and benefits of IPSAS application in government units in the Kurdistan region reached 82%. Similarly, the agreement percentage for implementing

GFSM and program and performance budgeting in government units in the Kurdistan region reached 80% and 82%, respectively. Therefore, the integrated application of both IPSAS and GFSM helps in effectively adopting program and performance budgeting in government units in the Kurdistan region of Iraq.

Based on the aforementioned conclusions, this study emphasizes the significance of establishing an academic, scientific, and professional environment that promotes the implementation of International Public Sector Accounting Standards (IPSAS) through providing training courses to enhance the skills and knowledge of accountants and auditors. This also involves increasing public awareness about the importance and role of these standards. Moreover, the study highlights the importance of prioritizing the Government Finance Statistics Manual (GFSM) and its full implementation in all government units to improve financial performance and achieve public objectives by optimizing public expenditures. Lastly, the study underscores the necessity of transitioning from budgeting based on line items to program and performance budgeting to provide specific standards for evaluating government financial performance, and for monitoring and measuring the efficiency of public revenues. This necessitates attention to perspectives that call for the adoption of program and performance budgeting.

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