

-RESEARCH ARTICLE-

## DIGITAL GOVERNANCE AND PUBLIC TRANSPARENCY: ASSESSING E-GOVERNMENT IMPLEMENTATION IN SOUTH AFRICA

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### —Abstract—

Digital transformation has emerged as a pivotal element in global governance reforms, with e-government functioning as a tool to strengthen transparency, accountability, and public confidence. This study investigates the implementation of e-government within South African local municipalities, emphasising the role of digital platforms in fostering transparency and enhancing service delivery. Utilising secondary data derived from municipal financial disclosures spanning 2019 to 2024, multiple regression analysis is applied to identify determinants of transparency. The findings reveal that the quality of audit opinions and the prevailing political environment exert a significant positive influence on municipal transparency, whereas municipal size and the adoption of accrual accounting demonstrate a comparatively minor effect. These results indicate that adherence to regulatory frameworks and political conditions, rather than the mere deployment of digital technologies, are the principal drivers of transparency within South African local governance.

**Keywords:** Digital Governance, Accountability, Transparency, E-Government, South African Municipalities.

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## INTRODUCTION

Transparency continues to be a cornerstone of democratic governance. Within democratic systems, governments are obligated to remain answerable to citizens through the provision of budgetary and financial information (Matlala, 2025). Such openness facilitates oversight, mitigates corruption, and curtails the improper utilisation of public resources. In South Africa, municipalities are charged with managing community finances, yet the efficacy of this management is largely contingent upon institutional capacity and the prevailing political will (Sharmin & Chowdhury, 2025). Financial statements constitute the principal instruments of accountability in municipal financial administration. In the South African context, these statements reflect the government's responsibility to communicate operational performance to the public (Umbach & Tkalec, 2022). The regulatory framework guiding municipal financial reporting is anchored in the Municipal Finance Management Act (MFMA) No. 56 of 2003, which prescribes standards to ensure effective and sustainable financial administration. The MFMA underscores principles of transparency, accountability, and oversight in the utilisation of public funds, aligning with broader objectives of governmental accounting to supply information that enables informed decision-making (Nkgapele & Mokgolobotho, 2024).

Consistency in public sector financial reporting is underpinned by the South African Generally Recognised Accounting Practice (GRAP) standards, issued by the Accounting Standards Board (ASB) (Mabinane, 2022). To further reinforce decentralisation, the government introduced the Municipal Standard Chart of Accounts (mSCOA), which harmonises financial data and reporting across municipalities. This initiative supports National Treasury objectives by fostering standardisation, enhancing fiscal control, and improving access to financial information (Aliamutu & Mkhize, 2024). The Promotion of Access to Information Act (PAIA) No. 2 of 2000 requires municipalities to ensure public access to information, encompassing financial statements and budget reports (Mukonavanhu, 2024). This statutory obligation facilitates community oversight of municipal activities and encourages participatory governance.

### Digital Platforms and Municipal Financial Reporting

Digital platforms have assumed a critical role in promoting transparency within municipal financial reporting. Municipalities are increasingly expected to make financial information—such as budgets, annual financial statements, and audit outcomes—available on official websites. Evidence indicates that internet-based financial reporting, or e-government, offers a cost-efficient and timely mechanism for municipalities to engage with stakeholders (Terrance, 2023a). In the South African context, where issues of service delivery and financial mismanagement remain prevalent, digital reporting through online platforms supports open governance and

citizen participation, with the potential to enhance public confidence in local institutions. E-government encompasses the application of information technology by municipal entities to strengthen communication with stakeholders, including citizens, investors, creditors, and other parties seeking government information. Information and communication technology (ICT) can lower operational costs, improve transparency, and mitigate corruption within the public sector (Terrance & Uwizeyimana, 2023). Websites facilitate the efficient dissemination of information and influence the communication of financial reporting. The internet enables stakeholders to access accounting data electronically at any time and from any location. Nonetheless, disclosure practices on South African municipal websites are inconsistent, with some providing comprehensive information while others present only limited details.

### **Legislative Framework**

Several legislative instruments underpin principles of transparency and accountability in local budget management, notably the MFMA, PAIA, and the Public Administration Management Act (PAMA) No. 11 of 2014 (Terrance & Uwizeyimana, 2023). Collectively, these statutes mandate that municipalities maintain financial and operational information in a manner that is both accessible and user-friendly. Municipal websites function as key channels for disseminating budget-related materials, including Integrated Development Plans (IDPs), annual budgets, adjustment budgets, and annual reports, in line with National Treasury guidelines (Balaji, 2025). The success of transparency initiatives, however, is closely linked to municipal capacity, encompassing both financial and human resources, to develop ICT infrastructure and sustain digital platforms (Hochstetter et al., 2021). Municipalities with limited resources, particularly in rural areas, frequently encounter difficulties in fulfilling these requirements, thereby creating disparities in information accessibility across different localities.

### **Theoretical Framework**

Legitimacy theory suggests that municipalities must align their operations and reporting practices with community expectations and societal norms to secure and maintain public trust (Jejenywa et al., 2024). Amid widespread service delivery grievances and declining public confidence, municipalities face mounting pressure to exhibit professionalism, integrity, and effective performance in financial reporting. This expectation extends beyond regulatory compliance to encompass performance-focused audits (Maremi et al., 2022). The AGSA plays a pivotal role by conducting both regularity and performance audits, thereby reinforcing accountability and institutional legitimacy.

Municipal financial statements, prepared in accordance with GRAP standards and employing accrual accounting, are critical tools for evaluating budget execution. Key

reports, including the Statement of Financial Performance, Statement of Financial Position, and Cash Flow Statement, provide insights into the efficiency of resource allocation and utilisation (Butana & Niyitunga, 2024). The transition from cash-based to accrual accounting in South Africa has strengthened the accuracy and comprehensiveness of municipal financial reporting. The online publication of financial information represents a proactive approach to transparency, allowing municipalities to signal their commitment to open governance. In politically charged contexts such as South African municipalities, political competition can either enhance or impede transparency (Singh et al., 2025). Research indicates that incumbent municipal leaders under political pressure may adopt extensive digital transparency measures to bolster credibility and restore public confidence. Conversely, adversarial political environments may increase the risk of misinformation and reputational attacks, potentially undermining the benefits of transparency. Consequently, municipalities must balance open reporting with the preservation of institutional credibility in sensitive political settings (Idzi & Gomes, 2022).

Institutional theory and agency theory offer analytical frameworks for examining municipal financial reporting practices (Shibambu, 2024). Institutional theory asserts that organisational structures are shaped by the social and environmental context in which they operate. In accounting research, it is widely used to explore how organisations adapt their practices to meet environmental expectations, establishing structures aimed at achieving operational success and enhancing outcomes (Tiika et al., 2024). Municipal financial reporting, particularly through online disclosure, functions as a mechanism to implement legal requirements and achieve legitimacy within institutional frameworks. Regional policies guide local government actions that serve community interests. Implementation challenges, which generate information asymmetry, can impair service delivery and create agency problems (Tiika et al., 2024). Agency problems are prevalent across organisations (Terrance, 2023b). Within the public sector, such conflicts arise between elected officials (principals) and citizens (agents). Municipal personnel, possessing superior knowledge, may make decisions that prioritise governmental authority over community welfare. To mitigate these conflicts, municipalities must ensure that financial information is publicly accessible and presented accountably.

The provision of accounting information via online financial reporting can be conceptualised as the interaction of information supply and demand between principals and agents (Ngome & Yeom, 2024). Local government operations establish an agency relationship in which municipalities act as agents and the community as principals, producing agency challenges that necessitate active monitoring by the principals. E-government initiatives aim to reduce information asymmetry between municipal agents and citizen principals. Empirical research has identified several organisational characteristics influencing administrative innovation, including

municipal size, functional differentiation, organisational age, opportunities for innovation, employment specialisation, debt financing, and intergovernmental revenue (Molobela, 2025). Certain attributes directly relate to agency theory, particularly regarding the disclosure of information to minimise knowledge asymmetry between principals and agents.

## **Budget Formulation and Implementation**

In South Africa, municipal budget preparation and execution are conducted in accordance with statutory frameworks, primarily the MFMA and the Municipal Systems Act No. 32 of 2000. The process encompasses multiple stages—IDP formulation, budget development, council approval, implementation, oversight, and accountability reporting—designed to align municipal fiscal operations with executive directives and societal expectations, thereby reinforcing transparency, accountability, and civic participation (Nkgapele, 2024; Omweri, 2024). Agency theory posits that the community, as principal, depends on elected officials, acting as agents, to safeguard its interests; however, weak monitoring structures can compromise this relationship. Public participation is formally encouraged through consultation during IDP and budgeting processes. Yet, citizens often lack the technical knowledge or access to information required to effectively monitor municipal performance (Maepa et al., 2023). Accordingly, municipal councils play a crucial oversight role, fulfilling legislative, financial, and supervisory duties on behalf of the community. This governance framework represents a collaborative political partnership between the executive branch (mayor and municipal administration) and the legislature (municipal council), ensuring financial accountability through structured and transparent procedures (Djatkiko et al., 2025).

## **Research Objectives**

This study investigates the influence of municipal size—measured through asset holdings and budget scale—and the quality of financial reporting on accountability and transparency within local governance, drawing on agency theory as a conceptual foundation. South African municipalities are enhancing the accuracy and reliability of financial statements through measures such as accrual accounting reforms and the implementation of mSCOA, both of which are consistent with National Treasury policy directives. The research further explores the oversight role of municipal councils in promoting financial transparency, applying institutional theory to evaluate how municipalities seek legitimacy via comprehensive financial and non-financial disclosure. The findings underscore the significance of effective governance mechanisms in aligning municipal performance with public expectations, particularly in the context of widespread concerns regarding service delivery, corruption, and administrative inefficiencies. This study contributes empirical insights into the determinants of transparency within South African municipalities, highlighting factors

such as local government size, the quality of financial statements, compliance with regional disclosure requirements, and the surrounding political environment. By examining institutional, agency, and legitimacy theories—conceptual frameworks predominantly applied in the private sector—this research extends the literature on municipal governance and transparency into the context of local government.

## LITERATURE REVIEW

### Transparency in Local Government

The availability of government-held data remains a critical concern for citizens, closely linked to ethical considerations, corruption, administrative irregularities, and accountability (Matlala, 2024). Transparency is a core element of effective governance, enabling citizens to gain insight into governmental operations, particularly in relation to public finance management. Jibladze et al. (2024) outline several advantages of transparency: (1) mitigating uncertainty to support fiscal and economic stability; (2) strengthening governmental accountability by facilitating oversight from legislatures, media, and other entities; (3) enhancing public trust and promoting social cohesion; and (4) improving the overall financial environment.

### E-Government

Rarhoui (2024) distinguishes between external and internal applications of internet technology. Web-based tools can facilitate enhanced communication within communities, while the internal deployment of web technologies and other ICT offers substantial potential as administrative instruments for the collection, storage, organisation, and management of knowledge and data. E-government represents an organisational framework that utilises ICT to improve interactions and transactions among citizens, businesses, and government entities, thereby fostering efficiency, productivity, transparency, and accountability within communities (Rarhoui, 2024).

South Africa operates as a unitary constitutional democracy comprising three interrelated spheres of government: national, provincial, and local, as established by the Constitution of the Republic of South Africa, 1996. While each sphere maintains distinct responsibilities, effective governance requires coordination among them. The local government tier includes metropolitan, district, and local municipalities, each empowered to manage its affairs and deliver services in accordance with principles of decentralisation and progressive local governance. The legislative framework, including the Local Government: Municipal Structures Act (Act No. 117 of 1998) and the Municipal Systems Act (Act No. 32 of 2000), provides municipalities with autonomy to plan and execute service delivery aligned with community priorities and national objectives (Nambassa & Nurmandi, 2024).

The MFMA regulates municipal financial management, aiming to modernise and standardise budgeting, financial reporting, and oversight processes. It requires municipal councils to uphold sound financial governance and implement transparent procedures for budget preparation, execution, and accountability (Zungu, 2024). The MFMA also defines the responsibilities of accounting officers, including the preparation and maintenance of key financial records, such as budget reports, annual financial statements, cash flow statements, and asset registers. Post-apartheid financial reforms sought to enhance transparency, fiscal discipline, and accountability within the public sector. These reforms formed part of broader Public Financial Management (PFM) transformation initiatives, including the adoption of accrual accounting in line with GRAP standards. The ASB, established under the PFMA (Act No. 1 of 1999), issues GRAP standards to guide municipalities and public entities in producing financial statements that accurately reflect their financial position and performance (Nambassa & Nurmandi, 2024). To improve oversight and reporting consistency, the National Treasury introduced mSCOA, which standardises financial data classification across municipalities. This initiative facilitates efficient analysis, benchmarking, and public access to municipal financial information. South Africa's shift towards modern, transparent, and accountable governance embodies the principles of effective public management, aligning with global trends in financial reform and emphasising the municipal responsibility to operate transparently and serve the public interest.

### **Theoretical Perspectives**

Zungu (2024) suggested that institutional and agency theories function as complementary frameworks for analysing municipal financial reporting practices. Institutional theory asserts that organisations adapt their structures and behaviours in response to pressures from their institutional environments. Agency problems emerge when principals delegate decision-making authority to agents. Within the public sector, such dilemmas arise between elected officials and appointed administrators, with taxpayers, representing the community, acting as principals. The online dissemination of municipal financial data can be interpreted through the lens of agency theory. The principle of legitimacy provides a foundation for provincial leadership decisions to make financial information publicly available via official websites. According to Mofokeng et al. (2025), legitimacy is grounded in the understanding of social contracts between societal institutions and the broader community. One practical approach involves leveraging internet resources, particularly official websites, to facilitate transparent information disclosure.

### **Municipal Size and Transparency**

A substantial body of research explores knowledge accessibility within local government, with particular emphasis on the transparency of financial data. Hofisi and

Chigova (2023) contend that the total asset value of local government is positively associated with community engagement in municipal operations. Similarly, Zhang and Kimathi (2022) reported that municipal size, as measured by total resources, correlates with the accessibility and affordability of financial data on official websites. Soga (2022) and Tshuma et al. (2024) observed that municipal size, quantified by total assets, affects the online dissemination of financial information. In contrast, Maleka and Moeti (2021), using total assets as a proxy, concluded that asset magnitude does not determine compliance with mandatory disclosure of municipal financial data in South Africa. This conclusion is supported by Acquah et al. (2025), who found that provincial government assets similarly do not influence the extent of municipal financial reporting. Legitimacy theory suggests that municipalities are expected to utilise their assets effectively to achieve operational objectives, thereby fostering community endorsement and support for sound governance. Mutiarin et al. (2024) highlighted that the online availability of financial statements reflects the presence and accessibility of financial resources. From an agency theory perspective, the provision of budgetary information represents an effort to reduce information asymmetry between municipal agents and citizen principals.

**Hypothesis 1:** *Municipal size positively influences transparency in South African local governance.*

### **Financial Reporting Quality and Transparency**

Following the preparation of municipal financial statements for public access, audit procedures are conducted to assess their accuracy, typically carried out by external financial auditing firms. Sabani (2021) provided empirical evidence indicating that municipalities recognised by external bodies for excellence in financial reporting are more likely to publish their financial statements online. Conversely, Tshabane (2023) reported that audit evaluations do not necessarily influence the online disclosure of municipal financial reports. From the perspective of agency theory, the community, as principal, expects the government, acting as agent, to demonstrate integrity in financial management, validated through auditor assessments. Audit results, conveyed in the form of audit opinions, offer information regarding municipal performance in managing public finances.

**Hypothesis 2:** *Financial reporting quality positively influences transparency in South African municipalities.*

### **Municipal Accountability and Transparency**

The regulation of financial accounting can be interpreted through two principal lenses: the market-based perspective and the pro-regulation perspective (Chitimira & Motlogelo, 2024). Institutional theory explains how organisations adapt their structures and practices in response to environmental pressures. Organisational

frameworks are designed to achieve effectiveness by establishing legitimacy for actions undertaken to improve outcomes. All South African municipalities are required to adopt accrual-based accounting standards as prescribed by the MFMA and implemented through GRAP (Chitimira & Motlogeloa, 2024). Compliance with these standards is essential for producing reliable and transparent AFS, which are subject to audit by the AGSA. Failure to comply can lead to adverse audit opinions, reputational harm, and potential intervention by provincial or national authorities under Section 139 of the Constitution. Evidence from research and audit findings indicates that the adoption of accrual accounting in municipalities is largely driven by regulatory frameworks and enforcement mechanisms established by the National Treasury and oversight institutions (Olumekor et al., 2025). Municipalities with strong internal controls and a culture of compliance are more likely to produce timely and transparent financial statements.

**Hypothesis 3:** *Municipal accountability to regulations positively influences transparency in South African municipalities.*

### **Political Environment and Transparency**

Molobela (2025) argued that political opponents are quick to highlight deviations in the ruling party's actions from pre-election promises. Heightened political competition creates stronger incentives for municipalities to demonstrate government legitimacy by publishing economic and financial data on official websites (Netshirando et al., 2024). Legislative legitimacy relies on the proper execution of legislation, budgeting, and oversight functions in accordance with the legal framework governing executive operations at the local government level. Cloete (2023) suggested that intensified political rivalry encourages municipalities to make financial information available online. In contrast, Udoh (2024) reported that political competition does not necessarily affect voluntary disclosure of accounting information via the internet. Empirical evidence from Nguyen et al. (2024) indicates that political competitiveness can, however, prompt municipalities to release financial disclosures on their websites.

**Hypothesis 4:** *The political atmosphere in local municipalities positively affects transparency in South Africa.*

## **RESEARCH METHODOLOGY**

### **Population and Sample**

The study population consists of all municipal administrations in South Africa as of 2019. A purposive sampling approach was adopted, focusing on municipalities that meet the following criteria: (1) maintain publicly accessible websites, (2) provide financial reports for the 2019 budget year, and (3) have available data regarding audit

opinions and the political environment, derived from council member demographics spanning 2020 to 2024.

### Data Collection

Secondary data were utilised from municipal financial disclosures available on official websites in 2019. The dataset includes variables such as municipal size, financial statement quality, municipal responsiveness, and the political context, all collected from municipal government websites. Information on financial statement quality was obtained from municipal websites and other official government sources. Data concerning the political environment were derived through an analysis of regional political parties and council executives, using information provided on regulated municipal websites.

### Research Model

The research framework is defined as follows:

$$TansPDi,t = \beta_0 + \beta_1 Asseeti,t + \beta_2 Aopinion_i,t + \beta_3 Accrual_i,t + \beta_5 Politics_i,t + e$$

Where,

$$\begin{aligned} \text{Transparency} &= \text{The Transparency of Local Municipality} \\ \text{Asset} &= \text{The Size of Local Municipality} \\ \text{Opinion} &= \text{The Quality of Financial Statements} \\ \text{Accrual} &= \text{The Local Municipality Response Rate} \\ \text{Politics} &= \text{Political Environment} \\ e &= \text{Error} \end{aligned}$$

### Variable Measurement

#### Dependent Variable: Transparency

The dependent variable is municipal transparency, conceptualised as the degree to which local authorities publicly disclose information, including both financial and non-financial data, depending on its accessibility through municipal websites. Data availability was evaluated using an index adapted from [Rahman et al. \(2024\)](#) for the South African context.

#### Scoring Calculation

- 1 point if the municipal website appears on the first page of Google search results when the municipality's name is entered
- +1 point if financial and non-financial data can be accessed within three clicks or fewer

- +1 point if the data are downloadable in multiple formats
- +1 point if historical financial and non-financial information is available on the website

Maximum Total Score: 4

Minimum Score: 1

## **Independent Variables**

### **Municipal Size**

Municipal size functions as an indicator of the economic resources controlled or held by local government, reflecting past accumulation from which future economic benefits are anticipated. It is measured by total assets, as identified by [Hans and Rutenge \(2024\)](#). For analytical purposes, municipal resources are quantified using a scale ratio, specifically the natural logarithm of total assets.

### **Financial Reporting Quality**

Financial reporting quality is evaluated through audit outcomes issued by the AGSA, expressed in the form of audit opinions. These opinions serve as indicators of the quality of financial accountability demonstrated in municipal financial statement preparation. Audit opinions are classified into four categories: adverse opinion, disclaimer of opinion, qualified opinion, and unqualified opinion. Measurement employs a dummy variable following the methodology of [Nokele and Mukonza \(2021\)](#), where 1 represents an unqualified opinion and 0 represents any non-qualified opinion.

### **Municipal Responsiveness**

Municipal responsiveness relates to the manner in which municipalities respond to central government regulations that carry public implications. This study assesses responsiveness by examining the adoption of accrual-based accounting standards in line with the MFMA and ASB directives. GRAP standards mandate that all municipalities apply accrual-based accounting in preparing and presenting financial statements. Full GRAP implementation was phased in gradually, guided by National Treasury directives and monitored through AGSA audit assessments.

Compliance and accountability were evaluated by analysing the availability and quality of accrual-based financial statements published on provincial and municipal websites.

## Measurement Utilised a Dummy Variable

- 1 = Implementation of accrual-based GRAP accounting prior to the designated compliance deadline
- 0 = Implementation during the 2015 fiscal year

This method allows determination of whether early compliance is associated with higher transparency and stronger institutional commitment to financial governance improvements.

Political Environment: [Zuriaga et al. \(2010\)](#) argued that political opponents are likely to expose deviations in ruling party conduct from pre-election promises. Within this study, the political environment is considered to influence the effect of municipal financial performance on the transparency of financial data published online, particularly in cases where regional leaders are supported by minority parties ([Nokele & Mukonza, 2021](#)).

## Variable Measurement Uses Dummy Variables

- 1 = Minority Party Support
- 0 = Majority Party Support

## Statistical Tests

Statistical tests include descriptive statistical analysis to summarise research observations. Classical assumption assessments comprise multicollinearity tests, which examine whether the regression model detects interrelationships among independent variables, and heteroskedasticity tests, which evaluate whether the variance of residuals differs across observations. The study model was tested using multiple regression analysis with a 5% significance level, implemented through SPSS software. Sensitivity analysis for the dependent variable, representing data disclosure, was performed by evaluating the extent of municipal financial information release, following the approach of [Sarantis et al. \(2024\)](#).

[Table 1](#) provides a structured overview of the variables used in the empirical model by describing their type, measurement, expected sign, and data sources. It serves as the conceptual and methodological foundation of the regression analysis by clarifying how municipal transparency is operationalised and which explanatory factors are hypothesised to influence it. The dependent variable, municipal transparency (TRANSP), is measured using a transparency index ranging from 1 to 4, capturing the availability and accessibility of financial and non-financial information on municipal websites. This index reflects key dimensions of digital governance, including website visibility, ease of access, downloadability of documents, and availability of historical information. By relying on official municipal websites as the data source, the study

directly aligns transparency measurement with e-government practices in South African municipalities.

The independent variables represent institutional, financial, and political characteristics expected to influence transparency. Municipal size (ASSET) is proxied by the natural logarithm of total municipal assets, reflecting resource capacity and operational scale. A positive relationship is expected, based on the assumption that larger municipalities possess greater financial and technological capacity to support digital disclosure.

Financial reporting quality (OPINION) is measured using a dummy variable based on the Auditor-General's audit opinion, where an unqualified opinion indicates higher reporting quality. The expected positive sign reflects agency and legitimacy theory arguments that higher-quality financial reporting enhances accountability and motivates broader public disclosure. Municipal responsiveness, captured through accrual-based accounting adoption (ACCRUAL), is also measured as a dummy variable. This variable reflects compliance with GRAP standards and National Treasury reforms. Early or timely adoption is expected to signal stronger institutional commitment to transparency and regulatory accountability. Finally, the political environment (POLITICS) captures political competition within municipal councils, distinguishing between minority and majority party governance. A positive expected sign suggests that politically competitive environments create incentives for municipalities to enhance transparency as a legitimacy-seeking strategy.

**Table 1: Description and Measurement of the Variables**

| Variable Type        | Variable Name          | Symbol | Measurement   | Expected Sign | Data Source                          |
|----------------------|------------------------|--------|---|---------------|--------------------------------------|
| Dependent Variable   | Municipal Transparency | TRANSP | Transparency index measuring the availability and accessibility of financial and non-financial information on municipal websites. The index ranges from 1 to 4 based on website visibility ease of access downloadability and availability of historical information. | -             | Municipal Official Websites          |
| Independent Variable | Municipal Size         | ASSET  | Natural logarithm of total municipal assets as reported in annual financial statements used as a proxy for municipal size and resource capacity.  | +             | Municipal Annual Financial Statement |

|                      |   |            |  |   |  |
|----------------------|---|------------|--|---|--|
| Independent Variable | Financial Reporting Quality                 | OPINION    | Dummy variable based on auditor general audit opinion; 1= unqualified audit opinion; 0= qualified, adverse, or disclaimer opinion.             | + | Auditor General South Africa (AGSA) Reports              |
| Independent Variable | Municipal Responsiveness (Accrual Adoption) | ACCRUAL    | Dummy variable indicating compliance with accrual based GRAP accounting standards; 1 = early or timely implementation; 0= late implementation. | + | Municipal Financial Report, National Treasury Guidelines |
| Independent Variable | Political Environment                       | POLITICS   | Dummy variable measuring political competition; 1= minority party governance; 0= majority party governance.                                    | + | Municipal Council Composition Records                    |
| Error Term           | Disturbance Term                            | $\epsilon$ | Captures unobserved factors influencing municipal transparency not explicit included in the model.   | - | -  |

## RESULTS AND DISCUSSION

### Descriptive Statistics

The research sample consists of 18 local municipalities throughout South Africa. Descriptive statistics are summarised in [Table 2](#). [Table 2](#) presents the descriptive statistics of the variables employed in this study, encompassing transparency, municipal size (assets), audit opinion, accrual adoption, and political environment, based on a sample of 18 South African local municipalities. The mean transparency score is 1.69, with a minimum of 1.00, a maximum of 3.00, and a standard deviation of 0.75. Given that the transparency index ranges from 1 to 4, these results suggest that, on average, municipalities demonstrate a low to moderate level of online transparency. Although several municipalities improve their online presence through search engines and provide limited access to financial and non-financial data, few meet advanced transparency criteria, such as offering downloadable formats and historical records. The moderate standard deviation indicates variability among municipalities, highlighting uneven adoption of e-government initiatives and transparency practices.

**Table 2: Statistic Descriptive**

| Variables           | Mean          | Max            | Min            | SD            |
|---------------------|---------------|----------------|----------------|---------------|
| Transparency        | 1.69          | 3.00           | 1.00           | 0.75          |
| Asset               | 1.200 Million | 29.785 Million | 19.500 Million | 4.900 Million |
| Audit Opinion       | 0.49          | 1.2            | 0.00           | 0.48          |
| Accrual             | 0.19          | 0.59           | 0.00           | 0.45          |
| Politic Environment | 0.56          | 0.58           | 0.00           | 0.48          |
| Sample              | 18            | 18             | 18             | 18            |

Source: Self-Generated

Municipal size, measured by total assets, shows substantial variation across the sample. The average asset value is approximately R1.2 million, ranging from R19.5 million to R29.8 million, with a standard deviation of R4.9 million. This broad range reflects the heterogeneous nature of South African municipalities, where the allocation of resources differs considerably. Such disparities are particularly relevant in digital governance, as larger municipalities may possess greater financial capacity to invest in ICT infrastructure; however, this does not automatically translate into higher transparency, as illustrated by subsequent regression analyses. The audit opinion variable has a mean of 0.49, indicating that fewer than half of the municipalities achieved unqualified audit opinions during the study period. This result underscores ongoing challenges in financial management, regulatory compliance, and the quality of reporting. A standard deviation of 0.48 reflects notable variability in audit outcomes, emphasising the AGSA's concerns regarding deficiencies in municipal financial governance and accountability.

Accrual accounting adoption exhibits a mean of 0.19, demonstrating that only a small proportion of municipalities implemented accrual-based GRAP accounting promptly or ahead of schedule. Despite regulatory mandates, several municipalities continue to implement accrual accounting inconsistently or belatedly. The standard deviation of 0.45 further highlights the irregularity of compliance, potentially arising from capacity constraints, a shortage of skilled personnel, and institutional weaknesses within local government. The political environment variable has a mean of 0.56, suggesting that over half of the municipalities function under minority or politically competitive governance structures. The substantial standard deviation of 0.48 indicates pronounced diversity in political arrangements across municipalities. This variation is pertinent to transparency outcomes, as politically competitive environments may intensify the pressure on municipal officials to provide information and uphold accountability to residents.

### Classical Assumption Tests

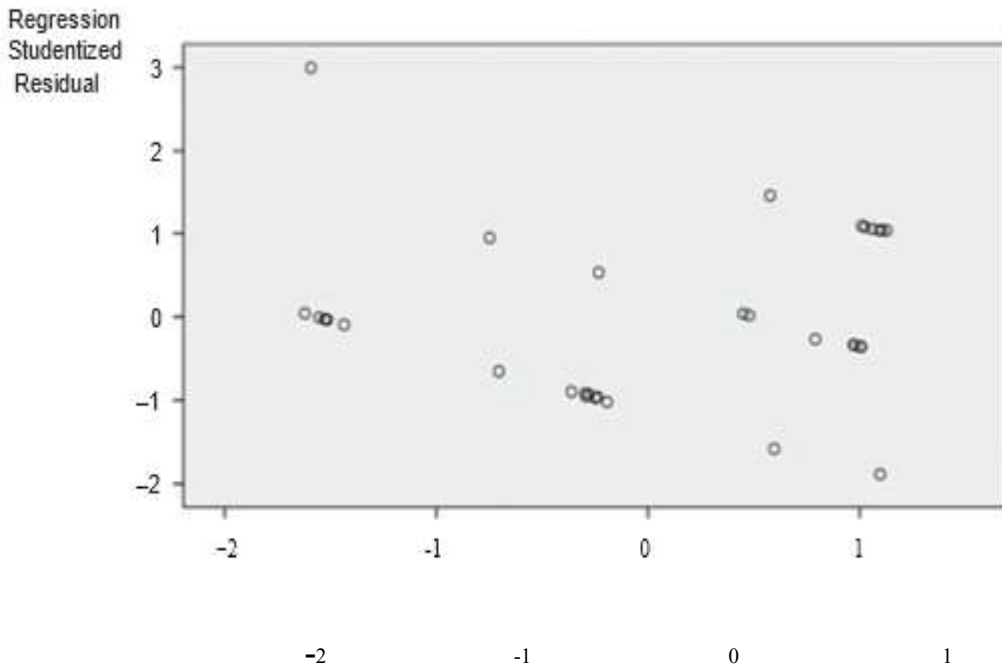
Table 3 presents multicollinearity test results using tolerance values and VIF (Variance Inflation Factor), concluding that no multicollinearity exists in the

regression model. Figure 1 depicts the results of the heteroscedasticity analysis using a scatter plot to identify any discernible patterns in the data distribution. The visual representation shows no apparent trend, indicating the absence of heteroskedasticity.

**Table 3: Multicollinearity Test**

| Ind Variable        | Tolerance | VIF   |
|---------------------|-----------|-------|
| Asset               | 0.642     | 1.441 |
| Audit Opinion       | 0.712     | 1.321 |
| Accrual             | 0.764     | 1.352 |
| Politic Environment | 0.642     | 1.423 |

Source: Self-Generated



**Figure 1:** Scatterplot of Heteroskedasticity Test for Dependent Variable – Average Estimated Values from Regression (Self-Generated)

## Hypothesis Testing

### Results of the Regression Analysis

Table 4 presents the regression results obtained from SPSS analysis to examine the study hypothesis. The table illustrates the outcomes of hypothesis testing regarding the effect of local government size on the transparency of local governance in South Africa. The results indicate that the scale of local government, measured by total assets, does not have a significant effect on municipal transparency. This implies that the assets held by local municipalities are not being effectively utilised to enhance

financial and non-financial transparency within local administrations. This may be attributable to resources being allocated to purposes other than the provision of ICT infrastructure that would facilitate public access to local government information. These findings contrast with those of [Sarantis et al. \(2024\)](#), who reported that local government size, as indicated by total assets, significantly affects the dissemination of accounting information online. Conversely, the results align with [Nawafleh et al. \(2025\)](#), who employed total assets as a proxy for local government size and found that asset levels do not impact the mandatory reporting of LMFI in South Africa. Similarly, the findings corroborate the conclusions of [Afees \(2023\)](#), which indicated that provincial government asset levels do not affect the extent of local financial data disclosure.

**Table 4: Regression Results**

| Expected Sign             |   | Coefficient | Significance | VIF   |
|---------------------------|---|-------------|--------------|-------|
| Asset                     | + | 0.029       | 0.712        | 1.221 |
| Opinion                   | + | 0.524       | 0.026**      | 1.095 |
| Accrual                   | + | -0.134      | 0.365        | 1.056 |
| Politics                  | + | 0.511       | 0.035**      | 1.214 |
| Constanta                 | + | 1.335       | 0.361        |       |
| Adjusted R <sup>2</sup>   | ? |             | 0.135        |       |
| F-Test Sign (F-Statistic) |   |             | 0.015**      |       |
| N                         |   |             | 18           |       |

**Note:** \*\*Significant at 5 % level.

**Source:** Self-Generated

### Municipal Size and Transparency

The results indicate that municipal size, measured by total assets, does not have a significant impact on transparency within South African local government. This suggests that municipal assets are not being effectively deployed to enhance financial and non-financial transparency. Instead, resources may be directed toward purposes other than supporting ICT infrastructure, which would enable broader online access to local government information. These results contradict the findings of [Sarantis et al. \(2024\)](#), who reported that municipal size, as determined by total assets, affects the online dissemination of accounting records. Conversely, the results correspond with the study by [Nawafleh et al. \(2025\)](#), which employed total assets as a proxy for municipal size and found that assets do not affect the mandatory reporting of local municipal financial information in South Africa. Similarly, the findings are consistent with [Afees \(2023\)](#), which concluded that provincial government assets do not influence the extent of local financial data reporting.

## Financial Reporting Quality and Transparency

The results indicate that the accuracy of financial statements, measured through audit opinions, positively affects transparency within South African local municipalities. This suggests that audit outcomes play a significant role in municipal effectiveness by ensuring the provision of reliable financial statements, thereby strengthening accountability in local financial management and enhancing citizen confidence that municipal resources are used for public welfare. The principal–agent relationship appears to function effectively under these conditions. These findings underscore the importance of municipal efforts to produce accounting records in accordance with prevailing regulations. The results are consistent with [Bwalya and Mulundano \(2023\)](#) but contrast with [Ibrahimi et al. \(2023\)](#), who reported that audit opinions do not affect the online publication of local government financial information. Compliance and responsiveness were further evaluated by examining the availability and quality of accrual-based financial statements disseminated via provincial and municipal websites. Measurement utilised a dummy variable:

1 = Implementation of accrual-based GRAP accounting standards prior to the designated compliance deadline.

This approach allows the study to determine whether early compliance is associated with greater transparency and stronger institutional commitment to financial governance improvements. The compliance date can be specified either for a particular year (e.g., 2014/2015) or aligned with Treasury frameworks such as the mSCOA implementation deadlines, depending on research requirements.

## Municipal Responsiveness and Transparency

The findings reveal that the central government’s regulatory initiatives regarding the implementation of accrual-based accounting do not exert a significant effect on transparency in South African local government. This suggests that the adoption of accrual accounting, intended to improve the release and presentation of municipal financial information, is not yet fully supported by sufficient human resources or infrastructural capacity across all municipalities. Municipal responsiveness was assessed through the evaluation of accrual-based accounting adoption in line with MFMA and ASB standards. GRAP guidelines mandate that all municipalities implement accrual-based accounting in preparing and presenting financial statements. Full GRAP implementation was phased in gradually under directives from National Treasury, with compliance monitored and reinforced through AGSA audit results. Compliance and responsiveness were examined by analysing the availability and quality of accrual-based financial statements published on provincial and municipal websites, using a dummy variable:

1 = Implementation of accrual-based GRAP accounting prior to the designated compliance deadline.

0 = Implementation in 2015.

This methodology enabled the study to determine whether early compliance is associated with improved transparency and a stronger institutional commitment to enhancing financial governance practices.

### **Political Environment and Transparency**

Several South African municipalities have faced challenges in achieving full compliance with the MFMA and mandated GRAP standards, particularly regarding the timely and accurate disclosure of financial information as required by AGSA. Despite the compulsory use of accrual-based accounting, AGSA audit results consistently highlight significant shortcomings in financial management, internal controls, and the quality of submitted annual financial statements. Such deficiencies can undermine municipal legitimacy both in public perception and at higher government levels, potentially resulting in adverse audit opinions or intervention under Section 139 of the Constitution ([Mahmoud et al., 2025](#)).

These outcomes are consistent with prior studies indicating that the implementation of accrual-based GRAP standards has largely been driven by regulatory enforcement rather than voluntary organisational commitment. Municipalities with strong compliance cultures are more likely to adhere to MFMA financial reporting requirements and achieve favourable audit outcomes. This study also considers the influence of political context on municipal transparency. South Africa's political environment, characterised by party dominance, political contestation, and leadership instability, can significantly shape how local municipalities prioritise transparency and accountability. In politically competitive or unstable settings, financial transparency may be strategically employed to enhance public trust or mitigate criticism, depending on municipal objectives at the time.

The results indicate that the political landscape, reflected through political party support for regional leaders, significantly contributes to municipal transparency. This demonstrates the institutional role of legislative bodies in executing legislative, financial, and oversight responsibilities in line with laws regulating executive operations in local government. [Zuriaga et al. \(2010\)](#) argue that in areas of intense political rivalry, municipalities must exert greater effort to establish legitimacy, necessitating effective communication strategies to address stakeholder concerns. The findings of this study do not categorically favour majority or minority parties as regional leaders, emphasising the importance of collaboration between executive and legislative branches in securing legitimacy from the electorate during local elections. These results correspond with [Jacobs and Lemekoana \(2021\)](#), who suggest that higher

political rivalry incentivises local municipalities to publish financial information online. Consistent with [Yakoub et al. \(2024\)](#), the study provides empirical evidence that political competitiveness encourages municipalities to disseminate financial disclosures via websites. However, the findings contradict [Lin and Yaakop \(2024\)](#), who concluded that political rivalry does not influence the voluntary online sharing of accounting data.

Overall, the empirical evidence supports the application of agency theory, legitimacy theory, and institutional theory as critical frameworks for understanding the transparency practices adopted by South African local municipalities. These theories offer foundational perspectives for analysing factors affecting municipal efficiency in both financial and non-financial domains.

### Sensitivity Analysis

[Table 5](#) presents the scoring index used to construct an alternative measure of municipal transparency for the sensitivity analysis. The index captures the availability of financial statements, disclosure formats, and stakeholder engagement mechanisms provided on municipal websites. Sensitivity analysis was performed to evaluate whether alternative measures of the independent variables yield consistent results in estimating the dependent variable. The transparency of local municipal finances was measured using the indicators proposed by [Anggita et al. \(2025\)](#).

**Table 5: Scoring Index**

| No    | Classification             | Explanation  | Scoring | Index |
|-------|----------------------------|--|---------|-------|
| 1     | The Enumerated Information | Balance Sheet  | 1       | A     |
|       |                            | Cost Realisation Report  | 1       | B     |
|       |                            | Cash Flow Statement  | 1       | C     |
|       |                            | Record System  | 1       | D     |
|       |                            | Plans for Strategy   | 1       | E     |
|       |                            | Financial Statement Note   | 1       | F     |
|       |                            | Last Year Information  | 0.68    | G     |
|       |                            | Reporting of the Regions Device Concentrate Section Performance  | 0.68    | H     |
|       |                            | Oversight and Accountability Reports of Government Organisations | 1       | I     |
| LAKIP |                            |  |         |       |
| 2     | Forms Utilised             | PDF  | 1       | J     |
|       |                            | .rar   | 0.68    | K     |
|       |                            | .jpeg  | 0.68    | L     |
|       |                            | Excel  | 0.4     | M     |
|       |                            | PPT  | 0.4     | N     |
|       |                            | Word   | 0.4     | O     |
| 3     | Engagement                 | Email  | 1       | P     |

|  |              |                         |   |   |
|--|--------------|-------------------------|---|---|
|  | with Clients |                         |   |   |
|  |              | Phone                   | 1 | Q |
|  |              | Forum for Conversations | 1 | R |
|  |              | Website Link            | 1 | S |

The results of the sensitivity test are reported in [Table 6](#). This analysis re-estimates the regression model using the alternative transparency index to assess the robustness of the main findings.

**Table 6: Sensitivity Test**

| Expected Sign             |   | Coefficient | Significance | VIF   |
|---------------------------|---|-------------|--------------|-------|
| Asset                     | + | 0.080       | 0.000        | 1.221 |
| Opinion                   | + | 0.029       | 0.032**      | 1.095 |
| Accrual                   | + | -0.102      | 0.755        | 1.056 |
| Politics                  | + | 0.182       | 0.000**      | 1.214 |
| Constant                  | + | -1059       | 0.001        |       |
| Adjusted R <sup>2</sup>   | ? |             | 0.58         |       |
| F-Test Sign (F-Statistic) |   |             | 0.000**      |       |
| N                         |   |             | 18           |       |

**Source:** Data processed, statistically significant at the 5% level. The maximum attainable score for TransPD is 15.4, expressed as a fractional value ranging from 0 to 1 for each domain. The measurement scale was calculated using the following formula: the total score representing disclosures across all provinces (15.4).

As shown in [Table 6](#), the sensitivity analysis largely confirms the main regression results, with audit opinion quality and the political environment remaining statistically significant determinants of municipal transparency, while municipal size and accrual adoption continue to exhibit no significant effect.

## CONCLUSION

This study examined the role of e-government in enhancing transparency and accountability in South African municipalities. Results indicate that audit opinion quality and political environment significantly improve municipal transparency, whereas municipal size and responsiveness to accrual-based regulations have no notable effect. These findings underscore the importance of robust auditing mechanisms and political incentives in promoting transparent governance. The study suggests several practical implications. Municipalities should enhance financial reporting systems and ensure timely, accurate audits to strengthen public trust. Policymakers must recognise the influence of transparency initiatives in politically competitive contexts. Furthermore, investment in digital infrastructure and capacity building is critical for consistent and accessible disclosure of financial and non-financial information. Limitations include the restricted timeframe, which may not

capture evolving e-government trends, and the reliance on accrual adoption as a proxy for municipal responsiveness, which may not fully reflect broader regulatory compliance. Future research should extend temporal and geographical scope, compare South Africa with other developing countries, and incorporate qualitative insights from municipal officials and community stakeholders. In conclusion, municipal transparency depends not solely on digital system adoption but on the quality of financial oversight and the presence of political incentives for openness. Institutional, agency, and legitimacy theories provide analytical frameworks, yet genuine progress requires coordinated political commitment, rigorous regulation, and strategic technological investment. When combined, these factors enable municipalities to move beyond mere compliance toward authentic accountability, reinforcing public trust essential for effective local governance and democratic participation.

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