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Ipsas Implementation and Reported Financial Irregularities in Ghana's Public Sector: The Mediating Role of Financial-Reporting Timeliness

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Abstract

Abstract

This study examines the association between International Public Sector Accounting Standards (IPSAS) implementation, financial-reporting timeliness, and reported financial irregularities in Ghana's public sector. Grounded in agency theory (Jensen & Meckling 1976) and political economy theory (Weingast & Wittman 2008), the study utilizes an archival panel dataset of 729 institution-year observations from 238 public-sector entities spanning 2018 to 2025. Applying two-way fixed-effects regressions with institution-clustered standard errors, the findings reveal that progressive IPSAS implementation is significantly associated with reduced reporting lag (improved timeliness), with the most pronounced improvements occurring at advanced implementation stages (stages two and three). Furthermore, mediation analysis indicates that financial-reporting timeliness partially mediates the relationship between IPSAS implementation and reported financial irregularities, establishing a significant indirect pathway. However, a positive direct association is also observed, suggesting that enhanced implementation intensity may concurrently improve the detection and audit disclosure of previously unrecorded irregularities. The study contributes to public administration theory by integrating agency and political economy perspectives in an emerging-market context, offering practical insights for public financial management reforms and audit oversight.

1.0 Introduction

Public-sector financial management reforms globally have increasingly prioritized the transition from traditional cash-based accounting to accrual-based frameworks, notably through International Public Sector Accounting Standards (IPSAS) (Schmidthuber et al., 2022). Endorsed by international bodies like the World Bank and the IMF, IPSAS aims to enhance financial transparency, comparability, and reliability across public institutions (Opanyi, 2016; Tawiah, 2023). In developing nations such as Ghana, IPSAS implementation forms a cornerstone of public financial management (PFM) modernization intended to curb pervasive audit-reported financial irregularities and strengthen accountability to citizens (Lassou et al., 2019).

According to (Ademola et al., 2020), the growing popularity of IPSAS reflects governments' increasing recognition of the benefits of open and accountable public-sector financial reporting. Countries such as New Zealand and Switzerland report on an accrual basis using IPSAS or IPSAS-based standards, whereas most African countries, including Ghana, remain at various stages of implementation (IFAC & CIPFA, 2021). In Ghana, IPSAS implementation is viewed as a significant reform intended to address deficiencies in public-sector accounting (Lassou et al., 2019). IPSAS are valued globally because of their potential to enhance the transparency of financial reporting. Transparency in this context refers to the availability, reliability and timeliness of financial information that enables stakeholders to assess the true financial position of public institutions (Alnesafı, 2025). By prescribing standard reporting formats, IPSAS reduce inconsistency and enable stakeholders such as citizens, donors and oversight institutions

to make informed decisions. Research in Nigeria and Liberia, for instance, associates IPSAS adoption with enhanced disclosure and transparency in financial reports, enabling stakeholders to hold public officials accountable (Ademola et al., 2020; Atuilik & Salia, 2019).

Despite widespread structural reforms, public entities across sub-Saharan Africa frequently struggle with delayed financial reporting and persistent audit-reported compliance failures (Atuilik et al., 2016; Ninson, 2022). In Ghana, the Auditor-General's reports continue to document substantial monetary irregularities spanning cash, payroll, procurement, and administrative categories (Auditor-General of Ghana 2024). While extant literature largely explores the macro-level drivers of IPSAS adoption or compliance preconditions ((Saeed & Klugah, 2025; Sellami & Gafsi, 2020), critical empirical gaps persist regarding the within-institution reporting outcomes of staged implementation. Specifically, prior studies rarely evaluate whether progressive IPSAS implementation systematically reduces reporting lags, nor do they formally test the mechanism through which reporting timeliness translates into altered audit-reported irregularities.

To address this gap, this study investigates three central research questions within the Ghanaian public sector:

1. What is the relationship between IPSAS implementation stages and financial-reporting timeliness?
2. Does financial-reporting timeliness mediate the relationship between IPSAS implementation and reported financial irregularities?
3. How do these relationships operate under institution-level fixed parameters over time?

By utilizing an archival panel dataset comprising 729 institution-year observations (2018–2025) and deploying two-way fixed-effects econometric models, this paper provides granular evidence on the micro-level administrative impacts of accounting reforms.

2.0 Theoretical Framework and Hypotheses

2.1 Agency Theory and Information Asymmetry

The theoretical foundation of this study is anchored in agency theory ((Eisenhardt, 1989; Meckling & Jensen, 1976), which conceptualizes the public sector as a multi-tiered principal-agent relationship where citizens and oversight bodies act as principals, and public officials act as agents (Pinkrah, 2024). Information asymmetry arises when agents possess superior, unverified information regarding the allocation and stewardship of public resources, creating moral hazard and opportunities for financial waste or non-compliance (Efunniyi et al., 2024).

Standardized accounting reforms like IPSAS serve as an institutional monitoring mechanism designed to reduce information asymmetry by enforcing rigorous recognition, measurement, and disclosure rules (Ijeoma & Oghoghomeh, 2014). By making public accounts more systematic and transparent, advanced IPSAS implementation is expected to shorten reporting delays defined here as reporting lag thereby

supplying principals and auditors with timely data for effective oversight. Consistent application of reporting standards could reduce this imbalance by supporting the systematic preparation and disclosure of financial information. (Atuilik & Salia, 2019) provided supporting empirical evidence from Liberia, where respondents associated IPSAS with improved transparency and accountability. However, their findings concerned perceived reporting benefits and did not directly establish improvements in reporting timeliness. For the present study, the relevant proposition was that more advanced implementation would support earlier preparation and completion of financial reporting, making information available sooner for scrutiny.

- **H1**: *More advanced IPSAS implementation is associated with shorter financial-reporting lag in the public sector.*

2.1.1 The Mediating Role of Financial-Reporting Timeliness

Timeliness is a core qualitative characteristic of financial reporting; delayed accounts neutralize effective oversight, postponing corrective action and allowing irregularities to compound (Marota & Johari, 2024). Agency theory dictates that timely disclosure constrains managerial discretion and heightens accountability (Christiaens et al., 2015). Consequently, financial-reporting timeliness is modeled as a vital mediating mechanism (path\ a \times b$). As institutions progress through IPSAS implementation stages, reporting lag decreases ($path\ a$), which in turn diminishes the occurrence or unmitigated accumulation of reported financial irregularities ($path\ b$) (Ademola et al., 2020).

IPSAS also encourages full disclosure of financial activities, reducing opportunities for misrepresentation and enhancing stakeholders' trust in public institutions (Atuilik & Salia, 2019; Christiaens et al., 2015). Some evidence suggests that greater transparency is associated with fewer financial irregularities because public accountability mechanisms become stronger when IPSAS is adopted (Ademola et al., 2020; Ofoegbu, 2014). In Ghana, IPSAS implementation is expected to promote transparency and thereby reduce the risk of financial irregularities (Saeed, 2025). These arguments support the proposition that IPSAS can mitigate agency conflicts by making financial information more accessible and verifiable, although the evidence is not uniform, as discussed below.

Other studies qualify this expectation. (Hamed-Sidhom & Loukil, 2021) report that IPSAS adoption does not by itself reduce corruption in government organisations and highlight the role of political stability. (Tawiah, 2023) found that IPSAS adoption was associated with lower corruption, with stronger effects among countries that had fully adopted accrual-based IPSAS than among partial adopters. Because none of these studies tested reporting timeliness as a mediator at the institutional level, and because implementation, timeliness and irregularities are observed in the same fiscal year in the present dataset, the hypothesised mediation is tested as a statistical indirect association rather than as an established causal sequence.

- **H2**: *Financial-reporting timeliness mediates the relationship between IPSAS implementation and reported financial irregularities.*

2.2 Conceptual Framework

3.0 Research Methodology

Research Design and Data.This study adopts a quantitative archival longitudinal panel design, aligning with positivist epistemological assumptions (Saunders et al. 2019). The accessible sample comprises an unbalanced panel of 729 institution-year observations derived from 238 distinct public-sector institutions (including Ministries, Departments, and Agencies [MDAs], Metropolitan, Municipal, and District Assemblies [MMDAs], and State-Owned Enterprises [SOEs]) observed across fiscal years 2018 to 2025. Data were systematically extracted from audited financial statements, Auditor-General reports, and official regulatory records (Bloomfield et al. 2016).

3.1 Research Philosophy

This study is underpinned by the positivist research philosophy, which holds that social and institutional phenomena can be investigated objectively through systematic observation, measurement, and statistical analysis (Gamage, 2025; Ryan, 2002). Positivism is based on the assumption that reality exists independently of the researcher and can be represented through observable indicators (Ryan, 2002). From an ontological perspective, the study assumes that IPSAS implementation, reporting timeliness, government commitment, and reported financial irregularities are objective institutional conditions that can be measured from public-sector records (Gamage, 2025). These conditions are therefore treated as empirical realities rather than as meanings constructed solely through individual perceptions or experiences. The positivist philosophy is particularly appropriate for studies that seek to identify patterns, test relationships, and evaluate theoretically derived hypotheses using numerical data. It also supports the use of formal statistical procedures to determine whether observed relationships are sufficiently systematic to extend beyond individual cases ((Gamage, 2025; Levitt et al., 2018).

3.2 Research Approach

This study adopts a deductive research approach, which begins with established theories and proceeds to the formulation and empirical testing of hypotheses (Levitt et al., 2018). Deduction involves moving from general theoretical propositions to specific expectations that can be examined using observable evidence (Gamage, 2025). It is particularly suitable for quantitative research because it provides a structured process through which concepts are operationalised, relationships are specified, and hypotheses are tested statistically. Under this approach, the researcher does not begin by generating theory directly from the data but rather uses existing theory to guide the selection of variables and the expected direction of relationships. The deductive approach therefore promotes logical consistency between the theoretical framework, research objectives, hypotheses, and analytical models. It also allows the study's findings to support, refine, or challenge existing theoretical explanations. This

approach is widely applied in business and accounting research where researchers seek to test theoretically informed relationships using numerical and archival data (Gamage, 2025; Levitt et al., 2018).

In the present study, agency theory and political economy theory provide the theoretical foundation for the deductive process. Agency theory predicts that stronger IPSAS implementation should reduce information asymmetry between public officials, who act as agents, and citizens and oversight institutions, who act as principals ((Eisenhardt, 1989; Meckling & Jensen, 1976). The theory therefore supports the expectation that IPSAS implementation should improve the timeliness of financial reporting, which is one observable dimension of transparency. It also suggests that greater transparency should strengthen monitoring and reduce the opportunities for errors, concealment, and reported financial irregularities. Based on this reasoning, the study tests whether financial-reporting timeliness mediates the relationship between IPSAS implementation and reported financial irregularities. Political economy theory complements this explanation by recognising that accounting reforms do not operate independently of political and institutional conditions. It therefore provides the basis for examining whether government commitment, resource allocation, policy support, and administrative capacity influence the effectiveness of IPSAS implementation.

3.3 Research Design

This study adopts a quantitative archival longitudinal research design ((Bloomfield et al., 2016). A quantitative design is appropriate because the study measures the relationships among IPSAS implementation, financial-reporting timeliness, government commitment, and reported financial irregularities using numerical indicators (Gamage, 2025). The design allows the researcher to test hypotheses, estimate the direction and magnitude of relationships, and determine whether the observed effects are statistically significant (Creswell & Creswell, 2018). Unlike qualitative research, which focuses mainly on meanings, experiences, and perceptions, the present study relies on measurable institutional outcomes derived from public-sector records. The quantitative orientation is therefore consistent with the positivist philosophy and deductive approach adopted for the study. It also supports the use of econometric techniques, including panel regression, mediation analysis, moderation analysis, diagnostic tests, and robustness checks. Through this design, the study seeks to generate objective and replicable evidence on the implementation outcomes of IPSAS in Ghana's public sector.

The study is archival because it relies on existing records originally prepared for administrative, regulatory, accounting, financial-reporting, budgeting, and audit purposes (Bloomfield et al., 2016). Archival research is suitable where the variables of interest can be measured from institutional documents and where the researcher intends to examine actual organisational outcomes rather than respondents' perceptions. The data for the study were compiled from public-sector financial records, audit reports, implementation records, budget-execution information, and related institutional documents. This approach reduces some of the limitations associated with self-reported questionnaire data, such as recall bias, social-desirability bias, and respondents' tendency to overstate compliance. It also provides an opportunity to assess the actual reporting behaviour and financial outcomes of public

institutions. (Bloomfield et al., 2016) note that archival accounting research is useful for examining institutional practices and outcomes using records generated independently of the research process. Nevertheless, the credibility of the archival design depends on the accuracy, completeness, consistency, and verifiability of the underlying documents.

The longitudinal dimension of the design arises because the study observes selected public-sector institutions over several fiscal years rather than at a single point in time (Baltagi, 2021). The dataset therefore combines cross-sectional variation among institutions with time-series variation within the same institutions. This produces a panel-data structure in which each observation represents a particular public-sector institution in a particular fiscal year. Compared with a purely cross-sectional design, a longitudinal panel design provides more observations, improves analytical efficiency, and permits the study of changes in IPSAS implementation and financial-reporting outcomes over time. It also enables the researcher to control for unobserved institutional characteristics that remain relatively constant across the study period, such as organisational mandate, administrative culture, reporting traditions, and institutional complexity. (Baltagi, 2021) explains that panel data are particularly valuable because they allow researchers to account for individual heterogeneity and to investigate dynamic relationships more effectively than single-period data. In this study, the longitudinal structure supports the use of institution and year fixed effects to control for permanent institutional differences and common fiscal-year shocks.

3.5 Population, Sampling and Unit of Analysis

The target population comprised public-sector institutions in Ghana responsible for preparing financial reports and accounting for public resources during 2018–2025. These included Ministries, Departments and Agencies (MDAs), Metropolitan, Municipal and District Assemblies (MMDAs), and other public bodies within the scope of IPSAS implementation. Eligibility depended on the institution's applicable reporting framework rather than public ownership alone. CAGD's implementation guidance distinguished entities covered by IPSAS from government business enterprises established for commercial purposes. Consequently, the inclusion of state-owned entities required confirmation that their reporting framework was consistent with the study's focus. This distinction provided the basis for assessing whether implementation stages were comparable across institutions.

The accessible population consisted of institutions for which relevant archival financial and reporting records could be identified. Sources suitable for establishing institutional coverage included the Auditor-General's reports on MDAs, district-assembly accounts, and public boards and other statutory institutions. SIGA's institutional classifications provided supplementary information for distinguishing commercial enterprises from other state entities. The Auditor-General's district-assembly report identified 261 assemblies in 2023, providing a reference for local-government coverage in that year. However, this figure did not represent the complete sampling frame across all institutional categories or years. The study therefore distinguished the wider population of potentially relevant institutions from those represented in the assembled dataset.

3.5.1 Sampling Procedure

The study employed purposive archival sampling, with selection guided by the relevance, availability and comparability of institutional records. The intended eligibility criteria required observations to relate to an identifiable public-sector institution and fiscal year and to contain the variables needed for analysis. Institutions also needed comparable reporting boundaries and accounting frameworks. In particular, evidence of GIFMIS deployment alone was insufficient to establish IPSAS implementation. Missing records for one year did not automatically exclude an institution's available observations in other years, allowing an unbalanced panel to be assembled.

The screening process identified 385 candidate institutions. Of these, 110 were excluded at preliminary screening and a further 37 after detailed eligibility assessment, leaving 238 institutional entity IDs and 729 institution-year records in the analytical dataset (Table 3.1). Both screening stages applied the eligibility criteria set out above: the availability of usable records for the study period, the presence of the variables required for estimation and a reporting framework comparable with the study's IPSAS focus.

Table 3.1
Institutional Screening and Sample Selection

Screening stage	Institutions retained	Exclusions	Screening criterion applied
Initial identification	385	-	Institutions identified from Auditor-General reports and institutional listings for 2018–2025
Preliminary screening	275	110	No usable financial statements or audit reports for the study period
Detailed eligibility assessment	238	37	Required variables unavailable or reporting framework not comparable
Assembled analytical dataset	238 distinct entity IDs	147 in total	729 institution-year observations retained

Source: Author's compilation.

Institutions were classified by institution class using their entity-ID prefixes (MDA, MMDA and SOE). The sample comprises four MDAs with 20 observations, 212 MMDAs with 637 observations and 22 SOEs with 72 observations (Table 3.2). MMDAs therefore account for 87.4% of the observations, so the pooled estimates largely reflect local-government institutions; class-specific estimates are reported in Section 4.11.

3.5.2 Sample Size and Observation Years

The assembled dataset contained 729 institution-year records associated with 238 distinct entity IDs over 2018–2025. The panel was unbalanced because the number and timing of observations differed across IDs. Specifically, 231 IDs had three observations each, five had four observations each, and two

had eight observations each. Coverage was concentrated in 2018, 2021 and 2024, which jointly contributed 705 observations, representing 96.7% of the dataset. The remaining five years contributed 24 observations, or 3.3%. Table 3.3 presents the annual distribution.

Table 3.3
Distribution of Institution-Year Observations by Fiscal Year

Fiscal year	Institution-year observations	Percentage (%)
2018	234	32.10
2019	6	0.82
2020	3	0.41
2021	237	32.51
2022	3	0.41
2023	6	0.82
2024	234	32.10
2025	6	0.82
Total	**729**	**100.00**

Source: Author's computation from the study dataset. Percentages may not sum to exactly 100 because of rounding.

The uneven annual coverage limits comparisons between yearly averages because differences may reflect changes in sample composition as well as changes within institutions. Although the panel estimator accommodates unequal observation counts, it does not establish that missing observations occur randomly. The models were therefore re-estimated on the principal observation years (2018, 2021 and 2024) to assess sensitivity to sparse coverage (Section 4.11).

3.5.3 Unit of Analysis

The unit of analysis is the public-sector institution-year. Each record represented an institution's implementation stage, reporting lag, commitment proxy and reported financial irregularities for a specified fiscal year. In the dataset, the entity ID served as the panel identifier and fiscal year served as the time identifier. No duplicate entity-ID–year combinations were found. All 238 entity IDs recorded at least one change in implementation stage during their observed periods. No ID remained at the same stage throughout, and no ID had only one observation. The within-ID standard deviation of implementation stage was **0.652**, calculated from deviations around each ID's mean using the overall sample denominator, compared with an overall standard deviation of **0.792**. These results demonstrate variation within the coded panel units, although they do not verify the accuracy of implementation scores. Two-way fixed-effects estimation used variation remaining after accounting for entity and year

effects and the other model terms. Purposive selection limits statistical generalisation beyond the observed sample.

3.6 Sources of Data

The study relies entirely on secondary archival data obtained from official public-sector records and related institutional documents. Secondary archival data are appropriate because the study examines actual financial-reporting practices, audit outcomes, implementation stages, budget performance, and institutional characteristics rather than the perceptions of respondents. The principal documentary sources include reports of the Auditor-General of Ghana, audited financial statements of public-sector institutions, publications of the Ministry of Finance, reports of the Controller and Accountant-General's Department, public financial-management reform documents, budget-performance reports, IPSAS and GIFMIS implementation records, and annual reports of the affected institutions. These sources provide information on reporting delays, financial irregularities, capital-expenditure execution, implementation progress, and institutional scale. The use of official documentary evidence is consistent with archival accounting research, which relies on records created independently of the research process to examine organisational practices and outcomes (Bloomfield et al., 2016). It also reduces some of the limitations associated with self-reported data, including recall error, social-desirability bias, and respondents' tendency to overstate institutional compliance.

3.7 Variable Operationalization

Independent Variable (IPSAS Implementation): Measured on an ordinal implementation stage scale ranging from 0 (no identifiable implementation/cash basis) to 3 (advanced audited accrual-based IPSAS compliance).Mediator (Financial-Reporting Timeliness): Operationalized as reporting lag, calculated as the exact number of calendar days between the close of the fiscal year and the formal completion of the audit or financial reporting process. Dependent Variable (Reported Financial Irregularities): Measured as the natural logarithm of one plus the total monetary value of audit-reported irregularities (Ln(1 + GHc million) to correct for severe positive skewness (Hair et al. 2019).Control & Fixed Parameters: To mitigate omitted variable bias and unobserved heterogeneity, the study implements two-way fixed-effects panel regressions incorporating both institution fixed effects Ui and fiscal-year fixed effects (At), alongside institution-clustered standard errors to control for heteroskedasticity and serial correlation (Baltagi, 2021).

3.8 Model Specification

3.8.1 IPSAS Implementation and Financial-Reporting Timeliness

The first model estimates the association between IPSAS implementation and financial-reporting timeliness:

$$ReportingLag_{it} = \beta_0 + \beta_1 IPSAS_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (3.3)$$

In Eq. (3.3), i denotes the public-sector institution, t denotes the fiscal year, μ_i represents institution fixed effects, λ_t represents year fixed effects and ε_it is the disturbance term. Since a longer lag represents lower transparency, the expected sign of β_1 is negative.

3.8.2 IPSAS Implementation and Reported Financial Irregularities

The total-effect model estimates the association between IPSAS implementation and reported financial irregularities:

$$LnIrregularity_{it} = \beta_0 + cIPSAS_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (3.4)$$

where LnIrregularity_it is the natural logarithm of one plus reported financial irregularities (GH¢ million) of institution i in year t (Eq. 3.2), c is the total association of IPSAS implementation with reported irregularities, and the remaining terms are as defined for Eq. (3.3).

3.8.3 Mediation Model

The mediating role of reporting timeliness is tested through two equations:

$$ReportingLag_{it} = \alpha_0 + aIPSAS_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (3.5)$$

$$LnIrregularity_{it} = \beta_0 + c'IPSAS_{it} + bReportingLag_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (3.6)$$

where a is the association of IPSAS implementation with reporting lag, b is the association of reporting lag with logged irregularities holding implementation constant, c' is the direct association of implementation with logged irregularities, α_0 and β_0 are intercepts, and the remaining terms are as defined for Eq. (3.3).

The indirect effect is the product of paths a, and b:

$$Indirect\ effect = a \times b \quad (3.7)$$

Mediation is supported where the indirect effect is statistically different from zero. The direct effect c' need not be insignificant for mediation to exist. Opposite signs between the direct and indirect effects indicate inconsistent or competitive mediation (Hayes, 2018).

The standard error of the indirect effect was estimated using the delta (Sobel) approximation based on institution-clustered component standard errors. Because the product of two coefficients is not normally distributed in finite samples, an institution-clustered bootstrap confidence interval for the indirect effect is also reported. Institutions were resampled with replacement 2,000 times, each resampled institution being treated as a separate cluster so that the institution effects were re-estimated in every replication; paths a and b were re-estimated on each resampled panel, and the 2.5th and 97.5th percentiles of the 2,000 values of a × b formed the 95% percentile interval (random seed 20250618). The bootstrap interval is reported alongside the delta (Sobel) interval in Tables 4.7 and 4.13. In addition, because

implementation, reporting lag and irregularities are measured in the same fiscal year, the mediation model estimates a contemporaneous indirect association and does not establish temporal ordering. A lagged specification, with implementation at t − 1, reporting lag at t and irregularities at t or t + 1, would strengthen inference but requires consecutive annual observations, which the current panel largely lacks (Table 3.3).

4.0 Results and Tables

Table 1

Descriptive Statistics and Bivariate Correlations Before executing the multivariate panel regressions, descriptive statistics and Pearson correlation coefficients were evaluated to inspect data distributions and preliminary linear associations among the core variables.

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
IPSAS implementation stage	729	1.182	0.792	0.000	3.000
Reporting lag (days)	729	219.451	39.348	130.000	350.000
Reported financial irregularities (GH¢ million)	729	29.878	106.961	0.850	1,416.300
Ln(1 + reported financial irregularities)	729	2.205	1.191	0.615	7.257

Note: The government-commitment proxy is measured as a proportion. Therefore, the mean value of 0.663 is equivalent to a capital-expenditure execution rate of 66.3%. Reported financial irregularities are expressed in millions of Ghana cedis.

The mean IPSAS implementation stage was 1.182 on a scale ranging from zero to three, with a standard deviation of 0.792. This indicates that the average public-sector institution was positioned between the initial and intermediate stages of IPSAS implementation. The minimum value of zero shows that some institution-year observations reflected no identifiable implementation, while the maximum value of three indicates that other institutions had reached an advanced stage of implementation. The observed range and standard deviation demonstrate meaningful variation in implementation intensity across institutions and fiscal years, which is important for the panel analysis because it allows the study to estimate whether progression from lower to higher implementation stages is associated with changes in reporting timeliness and reported financial irregularities. The average reporting lag was 219.451 days, with a standard deviation of 39.348 days, indicating that the reporting or audit process was completed approximately seven months after the close of the fiscal year. The shortest recorded delay was 130 days, while the longest was 350 days, revealing substantial differences in reporting timeliness among institutions. Since reporting lag was used as an inverse measure of transparency, lower values represented more timely reporting, whereas higher values indicated weaker reporting timeliness. The

mean therefore suggests that considerable delays remained in the completion and availability of public-sector financial reports.

Total reported financial irregularities recorded a mean of GH¢29.878 million and a standard deviation of GH¢106.961 million, with values ranging from GH¢0.850 million to GH¢1.416 billion. The standard deviation was more than three times the mean, indicating substantial dispersion and strong positive skewness in the raw monetary values. To reduce the influence of extreme observations, reported financial irregularities were transformed using the natural logarithm of one plus the reported amount. The transformed variable had a mean of 2.205, a standard deviation of 1.191, and values ranging from 0.615 to 7.257. This transformation compressed exceptionally large values while preserving the ranking and relative differences among observations, thereby reducing the likelihood that a small number of extreme cases would dominate the regression estimates.

Table 2
Pearson Correlation Matrix

Variable	**1**	**2**	**3**	**4**
1. IPSAS implementation stage	1.000			
2. Reporting lag	0.295***	1.000		
3. Ln reported financial irregularities	0.643***	0.356***	-0.279***	1.000

*Note: *** indicates statistical significance at the 1% level. Reporting lag is measured in days, while the government-commitment proxy is measured using the capital-expenditure execution rate.*

IPSAS implementation was positively and significantly correlated with reporting lag, with a coefficient of (r = 0.295) and a probability value below 0.001. This moderate positive relationship indicates that, at the pooled bivariate level, institution-year observations with higher IPSAS implementation stages tended to record longer reporting delays. However, the result should not be interpreted as evidence that IPSAS implementation causes delays because the pooled correlation combines differences across institutions with changes occurring within the same institution over time. Larger, more complex, or more heavily scrutinised institutions may simultaneously have more advanced implementation stages, longer audit processes, and higher absolute values of financial irregularities. IPSAS implementation was also strongly and positively correlated with logged reported financial irregularities, with a coefficient of (r = 0.643) and a probability value below 0.001. One plausible but untested explanation is that more advanced implementation improves the recognition, detection and disclosure of irregularities that might previously have remained unidentified; differences in institutional scale are an alternative explanation. Reporting lag was similarly positively correlated with logged reported financial irregularities, with a coefficient of (r = 0.356) and a probability value below 0.001, suggesting that longer reporting delays were associated with higher reported irregularities. Although this direction is consistent with the expectation that delayed reporting may weaken monitoring, postpone reconciliation, and reduce the timeliness of corrective action, the correlation does not control for institutional heterogeneity, fiscal-year effects, or implementation intensity. For this reason, the fixed-effects, mediation, and multivariate regression

results provide a more appropriate basis for evaluating the study objectives than the unconditional correlation coefficients.

Table 3

Two-Way Fixed-Effects Regression Results (Impact of IPSAS on Reporting Lag) To test Hypothesis 1, a two-way fixed-effects panel regression was estimated, controlling for unobserved institutional heterogeneity and common yearly macro-shocks.

Variable	Coefficient	Clustered SE	t-value	p-value	95% confidence interval
IPSAS implementation stage	-8.315	1.306	-6.367	< 0.001	[-10.874, -5.755]
Entity fixed effects	Yes				
Year fixed effects	Yes				
Observations	729				
Number of institutions (clusters)	238				
Within R-squared	0.975				
Overall R-squared (including fixed effects)	0.983				

Note: Dependent variable: reporting lag (days). A negative coefficient indicates more timely reporting. The model includes institution and fiscal-year fixed effects; standard errors are clustered by institution. The overall R-squared largely reflects the fixed effects.

Controlling for entity and year fixed parameters, a one-stage progression in IPSAS implementation is associated with an average reduction of 8.315 reporting days ($p < 0.001$). This provides strong support for **H1**, confirming that more advanced implementation significantly compresses reporting lag.

Table 4
Mediation Analysis Results (Pathways to Reported Irregularities)

Effect	Estimate	Standard error	Test statistic	p-value	95% confidence interval
Path a: IPSAS → reporting lag	-8.315	1.306	-6.367	< 0.001	[-10.874, -5.755]
Path b: Reporting lag → ln irregularities	0.0069	0.0028	2.490	0.013	[0.0015, 0.0123]
Indirect effect (a × b)	-0.0573	0.0247	-2.319	0.020	[-0.1057, -0.0089]
Indirect effect (a × b), cluster bootstrap	-0.0573	0.0164	—	—	[-0.0878, -0.0253]
Direct effect (c')	0.1095	0.0434	2.524	0.012	[0.0245, 0.1945]
Total effect (c)	0.0522	0.0277	1.888	0.059	[-0.0020, 0.1064]

Note: Dependent variables: reporting lag (path a) and ln(1 + reported financial irregularities) (paths b, c' and c). All models include institution and fiscal-year fixed effects; N = 729; 238 institutions; standard errors clustered by institution. The indirect-effect standard error uses the delta (Sobel) approximation.

The indirect effect (a × b = -0.0573) is statistically significant (p = 0.020), with both the Sobel and cluster-bootstrap confidence intervals excluding zero. This supports **H2**, confirming that financial-reporting timeliness acts as a significant mediator. However, because the direct effect (c) carries an opposite sign, an inconsistent (competitive) mediation structure is present (Hayes 2018), pointing to a dual mechanism where timeliness reduces irregularities while overall implementation intensity expands audit detection scope.

4.1 Discussion of Findings

The findings provide consistent evidence that stronger IPSAS implementation is associated with improved financial-reporting timeliness in Ghana's public sector. The negative coefficient remained statistically significant after excluding sparse years, restricting the analysis to local-government institutions, omitting the 2025 observations, and treating the implementation stages categorically. However, the association was not reproduced when the previous observed stage, typically three years earlier, replaced the contemporaneous stage (Table 4.11), so the evidence supports a contemporaneous association and not a delayed effect of implementation on reporting lag. The categorical estimates further showed that the largest reductions in reporting lag occurred at stages two and three, whereas the earliest implementation stage produced only a limited and statistically insignificant improvement. This suggests that the expected timeliness benefits of IPSAS do not arise automatically from formal adoption or the initial announcement of reform but become more visible when institutions progress towards substantive implementation.

The result is consistent with (Christiaens et al., 2015), who reported that harmonised public-sector accounting standards can improve the consistency and comparability of governmental reporting, and with (Tavares & Lourenço, 2026), who found that the usefulness of IPSAS-related information depends on the depth and institutionalisation of implementation. It also accords with (Cuadrado-Ballesteros et al., 2022), who linked public-sector accounting reforms with improvements in governmental efficiency. However, the finding contrasts with evidence that accrual-based reforms do not always produce immediate improvements because technical complexity, weak institutional capacity, limited professional expertise, and inadequate information systems can restrict their practical use ((Abdulkarim et al., 2020; Bergmann et al., 2019). The present study addresses an important gap in this literature by moving beyond perceptions of IPSAS benefits and formal adoption status to examine whether changes in implementation intensity are associated with an observable reporting outcome—namely, reporting lag—within the same Ghanaian public-sector institutions over time.

The mediation results further indicate a statistically significant indirect association that is consistent with financial-reporting timeliness being one pathway through which IPSAS implementation may be linked to lower reported irregularities. Stronger implementation was associated with shorter reporting lag, while longer reporting lag was associated with higher reported irregularities, producing a negative indirect effect. This finding is consistent with agency theory, which views timely financial information as a monitoring mechanism that reduces the informational advantage of public officials over citizens, Parliament, auditors, and other oversight bodies. Where reporting is delayed, public officials may retain greater discretion over information, while reconciliations, audit intervention, and corrective action are postponed. By standardising recognition, measurement, presentation, and disclosure procedures, IPSAS can reduce this information imbalance and make financial activities more visible and verifiable. The result is consistent with (Atuilik & Salia, 2019), who associated IPSAS with improved transparency and accountability, and with (Mnif & Gafsi, 2020), who showed that the quality of IPSAS-based disclosure depends on institutional and contextual conditions. It also complements the systematic reviews of (Polzer et al., 2023; Schmidthuber et al., 2022), which observed that much of the IPSAS literature concentrates on adoption drivers, implementation challenges, and perceived benefits rather than tested pathways linking implementation to accountability outcomes. By modelling reporting timeliness as a mediator, the present study helps address this gap. It provides empirical evidence consistent with a pathway through which an accounting reform may be linked to reported financial irregularities via reporting timeliness, although the contemporaneous measurement means that the pathway is statistical and is not established as causal.

The positive remaining direct effect of IPSAS implementation on reported financial irregularities provides a more complex picture than the generally favourable relationship suggested in parts of the literature. While the indirect association is consistent with lower reported irregularities through improved timeliness, the positive direct coefficient suggests that stronger implementation may simultaneously increase the recognition and disclosure of irregularities. This finding should therefore not be interpreted as evidence that IPSAS causes financial misconduct. One plausible explanation is a detection effect in which improved accounting classifications, supporting documentation, audit trails, and financial-

information systems expose problems that previously remained hidden or inadequately recorded. This mechanism was not directly tested in the present study, because the data do not separate newly detected from recurring or resolved irregularities. The explanation is compatible with research showing that the usefulness and consequences of accrual-based public-sector reporting depend on whether information is actually produced, understood, and used by decision-makers and oversight institutions (Bergmann et al., 2019; Gomes et al., 2023). It also helps explain why the total effect was only marginally significant even though the indirect and direct effects were individually significant and operated in opposite directions. The distinction between the occurrence of irregularities and their detection constitutes another important empirical gap because many previous studies treat higher reported irregularities as unambiguous evidence of weaker accountability. The present results are consistent with audit-based measures capturing both underlying financial-management weaknesses and improvements in the ability of accounting systems to identify and disclose those weaknesses.

Alternative explanations are equally compatible with the data. Reform effort may have been targeted at institutions with known weaknesses; larger institutions may have both more advanced implementation and larger absolute irregularities; audit intensity or coverage may have increased alongside implementation; and higher irregularities may have prompted implementation rather than resulted from it. Distinguishing these explanations would require measures of audit coverage or intensity, the number of findings, and the recurrence, resolution or recovery of irregularities, none of which is contained in the present dataset. The detection explanation is therefore an interpretation, not an empirical finding of this study.

Methodologically, the study contributes by applying two-way fixed effects and institution-clustered standard errors after diagnostic tests confirmed significant entity effects, year effects, heteroskedasticity, serial correlation, and violation of the random-effects exogeneity assumption. The high R-squared values should consequently be attributed largely to the fixed effects rather than to IPSAS alone, and the conclusions should rest primarily on coefficient direction, magnitude, confidence intervals, robustness, and consistency with the theoretical mechanisms.

5. Conclusion and Policy Implications

5.1 Conclusion

The study examined the association between IPSAS implementation and reporting timeliness, and between implementation and reported financial irregularities, in Ghana’s public sector, with reporting timeliness examined as a statistical pathway and government commitment as a prospective moderator. Within institutions and after accounting for common fiscal-year effects, higher IPSAS implementation stages were associated with shorter reporting lags, with the clearest reductions at stages two and three. The study therefore concludes that the depth of implementation matters for reporting timeliness. This association is contemporaneous: it was not reproduced when the previous observed stage was used as the regressor. Because reporting lag captures only the timeliness dimension, the findings do not extend

to other dimensions of transparency such as accessibility, completeness and comparability, and because the estimates are conditional associations they are not causal effects.

The study also found a statistically significant negative indirect association between IPSAS implementation and reported financial irregularities through reporting lag, alongside a positive direct association, so that the total association was significant only at the 10% level. These results are consistent with reporting timeliness being a pathway linking implementation to reported irregularities. However, the contemporaneous measurement does not establish temporal ordering, and the positive direct association may reflect improved detection and disclosure, greater reform attention to weaker institutions, or differences in institutional scale, none of which was directly tested. Higher reported irregularities should therefore not automatically be read as implementation failure. Because the dependent variable is built from reported audit irregularities, the conclusions concern reported irregularities and not the true incidence of irregularity or misconduct. Overall, the study concludes that more advanced IPSAS implementation is associated with timelier public-sector financial reporting and, through that pathway, with lower reported irregularities, but that adoption alone is unlikely to be sufficient.

5.2 Policy Recommendations

Three policy and practice recommendations follow from the findings. First, the Controller and Accountant-General's Department and the Ministry of Finance should prioritise progression beyond the initial stages of IPSAS implementation, because stage one was not significantly different from stage zero, whereas stages two and three were associated with substantially shorter reporting lags; institutions at stages zero and one should receive targeted training, systems support and supervision to reach stage two and above. Second, clear IPSAS reporting deadlines should be established and enforced for account closure, reconciliation, submission, audit, publication and response to audit findings, supported by annual institutional scorecards and corrective action plans for persistent delays. Third, early-warning controls and electronic audit-follow-up mechanisms should be integrated into IPSAS and GIFMIS processes to detect irregularities promptly, track corrective actions, reduce recurring findings and improve the recovery of public funds.

5.3 Theoretical Implications

This study makes important theoretical contributions by applying both agency theory and political economy theory to the examination of IPSAS implementation. Agency theory is validated by the finding that effective IPSAS implementation significantly improve financial reporting timelines, which in turn reduces reported financial irregularities. This supports the view that IPSAS adoption mitigates information asymmetry between citizens and public officials by fostering credible disclosures. The mediating effect of financial reporting timeliness confirms that technical compliance only produces results in greater openness and public accountability.

Political economy theory is validated by the finding that government commitment plays a significant role. This supports the argument that technical reforms are insufficient in politically constrained

environments unless they are accompanied by political will, resources, and policy enforcement. The model developed in this study integrates both theories by demonstrating that IPSAS implementation reduces reported financial irregularities through reporting timelines, but the magnitude of this effect depends on government commitment. This theoretical contribution advances the literature by highlighting the importance of combining institutional, technical, and political perspectives when analyzing public financial management reforms.

5.4 Limitations and Future Research

This study has several limitations, drawn from the methodology in Chapter Three and the results in Chapter Four that qualify its conclusions. Regarding the data, the panel is unbalanced and concentrated in 2018, 2021 and 2024, with few observations for 2019, 2020, 2022, 2023 and 2025, which limits dynamic analysis, the interpretation of annual trends and the precision of year-specific estimates. Regarding measurement, the implementation-stage variable was originally recorded as a combined IPSAS/GIFMIS deployment stage, although the two are conceptually distinct. Reporting lag captures only the timeliness dimension of transparency. The dependent variable is built from reported audit irregularities, which combine underlying weaknesses with detection capacity.

Regarding inference, the archival design supports conditional associations and not causal conclusions. Two-way fixed effects remove time-invariant institutional differences and common annual shocks, but not reverse causality, simultaneity or time-varying omitted factors. Because implementation, reporting lag and irregularities are measured contemporaneously, the mediation analysis is a statistical decomposition without temporal ordering, and a specification using the previous observed stage, typically three years earlier, did not reproduce the negative association between implementation and reporting lag (Table 4.11). The high R-squared values reflect mainly the fixed effects. The mechanisms discussed in the thesis, particularly the detection of previously hidden irregularities, were not directly tested.

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Figures

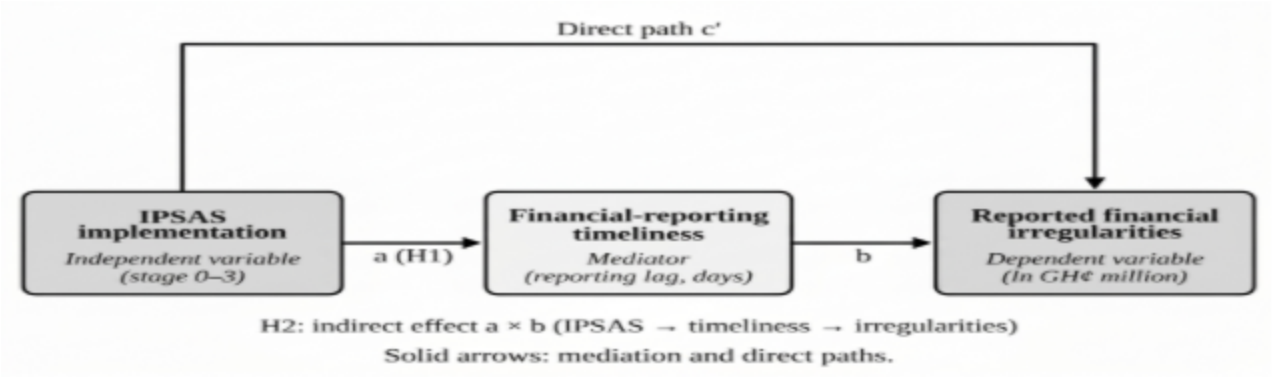


Figure 1

Legend not included with this version.