

## Evaluating the Reality and Prospects of IPSAS Implementation in Algeria

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### Abstract

**Purpose:** This study aims to illuminate the current state of public sector accounting in Algeria and explore the prospects for transition to International Public Sector Accounting Standards (IPSAS) by investigating the potential advantages and challenges as critical factors affecting implementation.

**Design/Methodology/Approach:** The study adopts quantitative approach. Data were collected through questionnaires from a sample of 163 participants working in the financial and accounting departments of government departments across five provinces in eastern Algeria. PLS-SEM was employed to analyze the data and test the proposed model.

**Findings:** The study revealed that international harmonization, structural and organizational transformation, and skills significantly impacted IPSAS implementation in Algeria. However, the findings showed that the effect of the accrual basis poses a challenge due to a skills gap.

**Practical Implications:** This study provides important insights for officials, highlighting the need to strengthen the regulatory and legal framework for government accounting, develop employee skills through comprehensive training programs, and adopt a gradual implementation to ensure a smooth and successful transition to IPSAS.

**Originality/Value:** This study provides an original and timely contribution to understanding the factors driving the successful implementation of IPSAS in Algeria. By analyzing the potential advantages and challenges, this study provides valuable practical, context-specific insights for officials and contributes to understanding the path of international accounting reforms.

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## INTRODUCTION

In recent years, many countries have increasingly adopted International Public Sector Accounting Standards (IPSAS), viewing this transformation not only as an accounting practice but also as a strategic policy that significantly affecting government performance. International organizations advocate the application of these standards because they enhance public sector reporting, improve financial management, and increase government professionalism (Polzer et al. 2021; Al-Kharabsheh 2021). IPSAS adoption is entirely voluntary, with some countries fully adopt the standards, while others adapted them to their context (Amiri and Hamza 2020; Christiaens et al. 2010). Accrual accounting has emerged as a pivotal element in public sector reforms, primarily led by developed countries, underscoring its role in enhancing transparency and accountability (Jones and Pendlebury 2010). Developing countries have also increased their interest in transitioning from cash accounting to the accrual basis of accounting to enhance the credibility of financial information and improve governance (Tawiah 2023; Alshujairi 2024; Miraj and Wang 2019).

Similarly, Algeria has taken a decisive step towards reforming its public sector accounting framework through two main pillars: enhancing budget transparency and improving public administration performance (Cheurfa 2022). The aim is to adopt IPSAS, which are expected to making better decisions, allocating resources, reducing corruption, and increasing coordination among various stakeholders (Boumediene and Benramdane 2024). However, this transformation faces challenges due to Algeria's specific economic and political context, characterized by using laws inspired by French regulations since independence. This places Algeria in a transitional phase that requires effective management of change.

The implementation of IPSAS is a relatively recent topic in Algeria, and studies have begun to explore this new path. Bouabbana (2020) revealed that the project to modernize public accounting will achieve many economic benefits, but the pace of reforms is slow due to the lack of readiness in the Algerian environment. Acha and Ghouini (2020) noted that the cash accounting method used is not suitable for modern public finance management practices and concluded that Algeria faces challenges, such as poor training and a legal and technical gap in the public accounting system, impeding the IPSAS application. Khechaimia (2022) and Boudjellal (2024) indicated that these reforms are part of a new governance approach in the public sector, progressing towards adopting IPSAS, where the success or failure of this process is linked to effective change management measures. Bey (2022) asserts that the significant challenge to the success of this transformation hinges on Algeria's capacity to integrate into the international environment.

These studies have provided important insights. However, the current state of the public sector remains interesting and deserves further research. Rather than analyzing new laws or soliciting general opinions, this study aims to illuminate the current landscape of public sector accounting and explore the prospects for Algeria's transition to IPSAS by evaluating critical factors affecting implementation, categorized as advantages that facilitate and challenges that hinder the process. This research employs a quantitative approach, utilizing a survey of 163 public sector employees in eastern Algeria and analyzing the data with PLS-SEM.

The paper contributes to provide a comprehensive understanding of the complexities involved in transitioning to IPSAS, which enriches international literature and offers valuable insights for policymakers and managers.

The paper is structured as follows: Section 1 presents the theoretical foundations of IPSASs, examines the current status of public accounting in Algeria, and provides a literature review and the factors affecting IPSAS implementation. Section 2 outlines the research methodology and tools used. Section 3 presents the results and discussion, while the final section presents conclusion, implications, and limitations.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### Theoretical foundation of IPSASs

The issuance of IPSASs traces back to the Public Sector Committee (PSC) of the International Federation of Accountants (IFAC), which later evolved into the International Public Sector Accounting Standards Board (IPSASB) (Polzer et al. 2021). IPSASB, as an independent board, aims to enhance global public financial management by elevating the quality and transparency of public sector financial reporting (IPSASB 2022).

The standards developed in two phases: from 1996 to 2002, when the IPSASs follow International Accounting Standards/International Financial Reporting Standards (IASs/IFRS) with minor adjustments in terminology, definitions, and commentary (Polzer et al. 2021). Since 2003, the IPSASB has prioritized issues specific to the public sector, such as non-exchange transactions and budget implications on financial reporting (Chan 2006).

The IPSASB issues accounting standards and recommended practice guidelines that promote applying the accrual basis. To support the accuracy and transparency of financial statements, the IPSASB

continuously updates these standards. IPSASs are designed to address the unique characteristics of public sector entities whose mission is to serve the public, primarily fund their activities through public resources, and do not aim to generate profits (IPSASB 2022). A conceptual framework supports applying IPSAS by defining the primary elements of financial statements and ensuring consistency in accounting practices. The framework comprises an integrated set of concepts and principles that clarify the objectives of general-purpose financial reporting (GPFs), which are primarily to provide information useful for accountability and decision-making. It specifies the qualitative characteristics of information that support achieving these objectives, the criteria for recognition of elements, the measurement bases for assets and liabilities, and the presentation of information in GPFs (IPSASB 2023). The IPSASB's approach, through standards, guidance, and a conceptual framework, emphasizes enhancing the quality and comparability of financial information to meet user needs and promote transparency and accountability in the public sector (Kicová 2017; IPSASB 2022).

### **The current situation of the public accounting system in Algeria**

Algeria has repeatedly reformed its accounting system. In 1995, it adopted the "State Accounting Plan" project, which was quickly abandoned due to incompatibility with international practices. In 2005, it embarked on the "Modernization of Budget Systems Project" which aimed to develop public sector accounting through effective public expenditure management, cost analysis, and asset accounting to improve information quality and budgetary transparency (Kissi 2012; Khechaimia 2022). However, the implementation of the project faced problems in practice because the legal framework was not changed in parallel.

### **Issuance of Organic Law 18-15**

Organic Law 18-15 was issued on September 2, 2018, replacing Law 84-17, the first budget law. The previous law used a means-based management approach, overlooking performance results. The budget lacked homogeneity, and its preparation method was not appropriate for strategic projects requiring multi-year planning (Daddi-ddoun and Oudai 2013; Benkouider 2023). Conversely, the new law incorporates results-based management to direct public spending, bestows greater flexibility upon managers in reallocating funds, and restructures the budget to encompass a multi-year perspective (Fahas et al. 2022).

### **Issuance of Law 23-07 of the rules of public accounting and financial management**

It was important to change the previous Law 90-10 because it used statistical records to record transactions and prepare government financial statements on a cash basis, and it collected information at the central level with the aim of monitoring flows and implementing the budget, and it did not evaluate assets (Cheurfa 2022). To overcome these limits, Law 23-07, issued on June 21, 2023, introduced significant reforms, including the adoption of three accounting types- budgetary, general, and cost accounting- and shifted towards a management style focused on goals and achieved results. The law mandated the preparation of financial statements recommended by IPSAS. Furthermore, Law 23-07 enhanced control mechanisms and emphasized the integration of information and communication technology in public accounting practices (Loi n° 23-07 2023).

### **Advantages of implementing IPSAS**

The numerous advantages of IPSAS have encouraged widespread recognition and implementation by countries. The literature review suggests that transparency and accountability, accrual basis, and international harmonization are the main perceived advantages of these standards, which are important drivers for their implementation because they add value to public sector financial and reporting.

### **Transparency and accountability**

Transparency and accountability are features that have always been associated with IPSAS. Transparency involves easily accessible information about government policies, budgeting, and accounting, enabling a clear understanding of government performance (Krah and Mertens 2023). Accountability, as described by Rodríguez, encompasses the responsibility of managers to report on resource utilization and the capacity of citizens to hold them accountable. Williams and Hussein (2019) emphasizes the inherent relationship between these concepts, as transparency, through its commitment to responsibility, fosters citizen participation and enhances accountability. Research supports the idea that implementing IPSAS enhances transparency and accountability. Ogbuagu and Onuora (2019) and Tawiah (2023) explained that adopting these standards in developing countries will improve the quality of financial reporting and increase transparency and accountability between government and citizens. Bolívar et al. (2015) highlighted how IPSAS accounting measurements enhance transparency and accountability by improving information quality, understandability, and timeliness. Accordingly, the study hypothesizes that greater awareness of the

importance of these features is a powerful driver of IPSAS implementation in Algeria.

**H1:** Transparency and accountability have a significant impact on the implementation of IPSAS.

### **Accrual Basis**

IPSAS encompasses both accrual basis standards and a cash-based standard. The cash-based standard, however, is not intended as a target, but is applied as a transitional step towards applying the accrual basis (IPSASB 2017). Cash-based accounting has shown its limitation, because it only recognizes transactions when cash is exchanged, which hindering the decision-making, and leading to inaccurate financial positions; such as because it records properties and inventories as expenses within a single financial year and does not account for provisions unless emergency liabilities arise (Ashoka and Aswathy 2020). Conversely, accrual accounting emerges as the best approach, because of its ability to describe the reality of government activities and determine their costs (Shehadeh 2022), as it recognizes revenues and expenses as they occur, regardless of the receipt or payment of money. By recognizing assets and liabilities, accrual accounting facilitates better management and control of government resources, and improves the reliability and comparability of financial reports (Narsaiah 2019; Saleh et al. 2021). This approach aids in waste reduction and combatting fraud and corruption, ultimately contributing to social and economic development (Correa Silva et al. 2022; Alshujairi 2024; PWC 2012). Consequently, this study hypothesizes that the benefits achieved by applying the accrual basis will be a strong motivation for implementing IPSAS.

**H2:** Accrual basis has a significant impact on the implementation of IPSAS.

### **International harmonization**

IPSAS plays a crucial role in achieving harmonization in government accounting practices, enhancing the state's interaction with individuals, groups, and countries as partners within a global economic network (Amiri and Hamza 2020). Harmonization under IPSAS encompasses the convergence of accounting principles, rules, and methods, as well as the content of financial statements (Kicová 2017), which helps to reduce differences, eliminate additional reporting obligations, and ultimately foster an environment conducive to attracting foreign investment (Narsaiah 2019; ACCA 2017).

Furthermore, the adoption of IPSAS aligns with the recommendations of international organizations and countries that grant financial aid and loans by adopting best practices in financial reporting and promoting accountability and transparency (Amiri and Hamza 2020). Abu Hajja et al. (2021) confirmed that countries adopt IPSAS to enhance their economies, gain global recognition, and attract capital investments. Salia and Atuilik (2018) emphasized the positive impact of IPSAS on financial reporting quality, which in turn increases opportunities for foreign aid and foreign direct investment, supporting national development goals. Implementing IPSAS will establish a common global language and confer international legitimacy (Bouabbana 2020; Correa Silva et al. 2022).

The study assumes that implementing IPSAS will support the harmonization of government accounting in Algeria with international practices, leading to more qualitative and comparable financial statements.

**H3:** International harmonization has a significant impact on the implementation of IPSAS.

### **Challenges of implementing IPSAS**

IPSAS implementation poses several challenges as it demands comprehensive adjustments, encompassing legal and structural changes, technical capabilities, investment in infrastructure, implementation strategies, and associated costs (Ahmad and Nasserredine 2019).

#### **Cost**

The promised benefits of IPSAS do not justify the high costs associated with their implementing (Ahmad and Nasserredine 2019). International organizations recognize the significant financial burdens that accompany adopting IPSAS, which includes developing new information systems and extensive training programs on accrual accounting practices, as well as the costs of getting help from external consultants, and translation expenses (PWC 2012; ACCA 2017; IPSASB 2014). Schmidhuber et al. (2020) found that high costs as one of the major barriers to implementing IPSAS. PWC (2014) emphasized that governments with lower maturity in accounting and IT systems, such as those using cash-based accounting, will need to invest in modernizing their system, facing higher costs relative to GDP compared to governments with more mature systems. Similarly, Salia and Atuilik (2018) noted that the cost of transitioning to the standards in Liberia poses a threat to the realization of their potential benefits of their implementation. In Ghana, Agyemang (2017) found that research costs, training, acquisition of software and hardware, and IPSAS maintenance significantly affect the adoption of these standards. Whitefield and Savvas (2016) reported that high costs negatively affected the adoption of standards in Kenya. Redmayne et al. (2019) focused on audit costs and found that they have increased after the IPSAS were adopted in New Zealand.

This study assumes that implementing IPSAS necessitates substantial investments in human resources development, infrastructure preparation, and organizational resources. These costs are considered a major challenge that affects implementing the standards in Algeria.

**H4:** Cost has a significant impact on the implementation of IPSAS.

### **Skills**

Accrual accounting requires high skills because it is more complex compared to cash accounting (Haji Din and El Haron 2023; Shehadeh 2022), so the successful implementation of IPSAS is linked to the presence of qualified individuals with the necessary skills and knowledge. Skills encompass a range of factors, including knowledge, qualifications, and training, which together contribute to determining the competence and capabilities of individuals. According to Tanjeh (2016), the greater awareness and knowledge lead to a more profound understanding of IPSAS, facilitating its adoption. As for training, it ensures a better scenario for adopting standards because it meets the needs of employees, as it helps identify the new system, share information, and accommodate changes (Shehadeh 2022). Several studies highlight the importance of skills in IPSAS implementation. For example, Wang and Miraj (2018) found that South Asian countries suffer from a significant shortage of skills and capabilities, which has caused slow implementation of standards. Al-otoom and Alrabba (2022) concluded that employees' lack of self-efficacy led to resistance in Jordan.

This study assumes that implementing IPSAS is complex and requires more skills than those applied in current accounting, which will be a major challenge to implementation.

**H5:** Skills have a significant impact on the implementation of IPSAS.

### **Structural and organizational transformation**

Implementing IPSAS requires changing local regulations and laws to provide the appropriate legal and regulatory support in line with international requirements. The interpretation of public sector reform by governments can range from minimal legislative adjustments to substantial transformations of accounting practices. Roje et al. (2010) noted that countries with developed national accounting systems have made significant progress in implementing accrual accounting, which has supported their compliance with standards and harmonization of their accounting practices, while those using cash-based or modified cash-based systems experience slower transitions. PWC (2014) further suggests that national legislation plays a crucial role in driving accounting maturity, which countries with mature accounting systems require fewer structural changes to implement IPSAS, whereas those with lower maturity face substantial legislative and organizational obstacles, requiring significant reforms to meet IPSAS standards practices. This process is complex and time-consuming, often spanning several years (ACCA 2017). Studies such as those by Aboukhadeer et al. (2023) on Libya and Salia and Atuilik (2018) on Liberia underscore that conflicts between national legal frameworks and IPSAS requirements present significant obstacles to successful adoption.

Brusca et al. (2016) and Zibaghafa and Okpolosa (2024) argue that updating accounting systems and infrastructure is essential because traditional government sector accounting technologies and structures are no longer suitable. This development will facilitate the implementation of standards and improve accounting practices and the quality of financial statements (Haji Din and El Haron 2023; Maruf 2024). Abu Haija et al. (2021) and Whitefield and Savvas (2016) support the idea that investment in technology is a potent motivator to implement IPSAS.

This study recognizes the critical role of legal reform and infrastructure development in the transition to IPSAS in Algeria, highlighting them as significant challenges to successful implementation.

**H6:** Structural and organizational transformation has a significant impact on the implementation of IPSAS.

## **RESEARCH METHODOLOGY**

### **Instrument construction**

The questionnaire is the most appropriate tool to study this topic. It enables the collection of data in a coherent and internally consistent manner (Roopa and Rani 2012). Closed-ended questions were used because they have greater uniformity in answers, reduce errors in understanding questions and variation in answers, and allow comparison between respondents (Auriacombe 2010; Meadows 2003). The questionnaire, consists of seven variables, was formulated based on relevant studies, with some modified to suit the current situation in Algeria, and then it was presented to arbitration for revision (Appendix1). A 5-point Likert scale was used as a tool to measure and understand the attitudes of respondents (Tanujaya et al. 2022).

### Data collection and sample description

The research targeted employees of financial and accounting departments in government administrations in eastern Algeria, specifically in the provinces of Annaba, Skikda, El-Tarf, Guelma, and Tebessa, according to the effort and time of the researcher. These individuals were intentionally selected because they are concerned with public accounting implementation and have characteristics and knowledge that align with the research objectives. 163 questionnaires were collected as the employees were very discreet. The sample included 13 accountants, 31 financial managers, 60 administrators, and 59 other positions such as administrative assistant or engineer. 33.1% of them have a bachelor's degree, 42.3% have a master's degree, and 24.5% have other non-university degrees or mostly university degrees in other specializations such as statistics and computer science. 71% of respondents have more than 16 years of professional experience, while 77% of them have 11 to 15 years of experience, and the rest have less than 5 years of experience.

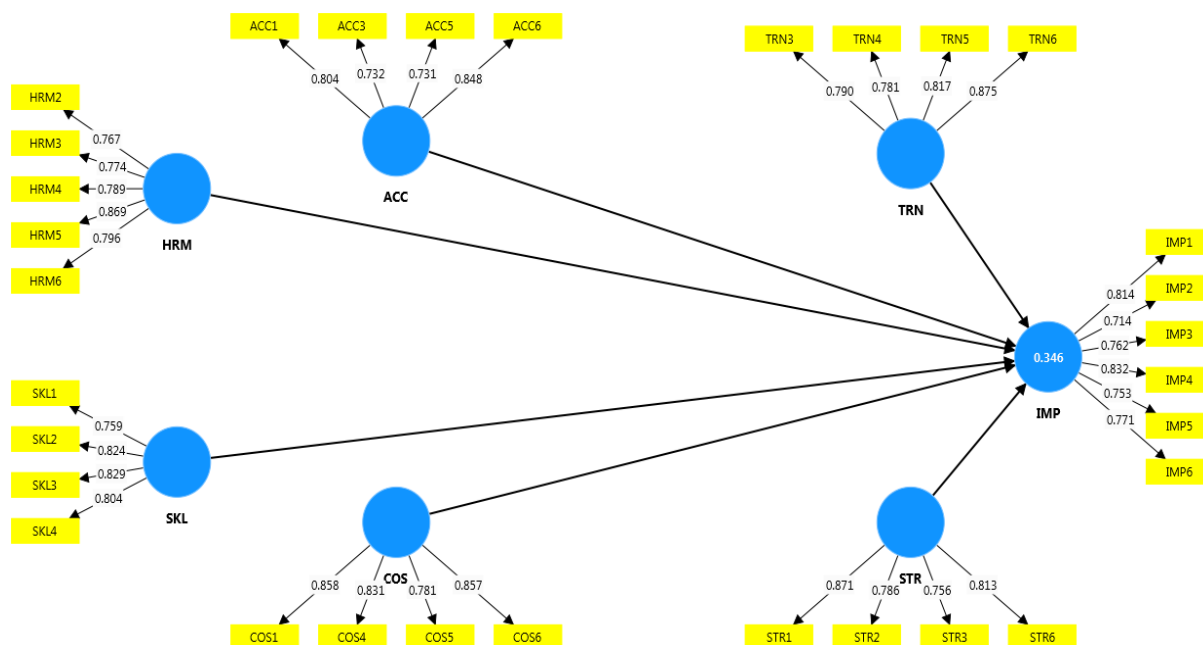
## RESULTS

Partial least structural equation modeling (PLS-SEM) was used; which is considered a predictive analysis tool that helps forecast causal relationships for designed structural models (Sarstedt et al. 2020; Purwanto and Sudargini 2021). The data were analyzed in two stages according to several procedures defined by Hair et al. (2021). The first stage was to examine the quality of the reflective measurement model, and in the second stage, the structural model was evaluated.

### Assessment of Measurement Model

#### Indicator Reliability

It is important that the measurement model is satisfactory so that the structural model is properly evaluated (Wong 2019). Examination of indicator loadings revealed that some of them were below the recommended threshold of 0.708, so the items were removed. According to Hair et al. (2017), the basic rule is that the latent variable contains at least 4 indicators with a factor loading greater than 0.7, as this allows explaining a significant part of the variance of the indicators. Removing the mentioned items achieved this rule in the final model as shown in following figure:



Source: Data processed (2024)

Figure 1. Measurement Model

#### Internal consistency reliability

Internal consistency reliability is an important property that shows the consistency of responses that measure the same construct (Ursachi et al. 2015; Collier 2020). Cronbach's alpha values, as shown in Table 1, exceeded the recommended value of 0.7, indicating an ideal level of reliability (Souza et al.2017). Researchers also advocate reporting composite reliability because it is more accurate and provides higher

reliability estimates (Garson 2016; Hair et al. 2020). The results in Table 1 show that both the composite reliability values “ $\rho_c$ ” and the exact reliability coefficient “ $\rho_A$ ” were greater than 0.70, which enhances the strength of the reliability of the measures used.

### Convergent Validity

Convergent validity, which reflects the extent to which indicators measure the same trait are related (Byrne 2016), was assessed through the average variance extracted (AVE). As shown in Table 1, all AVE values exceeded 0.5, indicating that constructs explain over half of the variance of their indicators (Hair et al. 2017). This finding is considered strong evidence for the convergent validity of the measurement model.

**Table 1.** Reliability estimates

Variables	Cronbach's alpha	$\rho_A$	$\rho_c$	AVE
ACC	0.794	0.838	0.861	0.609
HRM	0.859	0.867	0.899	0.640
COS	0.852	0.859	0.900	0.693
IMP	0.867	0.873	0.900	0.601
SKL	0.819	0.821	0.880	0.647
STR	0.823	0.837	0.882	0.653
TRN	0.833	0.835	0.889	0.666

Source: Data processed (2024)

### Discriminant validity

Discriminant validity refers to the extent to which items relate to each other in a way that distinguishes each construct from other constructs (Zaiț and Berteau 2011). The Fornell-Larcker criterion was used, comparing the square root of the AVE of each construct with the squared correlation between the constructs. The results in Table 2 show that the square root values of AVE for each construct were the highest, providing evidence that the constructs are distinct and supporting discriminant validity.

**Table 2.** Fornell-Larcker criterion

Variables	ACC	HRM	COS	IMP	SKL	STR	TRN
ACC	0.780						
HRM	0.171	0.800					
COS	0.371	0.266	0.832				
IMP	0.201	0.365	0.360	0.775			
SKL	0.661	0.269	0.477	0.474	0.804		
STR	0.390	0.348	0.336	0.392	0.466	0.808	
TRN	0.203	0.451	0.466	0.360	0.363	0.355	0.816

Source: Data processed (2024)

Another measure recommended as a better alternative is the heterotrait-monotrait ratio (HTMT), which examines the correlation between indicators across constructs compared to the correlations within each construct (Collier 2020). The results in Table 3 show that all HTMT values did not exceed the threshold of 0.85 (Henseler et al. 2015), further confirming the discriminant validity of the measurement model.

**Table 3.** Heterotrait-monotrait Ratio

Variables	ACC	HRM	COS	IMP	SKL	STR
HRM	0.202					
COS	0.446	0.311				
IMP	0.220	0.415	0.408			
SKL	0.821	0.308	0.572	0.546		
STR	0.490	0.420	0.410	0.454	0.575	
TRN	0.256	0.530	0.563	0.415	0.448	0.442

Source: Data processed (2024)

Good results obtained regarding internal consistency reliability, convergent validity, and discriminant validity are considered indicator of the quality of the measurement model and construct validity, allowing the transition to structural model evaluation.

### Evaluation of the structural model

The structural model was evaluated to estimate the relationships established through a set of steps. First, it was important to examine linear relationships between constructs to identify potential multi-collinearity problems; which result from strong correlations between independent variables, which subsequently affects the reliability of test results (Garson 2016). The variance inflation factor (VIF) was used to evaluate these relationships. All VIF results, as shown in Table 4, were below the required threshold of 3 (Hair et al. 2021), suggesting that multi-collinearity is not a critical issue.

The second step was to evaluate the significance and importance of the path coefficients. Bootstrapping analysis was performed with 10,000 subsamples to estimate the weights of the indicators. Table 4 shows the path coefficients and their corresponding t-values at the 5% significance level.

The results confirm that international harmonization, skills, and structural and organizational transformation have a significant positive impact on the implementation of IPSAS, while the accrual basis has a significant negative impact on the implementation of the standards. These findings support the acceptance of hypotheses H1, H2, H4, and H5, respectively. However, cost, accountability and transparency were not statistically significant, leading to rejection hypotheses H3 and H6.

**Table 4.** Hypotheses results

Hypothesis: Path	VIF	Path coefficient	t-values	P values	Decision
<b>H1:</b> ACC -> IMP	1.835	-0.227	2.880	0.004	Supported
<b>H2:</b> HRM -> IMP	1.325	0.175	2.313	0.021	Supported
<b>H3:</b> COS -> IMP	1.508	0.111	1.318	0.187	Not Supported
<b>H4:</b> SKL -> IMP	2.177	0.426	4.335	0.000	Supported
<b>H5:</b> STR -> IMP	1.430	0.161	2.172	0.030	Supported
<b>H6:</b> TRN -> IMP	1.556	0.064	0.710	0.478	Not Supported

Source: Data processed (2024)

The next step was to evaluate the explanatory power and predictive power of the model using several measures. First, the coefficient of determination  $R^2$  was calculated to evaluate the effects of the independent variables on the dependent variable (Al-Marsomi and Al-Zwainy 2023). According to Hair et al. (2021), the  $R^2$  values of 0.75, 0.5, and 0.25 are respectively great, moderate, and weak. Alternatively, Chin (1998) suggests  $R^2$  values of 0.67, 0.33, and 0.19 are strong, moderate, and weak, respectively. The obtained  $R^2$  value of 0.346, shown in Table 5, indicates that the explanatory power of the model is moderate.

To further evaluate the predictive ability of the model, the effect size  $f^2$  was also calculated. According to the established standards, values of 0.02, 0.15, and 0.35 indicate a small, medium, and large effect size, respectively (Hair et al. 2020). The results in Table 5 show that the accrual basis, international compatibility, and structural and organizational transformation have a small effect size, while skills demonstrate an effect size approaching the average.

The third measure was  $Q^2$  assessing the predictive relevance of the model (Janadari et al. 2016). The procedure for assessing out-of-sample prediction (PLSpredict) was conducted with ten repetitions and  $k=10$  folds. According to Hair et al. (2020),  $Q^2$  values of 0.25 and 0.50 are moderate and large, respectively, so the obtained  $Q^2$  value of 0.291, presented in Table 5, suggests moderate predictive importance.

**Table 5.** Explanatory power evaluation

Path	R square	f square	Q square
<b>ACC -&gt; IMP</b>	0.346	0.043	0.291
<b>HRM -&gt; IMP</b>		0.035	
<b>COS -&gt; IMP</b>		0.012	
<b>SKL -&gt; IMP</b>		0.127	
<b>STR -&gt; IMP</b>		0.028	
<b>TRN -&gt; IMP</b>		0.004	

Source: Data processed (2024)

The mean absolute error (MAE) and the root mean squared error (RMSE) obtained with the same procedure also represent important prediction statistics. The lower values for these statistics compared to the naïve LM criterion indicate a good indicator (Hair et al. 2021). The results, presented in Table 6, demonstrate that all indicators meet the criterion, suggesting that the model has high predictive ability.



**Table 6.** Predictive power evaluation

Items	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
IMP1	0.600	0.484	0.662	0.523
IMP2	0.599	0.484	0.621	0.488
IMP3	0.665	0.537	0.712	0.555
IMP4	0.594	0.479	0.638	0.511
IMP5	0.573	0.474	0.622	0.510
IMP6	0.537	0.424	0.565	0.430

Source: Data processed (2024)

## DISCUSSION

This study highlights advantages and challenges as latent variables affecting IPSAS implementation in the Algerian context. Model analysis using PLS-SEM revealed that although transparency and accountability are recognized benefits associated with IPSAS, it had no impact on implementation ( $\beta=0.064$ ,  $P=0.478$ ), which is contrary to similar studies conducted in Iraq (AL-Quraishi and Boumediene 2023) and Jordan (Al-Kharabsheh 2021). A likely explanation for this result is that transparency and accountability do not constitute a strong motivation for implementing standards, as they may be overshadowed by other political, economic, and cultural factors that are more important in the Algerian context. For example, according to Brusca et al. (2013), political support backed by laws was a major factor in accelerating the adoption of IPSAS-aligned standards in Spain. According to Ahmad and Nasserredine (2019), Alshujairi (2024), and Babatunde (2017), the financial burden constitutes the greatest obstacle to implementing IPSAS in developing countries. Correa Silva et al. (2022) found that national culture and dominant ideology play a crucial role in implementing standards. Therefore, this result reflects the local context in which the study was conducted and testing of the hypotheses has already proven that there are other more influential factors that make it superior to accountability and transparency.

The study found a negative impact of the accrual basis on IPSAS implementation ( $\beta=-0.227$ ,  $P=0.004$ ). This result was unexpected because the accrual basis is an important feature associated with the standards. The appropriate explanation for this relationship is that the study was conducted early in the transition to IPSAS. During this period, the budget was modified into a single document as the first step towards change. However, Algeria's current public accounting system is still subject to the code-law system, applies the cash basis, and works according to the commitments-based budget as a system of parliamentary appropriations (Brusca et al. 2013). Therefore, negative perceptions are likely due to the lack of experience and knowledge necessary to apply accrual accounting. Gkouma and Filos (2022) highlight that implementing the transition to IPSAS for the first time in Greece required a deep understanding of the principles and practices of the standards. Saleh et al. (2021) also confirms that the lack of specialized employees in finance and accounting impedes the implementation of standards because the change in accounting techniques from simple cash accounting to accrual basis requires specific skills. This aligns with some observations about the study sample, as some participants possessed specializations in fields such as automation and statistics, or had lower educational levels than required, as their field experiences alone will negatively affect the understanding of accrual accounting.

International harmonization has a significant impact on IPSAS implementation ( $\beta= 0.175$ ,  $P=0.021$ ). This result aligns with previous research that has confirmed the harmonization of accounting practices and financial statements as one of the main reasons for IPSAS implementation, ultimately aiming to enhance comparability across different levels of government (Brusca et al. 2013; Christiaens et al. 2015; Schmidhuber et al. 2020; Ben Amor and Damak Ayadi 2019). In Algeria, implementing IPSAS represents the adoption of a unified global language for government accounting, fostering understanding and trust with international partners and organizations. This harmonization will facilitate integration into the global economy by streamlining cross-border transactions and attracting investors. Moreover, IPSAS implementation will improve financial management practices and ensure adherence to international disclosure requirements. Boumediene and Benramdane (2024) assert that implementing IPSAS in Algeria will legitimize the government's financial operations, aligning them with international practices. Since international harmonization implicitly improves accountability and transparency, this supports the results of the first hypothesis that its impact has overshadowed the impact of accountability and transparency.

Cost does not significantly impact on the implementation of IPSAS ( $\beta= 0.111$ ,  $P=0.187$ ). This result diverges from several studies (Alshujairi 2024; Babatunde 2017; Ahmad and Nasserredine 2019), which found that costs are one of the main obstacles facing the adoption of standards. One possible reason for this result is that the IPSAS implementation process follows a gradual approach (Mazhambe 2021), allowing for phased transformation that takes into account capabilities and resources, thereby managing costs in phases.

Although implementing IPSAS is associated with financial burdens, these are largely one-off costs spread across the project's duration and ultimately outweighed by long-term benefits that are expected to be significant PWC (2014). Diniz et al. (2015) found that understanding that the benefits of IPSAS are higher than the costs contributes to the implementation of the standards. Additionally, this result may suggest that government support, driven by Algeria's political will, has a crucial role in implementing IPSAS, as the state provides the necessary funding to cover the transfer burden, which reduces employees' perceptions of costs. This finding is clearly related to the local context, where costs are still unclear in the initial phase of IPSAS implementation.

The study indicates that skills have the most significant impact on the implementation of IPSAS ( $\beta=0.426$ ,  $P=0.000$ ). This skills gap is a common issue in many countries. For instance, (Alshujairi 2024) found that Iraq suffers from a lack of qualified accountants and trained human resources to implement IPSAS. Similarly, Ahmad and Nasserredine (2019) revealed that employees in Lebanon face practical difficulties in implementing the standards. The successful implementation of IPSAS relies heavily on the requisite skills and knowledge. In Algeria, the great challenge will be transforming the mentality of employees who have been accustomed throughout their careers to implementing balance sheet tasks. These employees will need to develop their financial and accounting knowledge to understand standards, work on an accrual basis, and evaluate assets. Takarli and Ghrissi (2024) assert that the changes associated with the application of the accrual basis in Algeria will challenge established employee. This result also suggests the difficulty of integrating employees with lower levels of education or irrelevant diplomas to understand the rules of accrual accounting, as this challenge was highlighted in the result of the second hypothesis.

Structural and organizational transformation has a significant impact on IPSAS implementation ( $\beta=0.161$ ,  $P=0.030$ ), which highlights the critical role of laws and infrastructure in facilitating the implementation of these standards in Algeria. Gkouma and Filos (2022) points out that the implementation of IPSAS requires legislative reforms to integrate it into state law. Similarly, Boumediene and Benramdane (2024) emphasized that the application of IPSAS in Algeria requires the preparation of political and legal factors. The recent legislative reforms in Algeria are a first step in encouraging the adoption of IPSAS (Boudjellal 2024). The regulatory framework for implementing the standards remains incomplete, requiring further guidelines and practical rules. Moreover, the results of this study support Zibaghafa and Okpolosa (2024) and Ademola et al. (2020) studies that confirmed that infrastructure and technology are important factors in meeting the requirements of IPSAS.

## CONCLUSION

This study examined the reality and prospects of implementing IPSAS in Algeria, highlighting the significant factors affecting it. The findings underscore the significant roles of skill development, legislative and infrastructural improvements, and enhanced international harmonization in driving successful IPSAS implementation. Interestingly, the study revealed other unexpected findings that were traditionally considered crucial for implementation. The lack of a significant impact from cost considerations, transparency and accountability, coupled with the negative impact of the accrual basis, highlights the importance of considering the environmental differences and the stage of implementation.

To the best of our knowledge, this paper is the first to identify and model the relationships between key factors affecting IPSAS implementation in Algeria. This paper contributes to the theoretical discourse on public sector reforms and the evolution of government accounting, as the findings provide an informed understanding of the potential factors impacting IPSAS implementation and illustrate their role in achieving international accounting convergence.

The findings present important practical implications. The study underscores the importance of structural and organizational reforms to facilitate IPSAS implementation. Specifically, strengthening the regulatory framework of public accounting is crucial. Achieving this will involve introducing laws and regulations that support Organic Law 18-15 and Law 23-07, in alignment with the principles of the standards. Equally important is enhancing the Accounting Board's role as an internal body including specialists and experts, to define the IPSAS implementation roadmap, monitor the process, and address challenges facing it. Furthermore, the findings indicate that the transition to accrual accounting, despite its advantages, is complex and requires the development of accounting knowledge to move away from traditional cash-based practices, and underscores the need to develop employee capabilities. These implications shed light on the importance of supporting educational curricula by teaching IPSAS. Algeria has recently taken this step partially at some university levels, but a broader application is necessary. Finally, these practical insights underscore the value of a phased approach to change management, which provides time to adapt to new systems and face challenges. To explore potential implementation barriers, a pilot program applying IPSAS within a specific sector would be beneficial. The significance of these findings extends beyond the local context of Algeria, as they provide valuable strategic insights for countries with

similar circumstances.

This research presents limitations that open avenues for future discussions. Future research could expand its scope by including other additional institutional, organizational, and individual factors. Furthermore, it would be beneficial for subsequent research to be conducted across different stages, such as pre-implementation and post-implementation periods. Moreover, the study' focus on a few provinces underscores the need for future research to use a larger, more representative sample.

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**Appendix 1. Questionnaire**

	<b>Research variables and measurement items</b>	<b>References</b>
<b>Implementation of IPSAS</b>	IMP1 - Implementation of IPSAS is one of the priorities of the Algerian government.	Whitefield and Savvas (2016)
	IMP2 - There is a clear political direction for implementing IPSAS.	
	IMP3 - The state is making efforts to provide the necessary support to implement IPSAS.	Abu Haija et al. (2021)
	IMP4 - The government is undertaking important legal reforms to move towards implementing IPSAS.	
	IMP5 - The government is adopting a clear roadmap to move towards full accreditation of IPSAS.	
	IMP6 - Our administration applies the laws established by the country in order to implement IPSAS.	
<b>Transparency and accountability</b>	TRN1 - IPSAS implementation improves the quality of financial information and supports transparency in government financial practices.	Alshujairi (2024)
	TRN2 - IPSAS provides a suitable measurement basis for financial reporting which improves government financial transparency.	Al-Kharabsheh (2021)
	TRN3 - IPSAS raises the level of disclosure and comparability of information, which increases the transparency of government financial reports.	Christiaens et al. (2010)
	TRN4 - IPSAS improves accountability for public sector performance.	
	TRN5 - IPSAS improves external oversight and accountability.	
	TRN6 -IPSAS promotes information transparency and government accountability to citizens and the general public.	
<b>Accrual basis</b>	ACC1 - Implementing IPSAS contributes to the strong adoption of the accrual basis in public sector accounting.	Shehadeh (2022)
	ACC2 - Accrual accounting is more effective than cash accounting in giving reliable information about the financial position and performance of the government.	Al-Kharabsheh (2021)
	ACC3 - Accrual basis enhances the management of expenses and receivables.	Alshujairi (2024)
	ACC4 - The accrual basis is considered more useful for managing assets and liabilities.	
	ACC5 - The accrual basis provides financial information to monitor performance and public funds against corruption.	
	ACC6 - Implementing the accrual basis improves the quality of financial reports.	
<b>International harmonization</b>	HRM1 -IPSAS implementation achieves international accounting harmonization for government agencies.	Alshujairi (2024)
	HRM2 -IPSAS implementation facilitates the consolidation of financial statements better than the current accounting system.	Al-Kharabsheh (2021)
	HRM3 - IPSAS implementation ensures that financial reporting is consistent and globally comparable.	Salia and Atuilik (2018)
	HRM4 - IPSAS implementation helps align with the requirements of international organizations and development aid providers.	Ademola et al. (2020)
	HRM5 - IPSAS implementation enhances the inflow of foreign direct investment.	
	HRM6 - IPSAS implementation facilitates the flow of foreign aid.	
<b>Cost</b>	COS1 - IPSAS implementation is associated with high costs.	Ahmad and Nasserredine (2019)
	COS2 - Seminars and training courses for IPSAS implementation are expensive.	

<b>Skills</b>	COS3	- The hardware and software required for IPSAS implementation involve significant expenses.	Whitefield and Savvas (2016)
	COS4	- Replacing of previous accounting packages incurs high costs.	
	COS5	- IPSAS maintenance costs are high.	Agyemang (2017)
	COS6	- Estimating the overall cost of IPSAS implementation is difficult.	
	SKL1	- IPSAS implementation requires a high level of specific knowledge and skills.	
	SKL2	- There is little general knowledge of IPSAS among employees.	
<b>Structural and organizational transformation</b>	SKL3	- There is a low level of awareness of the importance of IPSAS.	Miraj and Wang (2019)
	SKL4	- Training on IPSAS is necessary to enable employees to understand it.	Abu Haija et al. (2021)
	SKL5	- The current skills of public sector employees are insufficient to implement IPSAS.	
	SKL6	- Training courses available to employees regarding IPSAS implementation are insufficient.	
	STR1	- IPSAS implementation requires changing legislation and regulations.	Ahmad and Nasserredine (2019)
	STR2	- Current local legislation is not sufficient for implementing IPSAS.	
	STR3	-IPSAS implementation requires modifying accounting records and practices and modernizing the public accounting system.	Abu Haija et al. (2021)
	STR4	- IPSAS implementation requires preparing the infrastructure and having integrated ICT systems.	
	STR5	-Current hardware and software are insufficient to implement IPSAS.	
	STR6	-Government entities lack sufficient internal and external networks to facilitate the implementation of IPSAS.	