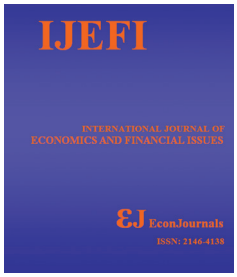

International Journal of Economics and Financial Issues

ISSN: 2146-4138

available at http: www.econjournals.com

International Journal of Economics and Financial Issues, 2024, 14(5), 220-232.

Audit Quality and Financial Statement Manipulation: The Moderating Effect of Tone at the Top

Alastair Marais*

School of Accounting, Economics and Finance, University of KwaZulu-Natal, South Africa. *Email: maraisa@ukzn.ac.za

Received: 10 March 2024 **Accepted:** 21 July 2024 **DOI:** https://doi.org/10.32479/ijefi.16409

ABSTRACT

South Africa has recently fallen victim to numerous major corporate frauds. This has called into question South Africa's audit quality, as indicated by its loss of the number one place for auditing and reporting standard strength, according to the World Economic Forum. This study examined the moderating effect of tone at the top on the relationship between audit quality and financial statement manipulation. Using a South African sample of 829 firm-year observations from 2011 until 2018, principal component analysis was used to construct two audit quality variables (competence and independence) and two tone at the top variables (autocratic and pragmatic). Financial statement manipulation was measured using fraud and discretionary accruals. The findings revealed that while an autocratic tone strengthened the negative relationship between audit quality and fraud, it also resulted in higher income-increasing discretionary accruals. This study contributes to the audit quality literature in South Africa by revealing how the tone at the top can affect the auditor's ability to conduct a quality audit. The results will interest auditors and shareholders seeking to reduce fraud and earnings management.

Keywords: Audit Quality, Financial Statement Manipulation, Discretionary Accruals, Fraud, Tone at the Top, South Africa
JEL Classifications: G340, M410, M420

1. INTRODUCTION

The audit function aims to ensure that financial statements are free from material misstatement and error (DeFond and Zhang, 2014). However, numerous corporate scandals (such as Enron and Worldcom) have occurred despite this fundamental role. Various regulatory reforms have been introduced to address this issue, of which the Sarbanes-Oxley Act (SOX) in the United States (US) is one of the most well-known and influential worldwide. SOX marked a shift from a self-regulating audit profession in the US to a government-regulated one. Similarly, South Africa has recently been affected by large corporate fraud (such as Tongaat-Hulett and Steinhoff). South Africa implemented the new Companies Act, No. 71 of 2008 (effective 2011) and developed a series of world-renowned governance codes (referred to as the King codes) (Mokoaleli-Mokoteli and Iatridis, 2017). These regulatory reforms have reshaped the audit environment, intending to improve audit quality (DeFond and Zhang, 2014). Despite these reforms, South Africa has recently been the victim of major corporate frauds such as Steinhoff and Tongaat-Hulett. Consequently, as a result of the governance reforms and continued corporate frauds globally, there has been a surge in academic research focusing on audit quality (Baatwah et al., 2018).

Audit quality is the auditor's ability to identify and report on manipulations of financial statements (DeAngelo, 1981). Prior literature identifies two auditor attributes required to produce high-quality audits: Competence and independence (Harber and Marx, 2020). Competence is the auditor's ability to identify violations and is commonly proxied by auditor type (Yasser and Soliman, 2018), industry specialisation (Baatwah et al., 2018) and joint auditors (Piot and Janin, 2005). Independence relates to reporting such violations and proxies include auditor size (Mokoaleli-Mokoteli and Iatridis, 2017), auditor tenure (Mukhlasin, 2018), and the

provision of non-audit services (Hohenfels and Quick, 2020). Despite extensive research, empirical evidence on the relationship between audit quality and financial statement manipulation (FSM) remains mixed. This may be because the proxies are considered individually. The individual variables may reflect different aspects of audit quality, providing an incomplete picture (Singh et al., 2019). Therefore, a composite variable may better represent the construct by considering the orthogonal relationships between the proxies (Sun and Cahan, 2009).

Additionally, mixed evidence may result from failing to consider the moderating effect of tone at the top, which is the foundation of a company's internal control environment (Garrett et al., 2021). Management may manipulate the extent and quality of the information provided to the auditors (Lisic et al., 2016). Therefore, auditing standards require auditors to assess management characteristics such as tone at the top (Greiner et al., 2020). An ethical tone would enable the auditor to modify audit procedures nature, timing and extent and rely more on management representations (Garrett et al., 2021). When assessing tone at the top, Schmidt (2014) notes three biases which work against auditors. Firstly, prior mental representations of management (which are more likely to be positive) will impact current assessments and audit judgements. Secondly, the tone at the top evidence is more likely to reflect favourably on management rather than unfavourably. Thirdly, audit procedures are designed to find positive rather than negative evidence. Despite these concerns, Zengin-Karaibrahimoglu et al. (2021) showed that auditors adjust their risk assessments for top management narcissism. However, the tone at the top's impact on auditor competence and independence is yet to be explored.

This study investigates the moderating effect of tone at the top on the relationship between audit quality and FSM for non-financial companies in South Africa. South Africa poses a unique context for this investigation. Firstly, because as a developing country with a dual economy, the country shares aspects of both developed and developing countries (Wesson, 2021). With their predominant focus on developed economies, existing studies on audit quality or tone are not generalizable to developing economies with lower investor protection (Bicudo de Castro et al., 2019; Makhlouf et al., 2021). Secondly, South Africa held the top position for auditing and reporting standard strength from 2010 to 2016 (Wesson, 2021), a ranking that subsequently dropped to 30th following revelations of various economic crimes (Mnguni and Subban, 2022). Thirdly, South African literature on auditor quality is limited, predominantly due to a lack of data availability (Wesson, 2021). Recent audit quality research has focused on the Independent Regulatory Board for Auditor's decision to enforce mandatory audit firm rotation (see, for example, Harber and Marx, 2020). Consequently, this is the first study to investigate the moderating effect of tone at the top on audit quality in South Africa.

This study contributes to the literature in several ways. Firstly, it extends the research on audit quality effect on FSM by considering a comprehensive set of audit quality measures. Unlike prior research, I built composite variables to account for the relationships between individual proxies using principal component analysis (PCA). My results identify two composite audit quality variables: competence and independence. While competence does not reveal any association with FSM, independence is associated with larger absolute discretionary accruals driven by larger income-decreasing accruals. A second contribution of the study is its addition to the literature by considering the moderating effect of tone at the top on the relationship between audit quality and FSM. Bicudo de Castro et al. (2019) note that the impact of tone on auditor risk assessments requires further exploration, while Makhlouf et al. (2021) call for including moderator variables within studies. My results indicate that the interaction between an autocratic tone and auditor competence is negatively associated with fraud. However, this interaction is associated with more income-increasing discretionary accruals. Finally, the study corroborates prior literature by showing that tone at the top improves the ability to explain financial statement manipulation.

The remainder of this study is arranged as follows. The next section presents the literature review. Herein, I define FSM before reviewing the prior evidence around the audit quality proxies. Following this, I explain the research methodology, present the results and draw conclusions.

2. LITERATURE REVIEW

2.1. Defining Financial Statement Manipulation

Financial statement fraud is "a deliberate attempt by corporations to deceive or mislead users of published financial statements, especially investors and creditors, by preparing and disseminating materially misstated financial statements" (Rezaee, 2005, p. 279). Financial statement fraud violates acceptable accounting frameworks (Dechow and Skinner, 2000). Earnings management occurs when management uses the flexibility allowed within the accounting frameworks to mislead financial statement users (Dechow and Skinner, 2000). Thus, both financial statement fraud and earnings management are intended to deceive the user, but fraud violates the accounting frameworks while earnings management does not. I broadly define FSM to incorporate both concepts.

2.2. Agency Theory and Audit Quality

The separation of ownership and control creates an agency relationship between the shareholder and management (Jensen and Meckling, 1976). This relationship creates information asymmetries, allowing management to act in their own best interests (Makhlouf et al., 2021). Consequently, agency costs are incurred to align management and shareholder interests. Credible financial statements reduce information asymmetry, allowing shareholders to monitor management (DeFond and Zhang, 2014). However, they require independent assurance of these financial statements, generally provided by external auditors (Mukhlasin, 2018). A high-quality audit, therefore, mitigates opportunistic FSM (Lin and Hwang, 2010). The provision of a high-quality audit depends on two key auditor attributes discussed below: competence and independence (Harber and Marx, 2020). Given the large volume of literature, for brevity, I focus only on selected studies.

2.2.1. Auditor competence

Auditor competence reflects the auditor's ability to detect FSM. As such, I hypothesise that:

H_1: Greater auditor competence is associated with lower FSM.

Auditor competence is proxied using auditor type, industry specialisation and joint auditors. Auditor type is commonly proxied by Big N membership (DeFond and Zhang, 2014). The Big N companies, namely Deloitte, EY, KPMG and PWC, are larger in size and face greater litigation risk. Consequently, they attract greater accounting expertise, have greater exposure to different industries, offer better training and have more resources to monitor audit quality, resulting in higher-quality audits (Baatwah et al., 2018). The empirical evidence, however, is mixed. In line with expectations, Mokoaleli-Mokoteli and Iatridis (2017) and Makhlouf et al. (2021) found that auditor type was associated with lower FSM. However, studies conducted in countries with lower investor protection found that auditor type was associated with higher FSM (such as Baatwah et al., 2018; and Bala et al., 2019), while others found no association between auditor type and FSM (Magnis and Iatridis, 2017; Selahudin et al., 2018; Sellami and Slimi, 2016; Yasser and Soliman, 2018).

Industry specialists have greater knowledge of a particular industry and its accounting practices (Baatwah et al., 2018) and have more reputational capital at stake. Therefore, they should provide higher-quality audits (DeFond and Zhang, 2014). While the empirical evidence is mixed, it favours industry specialisation being associated with lower FSM levels (Balsam et al., 2003; Inaam and Khamoussi, 2016; Krishnan, 2003; Mukhlasin, 2018). However, other studies find no such relationship (Yasser and Soliman, 2018), or that industry specialisation results in more FSM (Baatwah et al., 2018).

Finally, joint auditors offer reciprocal checks on each other's diligence, improving competence (Piot and Janin, 2005). Collusion between the auditor and management is also less likely to occur, increasing independence (Marmousez, 2009). Few studies consider joint audits due to their rarity in practice. Marmousez (2009) found that, in France, joint auditors increased FSM. She attributed this to one auditor's over-reliance on the other's work, thus reducing effort. Alternatively, Bisogno and De Luca (2016) and Zerni et al. (2012) found that Italian and Swedish companies that voluntarily engaged joint auditors had less FSM.

2.2.2. Auditor independence

Auditor independence relates to reporting FSM. Consequently, I hypothesise that:

H_2: Greater auditor independence is associated with lower FSM.

Common proxies for auditor independence include auditor size, auditor tenure and the provision of non-audit services. Joint auditors, discussed earlier, also enhance the auditor's independence.

Auditor size, like auditor type, is proxied as Big N membership. Big N firms have a larger customer base and more financial resources, resulting in lower dependence on one client than smaller firms. As discussed under auditor type, the empirical evidence on auditor size is mixed. The literature does not attempt to disentangle the Big N effects between competence and independence (DeFond and Zhang, 2014).

Audit tenure has become increasingly topical, with several countries introducing mandatory audit firm rotation. One argument is that longer audit tenure increases familiarity with the client, reducing independence (Harber and Marx, 2020). Alternatively, longer audit tenure improves client knowledge, increasing audit quality (Nugrahanti and Puspitasari, 2018). The empirical evidence on tenure is mixed. Al-Thuneibat et al. (2011) found that longer tenure resulted in higher FSM levels. Conversely, El Guindy and Basuony (2018) and Mukhlasin (2018) found that longer tenure reduced FSM. Finally, Özcan (2019) and Nugrahanti and Puspitasari (2018) found no association between audit tenure and FSM levels.

Non-audit services threaten independence in two ways. In the first, the auditor may end up making decisions for the client. In the second, the auditor may become financially dependent on the client (DeFond and Zhang, 2014). Conversely, non-audit services provide the auditor with greater insight into the client's operations, allowing for higher-quality audits (DeFond and Zhang, 2014). Hohenfels and Quick (2020) found that non-audit services increased FSM levels, whereas Svanström (2013) found that non-audit services reduced the extent of FSM. It may be that different non-audit services affect the FSM level differently. In further analysis, Hohenfels and Quick (2020) found that other assurance and consultancy services increased FSM, while tax services had no effect.

2.3. Tone at the Top, Audit Quality and Financial Statement Manipulation

Tone at the top is the ethical culture a company's top management creates through their language and actions. It forms the foundation of a company's internal control system (Schmidt, 2014) and influences employees' ethical behaviour (Noviyanti and Winata, 2015). Tone at the top is apparent in top management language, as it enables them to create a company's identity and manage others' expectations (Patelli and Pedrini, 2015). Consequently, tone at the top may be conveyed through the CEO and chairperson's letters in the financial statements, financial press appearances, and other similar sources (Amernic et al., 2010). Thus, linguistic analysis of these communication types provides insight into a company's tone at the top.

Amernic et al. (2010) investigated linguistic analysis in measuring the tone at the top. Given the severity of recent corporate frauds, they noted that a more holistic approach to understanding financial information is necessary, with a greater appreciation of top management narratives. Following this, increased attention has been given to the linguistic analysis of top management narratives and their relationship to FSM.

Early studies relied on human coders to perform linguistic analysis. While this has greater precision, it is hampered by smaller samples and low replicability (Li, 2010). Technological advances have enabled automated approaches. These can be either

statistical (such as Naïve Bayesian algorithms used by Li, 2010) or dictionary-based. Initially, the statistical approach was superior, as no dictionary was explicitly developed for the corporate setting (Li, 2010). Since then, however, domain-specific wordlists (such as Henry, 2008; Loughran and McDonald, 2011) have been developed and successfully used along with general wordlists such as Harvard General Inquirer (GI), Linguistic Inquiry and Word Count (LIWC) and DICTION. Consequently, the dictionary approach has gained favour.

Hope and Wang (2018) and Larcker and Zakolyukina (2012) applied the LIWC dictionary in the US context. The DICTION software was used in Australia by Alshorman (2016) and in the US by Patelli and Pedrini (2015). Abou-El-Sood and El-Sayed (2022) applied Henry's (2008) wordlist in the Middle East and North Africa region. Finally, Huang et al. (2018) and Kayed and Meqbal (2024) applied the Loughran and McDonald (2011) wordlist to companies in the US, UK and US-listed Chinese companies, respectively. All these studies found that linguistic analysis of top management narratives provided incremental value in identifying FSM.

Most linguistic analysis studies have been performed in developed economies (Bicudo de Castro et al., 2019). In South Africa, linguistic analysis usage is limited, focusing on analyst stock recommendations (Caglio et al., 2020), integrated reporting (Mokoaleli-Mokoteli et al., 2009) and impressions management (Nel et al., 2022; Totowa and Mokoaleli-Mokoteli, 2021) rather than FSM. Thus, there is a gap in South African literature. Based on the international findings, I draw the following non-directional hypothesis:

H_3: Tone at the top is associated with FSM.

Given their position within a company, top management has an information advantage over a company's external stakeholders. Top management, therefore, has the power to determine what information is shared, how it is shared and when it is shared (Zengin-Karaibrahimoglu et al., 2021), consequently they may manipulate the evidence provided to the external auditor (Greiner et al., 2020). This may be achieved by using narratives to justify manipulated numbers and mitigate concerns (Abou-El-Sood and El-Sayed, 2022). To address this risk, the auditor must evaluate a company's tone at the top (International Auditing and Assurance Standards Board, 2019). Prior studies by Greiner et al. (2020), Rose et al. (2021) and Zengin-Karaibrahimoglu et al. (2021) have shown that auditors adjust their risk assessment to account for inappropriate tone in US and Dutch companies. However, internationally, there remains a gap considering how tone at the top moderates the external auditors ability to restrain FSM. Thus, I draw the following non-directional hypothesis:

H_4: Tone at the top moderates the relationship between audit quality and FSM.

3. METHODOLOGY

3.1. Sample

The initial sample comprised all 278 non-financial companies listed on the Johannesburg Stock Exchange between 2011 and 2018, representing 1673 firm years. Financial companies were excluded due to different regulations impacting that industry (Makhlouf et al., 2021). The 2011 year represents the 1st year that King III was effective in South Africa, ensuring adequate disclosure. The sample ended in 2018 to ensure sufficient time for regulators to identify and publish enforcement actions against fraudulent companies. Karpoff et al. (2017) noted the median time from fraud to first enforcement account in the US was 2.41 years. Given that regulators in developing economies are not as advanced and well-resourced as their developed country counterparts (Rabin, 2016), 5 years (2019 to 2023) was deemed acceptable. This, however, is shorter than the period that Steinhoff and Tongaat-Hulett (two companies found guilty of FSM in South Africa) were identified as having committed FSM before they were discovered, being nine and 8 years, respectively.

I removed 52 firm years due to year-end changes and a further 488 firm years that did not contain separate CEO statements. Not all companies disclosed the required auditor data; consequently, I removed 279 firm years with missing data. Finally, 25 firm years were removed for companies with only one observation. A final sample of 829 firm years, representing 151 unique companies, remained. Table 1 presents a breakdown of the sample by industry.

3.2. Measuring Financial Statement Manipulation

DeFond and Zhang (2014) recommend using multiple measures of FSM. Therefore, I used two measures: fraud and discretionary accruals. In South Africa, two bodies investigate financial non-compliance. Thus, I identified fraud as companies found guilty through an applicable Financial Sector Conduct Authority (FSCA) enforcement action or forced Financial Reporting Investigation Panel (FRIP) restatement. In addition, I included qualified audit opinions[1] within the fraud sample. Fraud is then measured as a dummy variable assigned the value of one if the company was guilty and zero otherwise (Marais et al., 2023).

I measured discretionary accruals using Kothari et al.'s (2005) cross-sectional, performance-adjusted model as defined in equation (1). This model improves upon the modified Jones model by including a performance and constant term, increasing the model power and reducing misspecification (Kothari et al., 2005).

$$\frac{TAC_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1\left(\frac{1}{TA_{it-1}}\right) + \alpha_2\left(\frac{\Delta\text{SALES}_{it} - \Delta REC_{it}}{TA_{it-1}}\right) + \alpha_3\left(\frac{PPE_{it}}{TA_{it-1}}\right) + \alpha_4 ROA_{it} + \Delta_{i,t} \quad (1)$$

Where TAC_{it} represents total accruals for company i in year t, TA represents total assets, $\Delta SALES$ is the change in sales, and ΔREC is the change in receivables, PPE is the gross book

1 I only included qualified audit opinions relating to fraud or an IFRS violation. Qualifications based on issues such as going concern were not included within the fraud sample.

Table 1: Sample by industry

Industry	Number of companies	Number of firm years
Basic material	43	246
Consumer goods	18	93
Consumer services	27	154
Healthcare	6	34
Industrials	45	233
Oil and gas	2	9
Technology	10	43
Telecommunications	3	17
Total	154[1]	829

[1]The number of companies per industry (154) exceeds the number of unique companies in the sample (151). During the period, three companies changed industry classifications and have been included in both industries. However, the number of firm years only represents the years the three companies spent in each sector. (Source: Researcher's own construction)

value of property, plant and equipment, and *ROA* is the return on assets. Discretionary accruals are measured as the residual in the equation, represented by the error term Ɛ. Discretionary accruals are calculated by performing separate regressions for each industry with more than ten observations in a financial year (Kothari et al., 2005). As a result, I excluded the healthc=are, oil and gas, telecommunications and some years of the technology industry from these calculations. Consistent with Singh et al. (2019), I measured the magnitude of the discretionary accruals as the absolute value. I further partitioned the discretionary accruals into income-increasing and income-decreasing discretionary accruals.

3.3. Measuring Audit Quality

The prior literature uses a range of variables to measure the competence and independence attributes of audit quality. The proxies for auditor competence included in this study are auditor type, industry specialisation and joint auditors. Auditor type (*AUDTYPE*) is a dummy variable assigned the value of one if the auditor is a Big N auditor and zero otherwise (Baatwah et al., 2018). I measured industry specialisation (*AUDSPEC*) as the auditor's market share (based on the number of clients) in each industry (Balsam et al., 2003; Chin and Chi, 2009). Finally, joint auditors (*AUDJOINT*) is a dummy variable assigned the value of one if joint auditors audit the company and zero otherwise (Bisogno and De Luca, 2016).

I proxied auditor independence using auditor size, audit tenure and non-audit services. Like auditor type, auditor size is proxied by Big N membership. Audit tenure (*AUDTEN*) is the number of consecutive years a company is audited by the same auditor (Hohenfels, 2016). I measured audit fees (*AUDFEES*) as the ratio of audit service fees to total auditor fees (Hohenfels and Quick, 2020).

3.4. Measuring Tone at the Top

I measured tone at the top by extracting CEO statements from the company integrated reports. Although such CEO statements are carefully planned and not always directly written by the CEO, they are heavily involved in the process (Craig and Amernic, 2018). In South Africa, alternatives such as earnings conference calls are not available.

Following Patelli and Pedrini (2015), I applied a dictionary approach when analysing CEO statements. Although domain-specific wordlists are considered superior when analysing financial documents (Loughran and McDonald, 2011), they tend to identify only positive, negative or modal words, making them ill-suited to measuring tone at the top. Therefore, I used DICTION to measure tone at the top, consistent with Patelli and Pedrini (2015) and Totowa and Mokoaleli-Mokoteli (2021).

I used DICTION's five themes of activity, certainty, commonality, optimism and realism. Activity (*TONEACT*) refers to movement, change and avoiding inertia (Hart and Carroll, 2015). An active tone emphasises accomplishments, overconfidence and risk-taking (Greiner et al., 2020) and undermines credibility (Patelli and Pedrini, 2015). Certainty (*TONECER*) indicates determination, rigidity, completeness and authoritative speech (Hart and Carroll, 2015). It is a trait of transactional leaders (Patelli and Pedrini, 2015) and undermines verifiability and credibility (Greiner et al., 2020). Commonality (*TONECOM*) relates to group engagement and cooperation (Greiner et al., 2020). It creates a sense of community but may undermine independence (Alshorman, 2016). Optimism (*TONEOPT*) highlights the positive attributes of a person or group (Hart and Carroll, 2015). An optimistic tone tends to obscure failure while emphasising success (Griener et al., 2020) and represents a form of impression management, reducing the quality of financial reporting (Alshorman, 2016; Patelli and Pedrini, 2015). An overly optimistic tone may portray the CEO as naïve (Wunderley et al., 1998). Finally, realism (*TONEREAL*) represents language dealing with real, day-to-day issues (Hart and Carroll, 2015). Increased realism is associated with greater transparency (Patelli and Pedrini, 2015), but is also a characteristic of a pragmatic leader (Alshorman, 2016). A pragmatic leader may be willing to manipulate financial statements to achieve an efficient outcome (Alshorman, 2016).

3.5. Developing Composite Variables for Audit Quality and Tone at the Top

Using individual variables to proxy for audit quality and tone at the top does not capture the orthogonal relationships between the variables (Tarchouna et al., 2017). I used PCA to create composite variables to address this. In addition, PCA reduces measurement error and potential multicollinearity, resulting in the composite variables having a greater impact than the individual variables (Biswas et al., 2022).

I retained audit quality and tone at the top components with eigenvalues greater than one (Larcker et al., 2007). After performing a varimax rotation, I used variables with absolute loading factors exceeding 0.40 to describe the component (Larcker et al., 2007). Finally, Bartlett's sphericity and the Kaiser-Meyer-Olkin test were used to determine the data's sufficiency for PCA (Biswas et al., 2022).

Table 2 presents the development of the PCA components. I retained two components for both audit quality and tone at the top. For audit quality (panel A), the first component comprises auditor type, auditor specialisation and joint auditors. I label this component as *COMPETENCE*. A Big N auditor (*AUDTYPE*)

Table 2: Development of audit quality and tone at the top principal component analysis components

Variable	Component 1; competence	Component 2; independence
Panel A: Audit quality		
AUDTYPE	0.4385	0.4243
AUDSPEC	0.6825	
AUDTEN		0.5997
AUDFEES		−0.6086
AUDJOINT	0.5808	
Variable	**Component 1; autocratic tone**	**Component 2; pragmatic tone**
Panel B: Tone at the top		
TONEACT	0.4571	
TONECER	0.6310	
TONECOM		−0.4913
TONEOPT	−0.4835	0.4676
TONEREAL		0.7111

Components were determined using PCA with varimax rotation. Only components with eigenvalues greater than one were retained. The table reports loadings that exceeded 0.4. Statistics for the sufficiency of the audit quality and tone at the top data for PCA included the Bartlett test of sphericity of 284.152 (P<0.01) and 235.405 (P<0.01), respectively, as well as the Kaiser-Meyer-Olkin measure of sampling adequacy of 0.536 and 0.543, respectively. This indicated sufficiency to conduct PCA (Biswas et al., 2022). A rho of 0.5427 was obtained for audit quality while a rho of 0.5468 was obtained for tone at the top. (Source: Researcher's own construction). PCA: Principal component analysis

attracts better expertise and has access to more resources, resulting in greater competence. A specialist auditor has greater knowledge of the company's industry, while joint auditors may bring more resources. The second component consists of auditor type, audit tenure and audit fees. I label this component as *INDEPENDENCE*[2]. A longer audit tenure creates greater familiarity with management. Audit fees load negatively into this component. A lower proportion of non-audit services creates less financial dependence on the client. Auditor type also features in component 2 because Big N auditors are expected to be more independent due to greater reputational capital and a lower likelihood of financial dependence on clients. However, the positive loading appears to indicate lower independence. This anomaly may arise because the prior literature fails to distinguish between the competence and independence aspects of Big N auditors (DeFond and Zhang, 2014). Consequently, this conundrum needs to be resolved through further research.

Table 2 Panel B presents the tone at the top components. Component 1 comprises activity, certainty and optimism. This grouping is consistent with prior studies by Cho et al. (2010) and Totowa and Mokoaleli-Mokoteli (2021), who found that these tones were indicators of impression management. The negative loading of optimism is consistent with Cho et al. (2010), who found that optimism and certainty had opposite loadings, and optimism made a CEO look naïve (Wunderley et al., 1998). Such tones are associated with confidence and authority, so I label component 1 as *AUTOCRATIC TONE*. Component 2 comprises commonality, optimism and realism. Commonality loads negatively into the component, indicating that the component focuses on greater diversity (Hart and Carroll, 2015). Given South Africa's history, a realistic leader is more likely to accommodate diversity, as it features highly in South Africa's governance codes (Institute of Directors in Southern Africa, 2016). Realism speaks to day-to-day issues, transparency and pragmatic leadership, while optimism's inclusion may indicate motivational leadership. Consequently, I label component 2 as a *PRAGMATIC TONE*.

3.6. Control Variables

I included various control variables from the literature which affect FSM. I measured audit committee independence (*ACIND*) as the proportion of independent directors on the audit committee (Bicudo de Castro et al., 2019). I included operating cash flows to total assets (*OPCASH*) (Sellami and Slimi, 2016) and a dummy variable assigned the value of one if the company experienced negative earnings in the current year and zero otherwise (*LOSS*) (Nugrahanti and Puspitasari, 2018). I measured leverage (*LEVER*) as debt to total assets (Singh et al., 2019), while firm size was calculated as the natural log of market capitalisation (*SIZE*) (Sun et al., 2014). Growth opportunities (*GROWTH*) were measured as the market-to-book ratio (Singh et al., 2019), and, finally, I included a dummy variable assigned the value of one if the company had joint CEOs and zero otherwise (*JOINTCEO*).

3.7. Regression Models

I used the following pooled logit and panel regression models[3] to test the relationship between audit quality, tone at the top and FSM:

$$FSM_{it} = \beta_0 + \beta_1 AUDPCA_{it} + \beta_2 TONEPCA_{it} + \beta_3 ACIND_{it} + \beta_4 OPCASH_{it} + \beta_5 LOSS_{it} + \beta_6 LEVER_{it} + \beta_7 SIZE_{it} + \beta_8 GROWTH_{it} + \beta_9 JOINTCEO_{it} + \varepsilon_{it} \quad (2)$$

Where *AUDPCA* and *TONEPCA* represent the vector of composite variables developed during the PCA, and all other variables are defined above.

I used the following model to test the moderating effect of tone at the top on the relationship between audit quality and FSM:

$$FSM_{it} = \beta_0 + \beta_1 AUDPCA_{it} + \beta_2 TONEPCA_{it} + \beta_3 AUDPCA_{it} \times TONEPCA_{it} + \beta_4 ACIND_{it} + \beta_5 OPCASH_{it} + \beta_6 LOSS_{it} + \beta_7 LEVER_{it} + \beta_8 SIZE_{it} + \beta_9 GROWTH_{it} + \beta_{10} JOINTCEO_{it} + \varepsilon_{it} \quad (3)$$

All continuous variables were winsorised at the first and ninety-ninth percentiles to address extreme outliers. I used cluster robust standard errors to address heteroskedasticity and autocorrelation (Hoechle, 2007).

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 3 presents the descriptive statistics. For brevity, I focus on the main variables used in this study (i.e. FSM, audit quality and

2 In component 2, longer audit tenure loaded positively, while higher audit fees (i.e. lower non-audit fees) loaded negatively. Hence, this component represented less independence. Consequently, component 2 was multiplied by negative one to represent independence.

3 The pooled logit model was used for the fraud measure of audit quality. Due to the lack of variability in the dependent variables within and across firms, panel logit was not feasible. The Hausman test was used to determine the appropriateness of fixed or random effects for discretionary accruals.

Table 3: Descriptive statistics

Variable	Observations	Mean	Median	SD	Minimum	Maximum
Financial statement manipulation variables						
Fraud	829	0.0193	0.0000	0.1377	0.0000	1.0000
Absolute discretionary accruals	750[1]	0.0539	0.0366	0.0628	0.0000	0.7270
Income-increasing discretionary accruals	367	0.0543	0.0401	0.0648	0.0000	0.7270
Income-decreasing discretionary accruals	383	0.0534	0.0352	0.0609	0.0001	0.4752
Audit quality variables						
AUDTYPE	829	0.8770	1.0000	0.3287	0.0000	1.0000
AUDSPEC	829	0.2390	0.2308	0.1275	0.0149	0.7500
AUDTEN	829	22.7214	14.0000	23.1444	1.0000	103.0000
AUDFEES	829	0.8720	0.9021	0.1281	0.1954	1.0000
AUDJOINT	829	0.0133	0.0000	0.1145	0.0000	1.0000
Tone at the top variables						
Activity (TONEACT)	829	49.5399	49.66	1.9873	38.65	61.90
Certainty (TONECER)	829	46.6869	47.55	4.7665	-6.68	63.38
Commonality (TONECOM)	829	49.2946	49.40	1.9990	34.34	61.87
Optimism (TONEOPT)	829	54.8771	54.61	3.3524	45.01	69.84
Realism (TONEREAL)	829	52.3092	52.35	2.9279	41.64	85.51
Control variables						
ACIND	829	0.9547	1.0000	0.1520	0.0000	1.0000
OPCASH	829	0.0864	0.0857	0.1016	-0.6622	0.7410
LOSS	829	0.1737	0.0000	0.3791	0.0000	1.0000
Leverage (LEVER)	829	0.4813	0.4750	0.1686	0.0286	1.1653
Firm size (SIZE)	829	15.6949	15.8041	2.1915	10.2753	21.4349
Growth (GROWTH)	829	1.0867	0.7377	1.0581	0.0234	8.3679
JOINTCEO	829	0.0205	0.0000	0.1418	0.0000	1.0000

[1]The number of observations for the absolute discretionary accruals is less than the actual sample as the healthcare, oil and gas, technology, and telecommunications industries had fewer than the prerequisite ten observations per industry-year combination (Kothari et al., 2005). Consequently, I excluded 79 firm-year observations.(Source: Researcher's own construction). AUDTYPE: Auditor type, AUDSPEC: Audit specialization, JOINTCEO: Joint CEOs, AUDTEN: Audit tenure, AUDFEES: Audit fees ratio, AUDJOINT: Joint auditors, ACIND: Audit committee independence, OPCASH: Operating cash flows, LOSS: Negative earnings, SD: Standard deviation

tone at the top). I found that 1.93% of observations were fraudulent. Although this is higher than the 0.98% identified by Marais et al. (2023), the current sample covers a shorter period in which more corporate scandals were identified. Absolute discretionary accruals amount to 5.39% of total assets. Income-increasing discretionary accruals are 5.43% of total assets, which is similar in value to the income-decreasing discretionary accruals of 5.34%. This closeness of value aligns with the reversing nature of accruals. Concernedly, the highest income-increasing discretionary accruals were reported at 72.7% of total assets (slightly lower than the 76.7% reported by Eloff and Steenkamp (2022) in South Africa over a similar period), while the maximum income-decreasing is only 47.52%.

Considering the audit quality variables, 87.7% of firm-year observations were audited by big-4 companies. This exceeds the concentration Wesson (2021) reported from 2010 to 2018, which ranged from 62.66% to 70.04%. My study excludes financial companies, while Wesson (2021) excludes non-South African engagement partners and joint auditors. Moreover, this study excludes companies with missing data. Had such companies been included, the proportion of observations audited by the big-4 would decrease to 76.45%, indicating that non-big-4 auditors are less likely to disclose all auditor information. Audit tenure indicates a mean of 22.72 years. This is longer than the 17 to 17.6 years reported by Wesson (2021). However, Wesson (2021) only reports audit tenure from 2016 until 2018. I found that 1.33% of companies have joint auditors, slightly more than the 0.98% of companies reported by Wesson (2021). Her proportion is based on the number of companies, while mine is based on firm-year observations. The auditor specialisation mean is 23.9%. This means that, on average, each company's auditor audited 23.9% of the companies in the related industry. Audit fees average 87.2% of total fees, leaving, on average, 12.8% for non-audit fees. This finding aligns with South African regulations that do not prohibit all non-audit services.

For the tone at the top variables, certainty has the lowest mean of 46.69, while optimism has the highest of 54.88. The means of activity, certainty and commonality all fall within the normal ranges provided by DICTION. The means of optimism and realism exceed the DICTION ranges, indicating that South African CEO statements are more optimistic and realistic than the Fortune 500 companies used to develop the DICTION ranges. However, given their different context, Fortune 500 companies may not be comparable to JSE-listed companies. Few South African studies have used linguistic analysis, DICTION in particular. Despite this, the means of activity, optimism and certainty are comparable to those obtained by Totowa and Mokoaleli-Mokoteli (2021), while the mean for commonality aligns with that obtained by Nel et al. (2022). Of the South African studies identified as using DICTION, only Nel et al. (2022) reported a score for realism. While their score was lower than the current study, it may have been driven by a smaller sample size and shorter study period.

4.2. Audit Quality and Tone at the Top Results

Table 4 presents the regression results for audit quality and tone at the top. All models have significant explanatory power for FSM. Auditor competence reveals no relationship with the fraud or discretionary accrual measures of FSM. While contrary to the theoretical expectations, this aligns with studies by Magnis and

Table 4: Regression estimates of audit quality and tone at the top

Variable	(1)	(2)	(3)	(4)
	Fraud[1]	Absolute discretionary accruals[2]	Income-increasing discretionary accruals[3]	Income-decreasing discretionary accruals[2]
Auditor competence	−0.4045 (0.5782)	0.0059 (0.0036)	0.0007 (0.0038)	0.0057 (0.0042)
Auditor independence	0.3620 (0.4364)	0.0111** (0.0050)	−0.0033 (0.0027)	0.0203** (0.0079)
Autocratic tone	−0.1079 (0.1730)	0.0024 (0.0016)	−0.0003 (0.0016)	0.0033 (0.0025)
Pragmatic tone	−0.1970 (0.2006)	−0.0016 (0.0020)	0.0016 (0.0022)	−0.0047* (0.0028)
ACIND[4]		−0.0093 (0.0179)	0.0294* (0.0167)	−0.0158 (0.0178)
OPCASH	−6.9934** (2.9876)	0.0593* (0.0337)	−0.1682*** (0.0558)	0.2171*** (0.0527)
LOSS	−1.9396 (1.2533)	0.0169** (0.0067)	−0.0011 (0.0078)	0.0222** (0.0107)
LEVER	2.0397** (0.9960)	0.0354 (0.0266)	−0.0205 (0.0192)	0.0561* (0.0329)
SIZE	0.3426* (0.1997)	−0.0065 (0.0054)	−0.0017 (0.0015)	−0.0180*** (0.0069)
GROWTH	−1.0992 (0.7424)	0.0015 (0.0041)	0.0011 (0.0029)	0.0008 (0.0063)
JOINTCEO[5]		0.0003 (0.0108)	0.0032 (0.0065)	
Constant	−9.0363*** (2.7141)	0.1350* (0.0796)	0.0703*** (0.0268)	0.2947*** (0.1012)
Observations	829	750	367	383
Number of companies	151	141	132	128
χ^2	69.67***		27.70***	
F		2.377***		5.457***
Pseudo R^2	0.139			
R^2		0.3657		0.5197
Adjusted R^2		0.2055		0.2510
Between R^2			0.127	

***P<0.01, **P<0.05, *P<0.1, [1]Pooled logit regression with clustered standard errors was applied as the dependent variable was binary, [2]A fixed effects panel regression model was applied based on the outcome of the Hausman test, [3]A random effects panel regression model was applied based on the Hausman test outcome, [4]ACIND was excluded from the fraud regression due to perfect prediction, [5]JOINTCEO was excluded from the fraud regression due to perfect prediction. It was excluded from the income-decreasing discretionary accruals because it was non-zero for only one cluster, Cluster robust standard errors are presented in parenthesis to address heteroskedasticity and autocorrelation. Based on the correlation matrix, I identified no issues with multicollinearity. (Source: Researcher's own construction)

Iatridis (2017), Sellami and Slimi (2016) and Yasser and Soliman (2018), who found that the underlying variables of auditor competence are unrelated to FSM. Thus, I found no support for H_1, that greater auditor competence is associated with lower FSM levels.

Auditor independence also reveals no statistically significant relationship with fraud. However, a positive association ($P < 0.05$) was found with absolute discretionary accruals. This appears to be driven by independence's association with higher levels of income-decreasing discretionary accruals ($P < 0.05$). To protect their independence, auditors may favour management decisions which decrease earnings (Bédard et al., 2004). Thus, I found no support for H_2 that greater auditor independence is associated with lower FSM levels. Instead, the evidence supports that independence is associated with higher income-decreasing discretionary accruals.

The autocratic tone shows no association with any measure of FSM. This is contrary to the majority of studies, which found that tone at the top provided incremental value in detecting FSM (Hope and Wang, 2018; Kayed and Meqbal, 2024; Patelli and Pedrini, 2015). This contrary finding may result from most studies considering individual tone variables, ignoring the relationships between such tones. Of the DICTION-specific studies, Alshorman (2016) found that activity, certainty and optimism are all positively associated with FSM, while Patelli and Pedrini (2015) only found certainty positively associated with FSM. I note that optimism loaded negatively in the PCA while activity and certainty loaded positively, indicating a potential offsetting of effects which was not considered by prior studies. In untabulated results considering the individual variables, I found that activity, certainty and optimism display no relationship with discretionary accruals. However, certainty and optimism have positive, significant associations with fraud (at the 1% and 5% levels, respectively). As these load in opposite directions in the PCA, this confirms that their effects offset, resulting in the composite autocratic tone variable revealing no relationship with fraud.

The pragmatic tone also shows no relationship with fraud. However, a negative association with income-decreasing discretionary accruals was identified, indicating that the pragmatic tone is associated with lower discretionary accruals. Alshorman (2016) found that only optimism is positively associated with FSM, while commonality and realism are not. Alternatively, Patelli and Pedrini (2015) found that commonality and realism are negatively associated with FSM. Untabulated results show no significant relationship between the individual variables with discretionary accruals. However, realism shows a negative association with fraud, while optimism shows a positive relationship. As these loaded in the same direction in the PCA, their effects would offset.

Generally, the tone at the top variables show no relationship with FSM. Thus, these results predominantly do not support H_3, that there is a relationship between tone at the top and FSM. An exception is that a pragmatic tone is associated with lower income-decreasing discretionary accruals. The findings for H_1 to H_3 are robust for different panel regression models.

Finally, I consider the control variables. Audit committee independence shows no relationship with absolute discretionary accruals and income-decreasing discretionary accruals. However, a positive relationship ($P < 0.1$) exists with income-increasing

discretionary accruals. This positive relationship may result from information disadvantages due to the audit committee's independence from the company (Chen et al., 2020). Operating cash shows statistically negative relationships with fraud and income-increasing discretionary accruals and statistically significant positive associations with absolute and income-decreasing discretionary accruals. Although the discretionary accruals appear to have different signs, the overall indication is that higher operating cash is associated with downward earnings management (either through lower income-increasing or higher income-decreasing discretionary accruals). These findings contradict Sellami and Slimi (2016), who found no relationship. Companies incurring losses are associated with larger absolute discretionary accruals, driven by higher income-decreasing discretionary accrual levels. Companies experiencing losses may take big baths by managing their earnings downwards to reflect improved performance in future years (Jordan and Clark, 2004). Higher leverage is an alternative monitoring mechanism (Sellami and Slimi, 2016). Surprisingly, I found that higher leverage is positively associated with fraud. Liu et al. (2010) found that companies issuing new debt manage earnings upwards to achieve lower borrowing costs. Companies with higher debt levels may commit fraud for similar gains and to ensure covenants are met. Higher leverage is also positively associated with greater income-decreasing discretionary accruals levels. Companies with more debt may act more conservatively to avoid the attention of debt holders. Firm size is positively associated with fraud. I also found a statistically significant negative relationship between size and income-decreasing accruals, indicating that larger firms are less likely to manage earnings downwards. Growth opportunities reveal no significant association with any measure of FSM, consistent with Sellami and Slimi (2016). Finally, the presence of joint CEOs also indicates no relationships.

4.3. The Moderating effect of Tone at the Top on Audit Quality

Table 5 presents the regression results that include the interaction between audit quality and tone at the top. The significance of the individual audit quality and tone at the top variables remain unchanged from Table 4, except for auditor competence. Competence now shows a statistically significant positive relationship with absolute discretionary accruals, indicating that the standalone auditor competence is associated with higher discretionary accruals when the interaction terms are included. Although the income-increasing and decreasing components do not reveal significant relationships, the direction of the coefficient signs (negative for income-increasing and positive for income-decreasing) may suggest the companies audited by more competent auditors manage their earnings downwards. There are three changes in the control variable results. Audit committee independence no longer shows a significant relationship with income-increasing discretionary accruals, while operating cash no

Table 5: Regression estimates of the moderating effect of tone at the top on audit quality

Variable	(1)	(2)	(3)	(4)
	Fraud[1]	Absolute discretionary accruals[2]	Income-increasing discretionary accruals[3]	Income-decreasing discretionary accruals[2]
Auditor competence	−0.4223 (0.4903)	0.0074** (0.0034)	−0.0010 (0.0036)	0.0058 (0.0040)
Auditor independence	0.4419 (0.4017)	0.0111** (0.0049)	−0.0036 (0.0025)	0.0192** (0.0082)
Autocratic tone	−0.1496 (0.1675)	0.0025 (0.0016)	0.0005 (0.0016)	0.0032 (0.0028)
Pragmatic tone	−0.2122 (0.2476)	−0.0013 (0.0020)	0.0019 (0.0023)	−0.0053* (0.0031)
Interaction of autocratic tone with				
Auditor competence	−0.2487* (0.1366)	0.0039 (0.0027)	0.0077*** (0.0024)	−0.0006 (0.0044)
Auditor independence	0.0816 (0.0849)	0.0014 (0.0018)	−0.0004 (0.0018)	0.0033 (0.0034)
Interaction of pragmatic tone with:				
Auditor competence	0.3641 (0.2673)	−0.0019 (0.0025)	−0.0001 (0.0025)	−0.0041 (0.0040)
Auditor independence	0.0347 (0.0936)	−0.0018 (0.0013)	−0.0015 (0.0018)	0.0017 (0.0020)
ACIND[4]		−0.0062 (0.0183)	0.0246 (0.0160)	−0.0145 (0.0181)
OPCASH	−7.5011** (3.1613)	0.0552 (0.0342)	−0.1632*** (0.0563)	0.2162*** (0.0521)
LOSS	−1.9725* (1.1633)	0.0162** (0.0065)	−0.0018 (0.0081)	0.0207* (0.0106)
LEVER	2.4504** (0.9869)	0.0353 (0.0256)	−0.0243 (0.0188)	0.0644** (0.0323)
SIZE	0.3816* (0.2175)	−0.0059 (0.0053)	−0.0020 (0.0015)	−0.0180** (0.0069)
GROWTH	−1.1686 (0.7821)	0.0013 (0.0041)	0.0003 (0.0028)	0.0007 (0.0066)
JOINTCEO[5]		0.0015 (0.0111)	0.0036 (0.0070)	
Constant	−9.9550*** (3.0565)	0.1238 (0.0786)	0.0829*** (0.0266)	0.2904*** (0.1030)
Observations	829	750	367	383
Number of companies	151	141	132	128
χ^2	90.95***		40.61***	
F		2.386***		4.470***
Pseudo R^2	0.1585			
R^2		0.3720		0.5251
Adjusted R^2		0.2081		0.2473
Between R^2			0.1654	
χ^2 for joint test of tone	18.74***	1.92*	19.31***	1.52

***P<0.01, **P<0.05, *P<0.1. [1]Pooled logit regression with clustered standard errors was applied as the dependent variable was binary, [2]A fixed effects panel regression model was applied based on the outcome of the Hausman test, [3]A random effects panel regression model was applied based on the Hausman test outcome, [4]ACIND was excluded from the fraud regression due to perfect prediction, [5]JOINTCEO was excluded from the fraud regression due to perfect prediction. It was excluded from the income-decreasing discretionary accruals because it was non-zero for only one cluster.Cluster robust standard errors are presented in parenthesis to address heteroskedasticity and autocorrelation. Based on the correlation matrix, I identified no issues with multicollinearity.(Source: Researcher's own construction)

longer reveals a significant relationship with absolute discretionary accruals. These were previously statistically significant, but only at the 10% level. The last change in the control variables is that companies experiencing losses reflect a statistically significant negative relationship with fraud ($P < 0.1$).

The interaction between an autocratic tone and auditor competence indicates a negative association with fraud and a positive relationship with income-increasing discretionary accruals. The components of the autocratic tone (activity, certainty and pessimism) are associated with authority, self-confidence and rigid thinking, which would increase audit risk (Alshorman, 2016; Patelli and Pedrini, 2015). The negative relationship with fraud confirms Zengin-Karaibrahimoglu et al.'s (2021) findings that competent auditors would increase their audit risk assessment, resulting in a commensurate adjustment to audit procedures. This adjustment outweighs the higher risk associated with the autocratic tone, thereby being associated with lower fraud. However, discretionary accruals are discretionary and fall within the bounds of accepted accounting frameworks (Dechow and Skinner, 2000). Therefore, auditors may be less able to challenge or influence management's judgements. An autocratic leader with rigid thinking would be less willing to consider alternatives offered by the auditor.

The remaining interaction between an autocratic tone and independence, as well as a pragmatic tone and both competence and independence, reveal no statistically significant relationships with any measure of FSM. The lack of significant relationships for the remaining interaction terms has several possible explanations. On the one hand, South African auditors may not consider tone at the top as a material risk related to fraud and discretionary accruals and thus do not adjust their risk assessment. This appears to be justified, given the lack of statistically significant relationships found in this study between the tone at the top variables and FSM. Alternatively, auditors may not consider management's overall tone but only focus on certain tone aspects. Such an argument could explain why a relationship is only found with the autocratic tone, as the few prior South African studies using DICTION have focused on the activity, certainty and optimism components while excluding the commonality and realism tones (Caglio et al., 2020; Mokoaleli-Mokoteli et al., 2009; Totowa and Mokoaleli-Mokoteli, 2021). Furthermore, the major domain-specific wordlists for financial language (such as Henry, 2008; Loughran and McDonald, 2011) focus predominantly on the positive-negative tone relationship. Given the extensive research on this positive-negative tone, auditors may concentrate more on it while neglecting other tones. A final explanation may be that auditors do adjust their risk assessments based on the tone at the top (as found by Greiner et al., 2020; Rose et al., 2021; and Zengin-Karaibrahimoglu et al., 2021). This risk adjustment then almost perfectly offsets the risk effects (either positive or negative) of management's tone, resulting in an insignificant relationship to FSM. This explanation is less likely in South Africa, given that the individual tone variables already do not show any significant relationship with the FSM measures.

Consequently, I found only partial support for H_4, that tone at the top moderates the relationship between audit quality and FSM. Specifically, this partial support applies to the interaction between an autocratic tone and auditor competence. This finding for H_4 is robust for different panel regression models. Given the lack of support for H_4, I ran a Chi-squared test of the joint significance of the tone and interaction variables. The findings (presented in Table 5) reveal that the explanatory power of the models (excluding income-decreasing discretionary accruals) is significantly improved by including the tone variables. This confirms the findings of prior studies that inclusion of tone at the top provides incremental value in identifying FSM (Hope and Wang, 2018; Patelli and Pedrini, 2015).

5. CONCLUSION

Given recent corporate scandals in South Africa (such as Steinhoff and Tongaat-Hulett) and the mixed evidence on the auditors' ability to detect and report on FSM, this study aimed to identify the moderating effect that tone at the top has on the relationship between audit quality and FSM. Using a sample of 829 firm-year observations, I used PCA to develop two comprehensive audit quality measures (competence and independence) and two comprehensive tone measures (autocratic and pragmatic). FSM was measured using identified fraud cases and discretionary accruals.

As individual variables, I found that auditor independence results in higher absolute discretionary accruals. This is driven by larger income-decreasing discretionary accruals indicating that firms who use more independent auditors tend to manage their earnings down. Stakeholders should, therefore, be aware that more independent auditors are likely to act more conservatively. Auditor competence failed to reveal any relationship with FSM. Independently, neither the autocratic nor pragmatic tones reveal an association with FSM. Regarding the interactions, an autocratic tone strengthens the negative association between fraud and audit competence, but also results in a more positive relationship between income-increasing discretionary accruals and auditor competence. Thus, stakeholders in a company with an autocratic tone should feel comforted by greater auditor competence, as it is associated with reduced fraud, but they should be aware that management may attempt to push the boundaries of acceptable accounting standards. Other than this, tone at the top was shown to have no moderating effect on the relationship between audit quality and FSM.

This study contributes to the existing literature in several ways. Firstly, it corroborates the critical traits of auditor quality used in the literature: Competence and independence. Using PCA to develop composite measures from an array of observable characteristics allows an understanding of how these characteristics work together and either complement or act as substitutes. Secondly, the study reveals how tone at the top moderates the audit quality. Although three of the four interaction terms show insignificant relationships, the findings still reveal areas where management could push the boundaries with competent auditors to inflate earnings within the scope of acceptable accounting frameworks. Finally, the study confirms the findings of the international literature that accounting for tone improves the ability to explain FSM in South Africa.

To conclude, the study has some limitations. Despite making an interesting contribution to the limited literature on tone at the top in developing countries, this may not be generalisable due to the focus on South Africa. Future studies should consider further research in alternative geographical locations or across country boundaries. Moreover, I only considered fraud and discretionary accruals as measures of FSM. The unbalanced nature of fraud and non-fraud observations may make it difficult to identify predictors of fraud. Discretionary accruals are also only one manner in which management may manipulate earnings. Future research should consider alternative measures of fraud risk, including real-earnings management measures and impression management measures. Another consideration is that tone at the top was measured using an automated bag-of-words approach using a general dictionary on planned CEO statements. While this method has various strengths, it does not consider domain-specific language and the carefully planned nature of CEO statements in the integrated reports. In the future, spontaneous communication methods should be used together with manual analysis of tone or domain-specific wordlists. Finally, audit quality is a complex construct. The observable characteristics used may not present a complete picture. Therefore, future research should identify more nuanced methods to proxy for audit quality.

6. FUNDING

This work was supported by the University of KwaZulu-Natal University Capacity Development Programme.

REFERENCES

Abou-El-Sood, H., El-Sayed, D. (2022), Abnormal disclosure tone, earnings management and earnings quality. Journal of Applied Accounting Research, 23(1), 402-433.

Alshorman, S. (2016), CEO Tone, Earnings Management, and the Moderating Effect of CEO Power. Unpublished PhD thesis, University of South Australia, Australia.

Al-Thuneibat, A.A., Issa, R.T.I., Baker, A.A. (2011), Do audit tenure and firm size contribute to audit quality? Empirical evidence from Jordan. Managerial Auditing Journal, 26(2011), 317-334.

Amernic, J., Craig, R., Tourish, D. (2010), Measuring and Assessing Tone at the Top Using Annual Report CEO Letters. Available from: https://researchportal.port.ac.uk/en/publications/measuring-and-assessing-tone-at-the-top-using-annual-report-ceo-l [Last accessed on 2018 Oct 04].

Baatwah, S.R., Salleh, Z., Ahmad, N. (2018), High-quality auditors vs. high-quality audit: The reality in Oman. Afro-Asian Journal of Finance and Accounting, 8(3), 209-236.

Bala, H., Amran, N.A., Shaari, H. (2020), Audit committee attributes and cosmetic accounting in Nigeria. Managerial Auditing Journal, 35(2), 177-206.

Balsam, S., Krishnan, J., Yang, J.S. (2003), Auditor industry specialisation and earnings quality. Auditing: A Journal of Practice and Theory, 22(2), 71-97.

Bédard, J., Chtourou, S.M., Courteau, L. (2004), The effect of audit committee expertise, independence, and activity on aggressive earnings management. Auditing: A Journal of Practice and Theory, 23(2), 13-35.

Bicudo de Castro, V., Gul, F.A., Muttakin, M.B., Mihret, D.G. (2019), Optimistic tone and audit fees: Some Australian evidence. International Journal of Auditing, 23(2019), 352-364.

Bisogno, M., De Luca, R. (2016), Voluntary joint audit and earnings quality: Evidence from Italian SMEs. International Journal of Business Research & Development, 5(1), 1-22.

Biswas, S., Bhattacharya, M., Sadarangani, P.H., Jin, J.Y. (2022), Corporate governance and earnings management in banks: An empirical evidence from India. Cogent Economics and Finance, 10(1), 1-20.

Caglio, A., Melloni, G., Perego, P. (2020), Informational content and assurance of textual disclosures: Evidence on integrated reporting. European Accounting Review, 29(1), 55-83.

Chen, J.Z., Cussatt, M., Gunny, K.A. (2020), When are outside directors more effective monitors? Evidence from real activities manipulation. Journal of Accounting, Auditing and Finance, 35(1), 26-52.

Chin, C.L., Chi, H.Y. (2009), Reducing restatements with increased industry expertise. Contemporary Accounting Research, 26(3), 729-765.

Cho, C.H., Roberts, R.W., Patten, D.M. (2010), The language of US corporate environmental disclosure. Accounting, Organizations and Society, 35(2010), 431-443.

Craig, R., Amernic, J. (2018), Are there language markers of hubris in CEO letters to shareholders? Journal of Business Ethics, 149(2018), 973-986.

DeAngelo, L.E. (1981), Auditor size and audit quality. Journal of Accounting and Economics, 3(1981), 183-199.

Dechow, P.M., Skinner, D.J. (2000), Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. Accounting Horizons, 14(2), 235-250.

DeFond, M., Zhang, J. (2014), A review of archival auditing research. Journal of Accounting and Economics, 38(2014), 275-326.

El Guindy, M.N., Basuony, M.A.K. (2018), Audit firm tenure and earnings management: The impact of changing accounting standards in UK firms. The Journal of Developing Areas, 52(4), 167-181.

Eloff, A.M., Steenkamp, S. (2022), Integrated report quality and earnings management - Evidence from South Africa, South African Journal of Economic and Management Sciences, 25(1), 1-10.

Garrett, J.B., Hoitash, R., Prawitt, D.F. (2022), Perceptions of tone at the top from the inside: Insights into audit pricing. Auditing: A Journal of Practice and Theory, 41(1), 115-141.

Greiner, A., Patelli, L., Pedrini, M. (2020), Characteristics of managerial tone priced by auditors: Evidence based on annual letters to shareholders of large U.S. firms. Auditing: A Journal of Practice and Theory, 39(2), 139-161.

Harber, M., Marx, B. (2020), Auditor independence and professional scepticism in South Africa: Is regulatory reform needed? South African Journal of Economic and Management Sciences, 23(1), 1-12.

Hart, R.P., Carroll, C.E. (2015), DICTION 7.1 Help Manual. Available from: https://www.dictionsoftware.com/download.php?file=wp-content/uploads/2015/07/DICTION-7.1Manual.pdf [Last accessed on 2018 Nov 26].

Henry, E. (2008), Are investors influenced by how earnings press releases are written? Journal of Business Communication, 45(4), 363-407.

Hoechle, D. (2007), Robust standard errors for panel regressions with cross sectional dependence. The Stata Journal, 7(3), 281-312.

Hohenfels, D. (2016), Audit tenure and perceived earnings quality. International Journal of Auditing, 20(2016), 224-238.

Hohenfels, D., Quick, R. (2020), Non-audit services and audit quality: Evidence from Germany. Review of Managerial Science, 14(2020), 959-1007.

Hope, O.K., Wang, J. (2018), Management deception, big-bath accounting, and information asymmetry: Evidence from linguistic analysis. Accounting, Organizations and Society, 70(2018), 33-51.

Huang, X., Krishnan, S., Lin, P. (2018), Tone analysis and earnings

management. Journal of Accounting and Finance, 18(8), 46-61.
Inaam, Z., Khamoussi, H. (2016), Audit committee effectiveness, audit quality and earnings management: A meta-analysis. International Journal of Law and Management, 58(2), 179-196.
Institute of Directors in Southern Africa. (2016), King IV Report on Governance for South Africa 2016. South Africa, IoDSA.
International Auditing and Assurance Standards Board. (2019), International Standard on Auditing 315: Identifying and Assessing the Risks of Material Misstatement. New York, IAASB.
Jensen, M.C., Meckling, W.H. (1976), Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305-360.
Jordan, C.E., Clark, S.J. (2004), Big bath earnings management: The case of goodwill impairment under SFAS No. 142. Journal of Applied Business Research, 20(2), 63-70.
Karpoff, J.M., Koester, A., Lee, D.S., Martin, G.S. (2017), Proxies and databases in financial misconduct research. The Accounting Review, 92(6), 129-163.
Kayed, S., Meqbel, R. (2024), Earnings management and tone management: Evidence from FTSE350 companies. Journal of Financial Reporting and Accounting, 22(4), 842-867.
Kothari, S.P., Leone, A.J., Wasley, C.E. (2005), Performance matched discretionary accrual measures. Journal of Accounting and Economics, 39(2005), 163-197.
Krishnan, G.V. (2003), Does big 6 auditor industry expertise constrain earnings management. Accounting Horizons, 17(2003), 1-16.
Larcker, D.F., Richardson, S.A., Tuna, I. (2007), Corporate governance, accounting outcomes, and organisational performance. The Accounting Review, 82(4), 963-1008.
Larcker, D.F., Zakolyukina, A.A (2012), Detecting deceptive discussions in conference calls. Journal of Accounting Research, 50(2), 495-540.
Li, F. (2010), The information content of forward-looking statements in corporate filings - A naive Bayesian machine learning approach. Journal of Accounting Research, 48(5), 1049-1102.
Lin, J.W., Hwang, M.I. (2010), Audit quality, corporate governance, and earnings management: A meta-analysis. International Journal of Auditing, 14(2010), 57-77.
Lisic, L.L., Neal, T.L., Zhang, I.X., Zhang, Y. (2016), CEO power, internal control quality, and audit committee effectiveness in substance versus in form. Contemporary Accounting Research, 33(3), 1199-1237.
Liu, Y., Ning, Y., Davidson, W.N.I. (2010), Earnings management surrounding new debt issues. The Financial Review, 45(2010), 659-681.
Loughran, T., McDonald, B. (2011), When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. The Journal of Finance, 66(1), 35-65.
Magnis, C., Iatridis, G.E. (2017), The relationship between auditor reputation, earnings and capital management in the banking sector: An international investigation. Research in International Business and Finance, 39(2017), 338-357.
Makhlouf, M.H.S., Oroud, Y., Soda, M.Z., Ramadam, A.H. (2021), The moderating effect of audit quality on the relationsip between information asymmetry and earnings management: Evidence from Jordan. Afro-Asian Journal of Finance and Accounting, 12(2), 165-177.
Marais, A., Vermaak, C., Shewell, P. (2023), Predicting financial statement manipulation in South Africa: A comparison of the Beneish and Dechow models. Cogent Economics and Finance, 11(1), 1-33.
Marmousez, S. (2009), The Choice of Joint-Auditors and Earnings Quality: Evidence from French Listed Companies. In: 2009 CAAA Annual Conference. April 2009. Montreal, Canada. http://ssrn.1330061 [Last accessed on 2023 Feb 07].
Mnguni, S., Subban, M. (2022), Audit outcome challenges in local government: The case of three metropolitan municipalities in South Africa. African Journal of Public Affairs, 13(1), 144-172.
Mokoaleli-Mokoteli, T., Iatridis, G.E. (2017), Big 4 auditing companies, earnings management and earnings conservatism: Evidence from an emerging market. Investment Management and Financial Innovations, 14(1), 35-45.
Mokoaleli-Mokoteli, T., Taffler, R.J., Agarwal, V. (2009), Behavioural bias and conflicts of interest in analyst stock recommendations. Journal of Business Finance and Accounting, 36(3), 384-418.
Mukhlasin, M. (2018) Auditor tenure and auditor industry specialisation as a signal to detect fraudulent financial reporting. Academy of Accounting and Financail Studies Journal, 22(5), 1-10.
Nel, G., Arendse-Fourie, S., Ontong, J.M. (2022), The association between optimism and future performance: Evidence of impression management from chief executive officer and chairperson letters. South African Journal of Business Management, 53(1), 1-12.
Noviyanti, S., Winata, L. (2015), The role of "tone at the top" and knowledge of fraud on auditors' professional skeptical behavior. Contemporary Management Research, 11(1), 55-74.
Nugrahanti, Y.W., Puspitasari, A. (2018), Do audit quality, political connection, and institutional ownership increase real earnings management? Evidence from Indonesia. Afro-Asian Journal of Finance and Accounting, 8(4), 413-430.
Özcan, A. (2019), Audit quality and earnings management: Evidence from Turkey. International Journal of Economic and Administrative Studies, 23(2019), 67-78.
Patelli, L., Pedrini, M. (2015), Is tone at the top associated with financial reporting aggressiveness. Journal of Business Ethics, 126(1), 3-19.
Piot, C., Janin, R. (2005), Audit Quality and Earnings Management in France. Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=830484 [Last accessed on 2023 Apr 06].
Rabin, C.E. (2016), Earnings Management in South Africa: Evidence and Implications. Unpublished PhD Thesis, Univeristy of the Witwatersrand, Johannesburg, South Africa.
Rezaee, Z. (2005), Causes, consequences, and deterence of financial statement fraud. Critical Perspectives on Accounting, 16(2005), 277-298.
Rose, A.M., Rose, J.M., Suh, I., Thibodeau, J., Linke, K., Norman, C.S. (2021), Why financial executives do bad things: The effect of the slippery slope and tone at the top on misreporting behavior. Journal of Business Ethics, 174(2021), 291-309.
Schmidt, R.N. (2014), The effects of auditors' accessibility to "tone at the top" knowledge on audit judgments. Behavioral Research in Accounting, 26(2), 73-96.
Selahudin, N.F., Azman. N.A.N.N., Suhaimi, A.N.F., Ahmad, M.F.M., Rahman, N.N.A., Sushela, R., Ramesh, M.R. (2018), Do female director, audit quality and audit committee characteristics influence the earnings management? Global Business and Management Research: An International Journal, 19(3), 130-139.
Sellami, Y.M., Slimi, I. (2016), The effect of the mandatory adoption of IAS/IFRS on earnings management: Empirical evidence from South Africa. International Journal of Accounting and Economic Studies, 4(2), 87-95.
Singh, A., Singh, H., Sultana, N., Evans, J. (2019), Independent and joint effects of audit partner tenure and non-audit fees on audit quality. Journal of Contemporary Accounting and Economics, 15(2019), 186-205.
Sun, J., Cahan, S. (2009), The effect of compensation committee quality on the association between CEO cash compensation and accounting performance. Corporate Governance: An International Review, 17(2), 193-207.
Sun, J., Lan, G., Liu, G. (2014), Independent audit committee

characteristics and real earnings management. Managerial Auditing Journal, 29(2), 153-172.
Svanström, T. (2013), Non-audit services and audit quality: Evidence from private firms. European Accounting Review, 22(2013), 337-366.
Tarchouna, A., Jarraya, B., Bouri, A. (2017), How to explain non-performing loans by many corporate governance variables simultaneously? A corporate governance index is built to US commercial banks. Research in International Business and Finance, 42(2017), 645-657.
Totowa, J., Mokoaleli-Mokoteli, T. (2021), Chairman's letter, impression management and governance mechanisms: A case of South African listed firms. African Finance Journal, 23(1), 1-19.
Wesson, N. (2021), Will mandatory audit firm rotation reduce audit market concentration in South Africa? South African Journal of Business Management, 52(1), 1-13.
Wunderley, L.J., Reddy, W.B., Dember, W.N. (1998), Optimism and pessimism in business leaders. Journal of Applied Social Psychology, 28(9), 751-760.
Yasser, S., Soliman, M. (2018), The effect of audit quality on earnings management in developing countries: The case of Egypt. International Research Journal of Applied Finance, 9(4), 216-231.
Zengin-Karaibrahimoglu, Y., Emanuels, J., Gold, A., Wallage, P. (2021), Audit committee strength and auditors' risk assessments: The moderating role of CEO narcissism. International Journal of Auditing, 25(2021), 661-674.
Zerni, M., Haapamaki, E., Jarvinen, T., Niemi, L. (2012), Do joint audits improve audit quality? Evidence from voluntary joint audits. European Accounting Review, 21(4), 731-765.