Internal Control as a Catalyst for Clean Audit Outcomes in the Local Government: The Moderating Role of Information Technology

K.N. Motubatse, C.C. Ngwakwe, M. Sebola

Abstract: There is a pressing need for effective monitoring of internal control systems to ensure that municipalities improve and sustain audit outcomes. In this context, there is the need for the management of municipalities to monitor the performance and maintenance of the adequate systems of internal controls available. The objective of this study is to examine the moderating role of information technology (IT) system governance in internal control on the achievement of clean audit outcome. The paper applied a quantitative approach with the aid of simple regression analysis. Data analysis was conducted in two phases; the first phase without IT governance and the second phase introduced the IT governance. Results from the analysis showed that the first phase without the IT system governance was insignificantly related to clean audit outcome; but the second phase with the IT system governance showed a p-value of less than 0.01 which shows that the moderating role of IT governance improved the model to be significantly related to clean audit outcome. The practical implication is that the effectiveness of municipal internal control toward an improved audit outcome can be enhanced significantly if information technology system governance is installed and managed efficiently in local municipalities. Future researcher on municipal internal, provincial or national control should include the IT system governance in their research model.

Keywords: Information technology governance; internal control, public sector, auditing, monitoring compliance

I. INTRODUCTION

For nearly two decades, the South African municipalities have been struggling to achieve clean audit outcomes. This struggle has been caused by related internal control issues which, from the Auditor-General’s perspectives, are commonly regarded as a type of internal control deficiencies. Ge and McVay (2005) state that material weakness prevents management from effective reporting of internal control systems. Although, Majoor (2000) purports that it can be very confusing in practice about what effective internal controls actually are, Doyle et al. (2007) mention that an effective internal is through monitoring and DeFond and Lennox (2017) the auditor’s ability to identify systemic audit deficiencies through audit procedures. As a result, the poor audit outcomes have been fundamentally hindered by internal control deficiencies. Ge et al. (2018) state that local governments are required to easily identify deficiencies in the systems of internal control. These deficiencies include such weak leadership (Park et al. 2017), human resource (Malalgoda and Amarantunga, 2015), audit actions plan (Ruiz, 2018; Wahl, 2015), information technology governance and controls (Haislpl et al. 2016; Lee et al. 2016; Stefaniak et al. 2012), proper record keeping (Frazer, 2016), daily and monthly controls (Dickins and Fay, 2016; Chen et al. 2017), and review and monitoring compliance (Abernathy et al. 2017). These internal control deficiencies are amplified in the context of compliance with internal control systems, which largely depends on the so-called municipal leadership. According to Ge et al. (2018) a well-designed internal control aids both management and the organisations to achieve the intended goals. Deis Jr & Giroux (1992) further mention that material weakness such as noncompliance with laws and regulations affects the audit outcomes. Internal control systems are essential towards the realisation and continued existence of organisations’ goals. However, due to the inherent limitations of internal controls to address any deficiencies in key controls, Abdulkadir, (2014) states that the contributing problem towards internal control deficiencies is no-compliance with regulations and poor monitoring of internal control systems. Therefore, this study examines the status of the basic controls in the local government in order to improve clean audit outcomes. This research study looks into the effect of weak leadership, human resource, audit actions plans, information technology governance and controls, proper record keeping, daily and monthly controls, and review and monitoring compliance. None of the existing previous research has examined the moderating role of information system governance on the audit outcome. Therefore, the objective of this study is to examine the moderating role of information technology (IT) system governance in internal control on the achievement of clean audit outcome. This paper thus contributes to existing research by bridging existing gap in knowledge.

II. LITERATURE REVIEW

A literature review is consisted of the summary of key sources and patterns identified: information technology governance and controls, weak leadership, human resource, audit actions plans, proper record keeping, daily and monthly controls, and review and monitoring compliance.

A. Information Technology Governance and Controls

White (2015) highlights that the weakness of...
information technology governance in the public sector relates to system failures. Hence, the controls around the information technology governance have also been recognized as one of the key drivers of audit outcomes (Auditor General, 2011/12). Information technology controls are used to safeguard the integrity of state data which enables service delivery. (Auditor General, 2016/17). According to Masli et al. (2010), information technology plays an indispensable role in the effectiveness of internal control systems. However, poor internal control in accounting controls results in insufficient use of information systems (Ge & McVay, 2005). Klamm and Watson (2009) examine internal controls on information technology and non-information technology looking at the organisations’ reporting of material weaknesses and reliability of financial data and their study results show that misstated accounts are positively related to weak internal control systems. Hence, weak information technology controls are caused by weak control environment, risk assessment and monitoring (Klamm & Watson, 2009). Although, the organisations with lower accounts transactions seem to have less information technology problems (Doyle et al., 2007), it is not the case with the public sector as information technology tools are still not delivering value to improve internal control performances.

B. Weak Leadership
Rendon & Rendon (2016:752) identify poor ethical standards, deficiency of internal controls and poor oversight by leadership as the root causes for weak leadership. According to Migdal (1988) many government organisations had been exceedingly weak and corrupt during the half of the century because of weak leadership. While Gurgur and Shah (2005) indorse that corruption in the public sector is perpetuated by weak administrative internal controls. Arel et al. (2012) state that good ethical leadership results in positive financial reporting decisions. Goyal and Park (2002) also purport that internal control systems become weak if managers are not disciplined for non-adherence. Thus, weak government fails to “fulfill expectations in some areas and performing poorly in others” (Rotberg, 2003, p.4). Torfing and Ansell (2017) explore how political leadership and policy innovation can be enhanced through collaborative governance and found that politicians are badly positioned to initiate, drive and lead innovations in the controls of government administrations. Thus, ineffective internal controls and poor governance provide increase opportunity for fraud in the organizations (Rendon & Rendon, 2016:752).

C. Human Resource
Human resource guidelines are intended to facilitate effective internal control over financial reporting (Rittenberg et al. (2007). Human resource is there to implement and to support the achievement of financial reporting (Rittenberg et al. (2007). Choi et al. (2013) investigated the effect of human resource over financial reporting at the firm and the individual level. Their study found that a change in internal control is likely to results in weak internal control implementation. According to Aurand et al. (2005), human resource continues to play its key role of maintaining internal control systems in the organisations. However, Jensen (1993) maintains that human resource incapacity poses a weak governance system. Thus, this puts the successful implementation of human resource management tasks at risks (Vovchenko et al., 2017). Jiang and Li (2010) highlight that such risks are mainly related to neglecting of internal control systems by the management, weak internal control environment, information distortion and ineffective monitoring of controls.

D. Audit Action Plans
Audit action plan actions address plan of action” document, included descriptions of the actions undertaken after the audit is completed. Henceforth, auditors can help the organisations to improve and achieve their objectives through the audit recommendations (Bassett, 2007). Russell (2003) states once the audit action plans could be used as a checklist to achieve planned results and continual improvement of audit outcomes. Since the audit action plans happened after the conclusion of the audit process, it used as a discussion document by the auditors to help management to strengthen the identify gaps in the existing internal control systems. Therefore, such discussions need to provide sufficient information that can assist management to take actionable steps to respond to audit recommendations (Bassett, 2007). Brooks and Pariser (1995) conducted a study to survey audit recommendation follow-up systems currently utilized by state governments. Their study found that there is a void in the implementation of audit recommendation with no follow-up systems in the public sector financial management. Thus, government managers should continue to monitor on audit recommendations to ensure their effective implementation of proper human resource policies and procedures. So, for audit results to be implemented, management should buy-in with a clear action plan to effectively support the internal control systems (Bassett, 2007). According to Alzeban and Sawan (2015), governance structures such as the audit committee should oversee and monitor how management respond to audit findings and recommendations. Hsu and Sakai (2009) report that audit action plans should be used as a checklist by management to insure complete and in-depth assessments of management actions on audit outcomes. It is used to gauge management actions and how the organisations are improving (Russell, 2004) and opportunities for effectiveness of corrective and preventive actions, which are an integral part of the audit system (Karapetrovic & Willborn, 2001).

E. Proper Record Keeping
Record keeping constitutes a good control activity (Palmer, 2000). The public sectors need information to function properly (Brandon, 2016; Penn & Pennix, 2017). If information is mismanaged and misplaced to utilised for further treatment (Papp, 2018; Penn & Pennix, 2017). Since audit opinion verifies the information companies published authenticity (Tian and Xin, 2017), poor accounting records is therefore an indication of poor accountability (Iyoha and Oyerinde, 2010) and lacked accounting register (Lassou, 2017).
A proper record keeping helps to monitor and keep track of accounting documents. Thus, a proper accounting may guarantee a better audit opinion, if accounting documentation and recording are properly record captured, checked, recorded, and reviewed. Uyar et al. (2017) conducted the study to investigate the association between the accounting information system, from bookkeeping, financial reporting, and budgeting system. Their study finds financial reporting controls such as bookkeeping and budgeting system have a positive impact towards internal control. Thus, governance should establish and maintain internal control reporting systems to monitor audit failures (Uyar et al., 2017).

**F. Daily and Monthly Controls**

Daily and monthly controls are part of management control system (Christ & Burritt, 2017). Charifzadeh and Taschner (2017) state that this is an internal counting system which supports managers in carrying out their tasks. Another possible explanation is that accounting controls promote and protect sound management practices of financial controls. According to Kennedy and Widener (2008), this are accounting systems which used to process and manage daily and monthly transactions. Kober et al. (2007) examined the relationship between management control system mechanisms and strategy. Their study concluded that lack of adequate management control systems and accounting procedures weakens the effectiveness of internal control systems. Thus, monthly audit report is processed as part of the month end procedures and financial performance reports should be obtained on a monthly or more frequent basis in order to strengthen internal control systems.

**G. Monitoring Compliance**

Monitoring is a key control mechanism to mitigate fraud incidents in the public sector (Kamaliah et al., 2018). Thus, purposively it can be used to review the adequately of internal control system. However, Rehman and Hashim (2018) signify that poor governance is weakening the business transparency and monitoring of internal control. Since management is responsible for the financial reporting, therefore they are responsible for review and monitoring of compliance to ensure that control activities help to prevent and detect risks. Therefore, audit committees can be used with its technical skills of finance, accounting and auditing to effectively monitor the compliance of internal control (Chen & Komal, 2018).

**III. RESEARCH METHODOLOGY**

Data on the strength of internal control in South African municipalities were collected from the Auditor General (AG) report for six years from 2012 to 2107. The data covered seven cross-sectional units of internal control systems namely information technology, record keeping (i.e. accounting), human resources, leadership, action plans, daily records and compliance. The data were analysed using the fixed effect regression model. Hence the regression model was represented by:

\[ Y = \beta_0 + \beta_1 X_1 + \varepsilon \]  

**WHERE:**  
\[ Y \] = audit outcome (independent variable);  \[ \beta_0 \] = regression intercept;  \[ \beta_1 \] = regression coefficient;  \[ X_1 \] = aggregate internal control (independent variable);  \[ \varepsilon \] = error (representing other unaccounted independent variables).

Equation 1 is the first model without the information technology governance in the aggregate internal control variable (independent variable (X)).

Equation 2 is the second model containing the information technology governance introduced into the aggregate internal control variable (independent variable (X)).

**IV. RESULT AND DISCUSSION**

The objective of this paper is to ascertain if the introduction of information technology systems management into the international control system can make a significant difference toward strengthening the effectiveness of internal control to achieve a better audit outcome. To this end, the ensuing analysis in Table 1 and Table 2 fulfils this objective. Two models were stated in the preceding section namely, model 1, without the information technology in the model (Table 1), and model 2 with information technology systems management introduced into the model (Table 2). Accordingly, results in Table 1 show that in the absence of information technology, the relationship between internal control and audit outcome is insignificant with the p value greater than 0.05. On the contrary, Table 2 results show that with the introduction of information technology into the model, the relationship between internal control and audit outcome is significant at a p-value of 0.004 which is far lower than the alpha value of 0.05. This means that effective information technology systems governance in the local municipalities internal control systems has the potency to usher improved efficacy of the internal control systems and hence fortifies the internal control oversight role toward achieving improved audit outcome. This paper therefore contributes to practice and theory by showing the importance of integrating a state-of-the-art information technology in local municipalities to improve service delivery and public financial accountability. This paper did not assess the strength of individual internal control systems, it is therefore recommended that future research should explore an extended model wherein individual internal control system variables should be assessed to determine their relative powers of efficacy.
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Table 1: Model 1: Fixed-effects, using 36 observations (without Information Technology)

| Coefficient | Std. Error | t-ratio | p-value |
|-------------|------------|---------|---------|
| const       | 1.88091    | 0.481381| 2.3384  | 0.00242 *** |
| IntCon      | 0.06740    | 0.048011| 2.0051  | 0.08384 |
| R-squared   | 0.209991   |         |         |           |
| Adjusted R-squared | 0.047342   |         |         |           |
| P-value(F)  | 0.284251   |         |         |           |
| Durbin-Watson | 1.598637  |         |         |           |

Table 2: Model 2: Fixed-effects, using 42 observations (Including Information Technology)

| Coefficient | Std. Error | t-ratio | p-value |
|-------------|------------|---------|---------|
| const       | 1.97093    | 0.571382| 3.4494  | 0.00152 *** |
| IntCon      | 0.177406   | 0.0590126| 3.0062  | 0.00494 *** |
| R-squared   | 0.608801   |         |         |           |
| Adjusted R-squared | 0.577342   |         |         |           |
| P-value(F)  | 0.040251   |         |         |           |
| Durbin-Watson | 1.518637  |         |         |           |

V. CONCLUSION

The objective of this study is to examine the moderating role of information technology (IT) system governance in internal control on the achievement of clean audit outcome. After a review of related literature, the paper proceeded to apply a quantitative approach with the aim of simple regression analysis. Data analysis was conducted in two phases; the first phase without IT governance and the second phase introduce the IT governance. Results from the analysis showed that the first phase without the IT system governance was insignificantly related to clean audit outcome; but the second phase with the IT system governance showed a p-value of less than 0.001 which shows that the moderating role of IT governance improved the model to be significantly related to clean audit outcome. The practical implication is that the effectiveness of municipal internal control toward an improved audit outcome can be enhanced significantly if IT system governance is installed and managed efficiently in local municipalities. Future researcher on municipal internal, provincial or national control should include the IT system governance in their research model. This paper therefore contributes to practice and theory by showing the importance of integrating a state-of-the-art information technology in local municipalities to improve service delivery and public financial accountability. This paper did not assess the strength of individual internal control systems, it is therefore recommended that future research should explore an extended model wherein individual internal control system variables should be assessed to determine their relative powers of efficacy.

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