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What is in a word? The information value of key audit matters

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Abstract

Purpose – This study aims to investigate whether key audit matters (KAM) in audit reports in South Africa are linguistically homogeneous. If homogenous, then the reports are of limited information value and probably boilerplate.

Design/methodology/approach – Linguistic tone and correspondence analysis (CA) were used to evaluate KAM's information value and provide a visual representation of the differences, between the practices of audit firms, within industries and at client companies over time. Information value was determined by interpreting linguistic (tone) differences using Shannon (1948)'s Information theory as a theoretical lens.

Findings – Overall, the KAM of most client companies, and industries analysed, were found to have information value and are not boilerplate, suggesting that industry-level boilerplating does not occur as argued in prior research. However, most audit firms tend to have a distinctive KAM tone profile or signature, indicating that boilerplate KAM templates are used within audit firms. Lastly, analysis of specific client companies over time indicates that some companies use boilerplate KAM from one year to the next, diminishing the information value of the KAM section of the audit report.

Originality/value – This study's contribution primarily lies in the approach used to evaluate KAM information value, through tone and CA, which is not based on a similarity score like prior studies. Our approach allows us to consider relative associations between firm-year observations and tone categories as an indicator of homogeneity at audit firm level, within industries and for specific client companies over time. The study focuses on South African data, which contributes to the literature on audit reporting practices in developing economies.

Keywords Key audit matters (KAM), Information value, Correspondence analysis, Text analytics, Tone analysis, KAM tone profile

Paper type Research paper

1. Introduction

A common critique against public companies' audit reports before the introduction of key audit matters (KAM) was the lack of information value they provided (Czerney *et al.*, 2019; Gold and Heilmann, 2019; Kaplan *et al.*, 2020). This could mainly be attributed to the boilerplate-type audit reports prescribed by auditing standards and the internal prescriptions

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made by audit firms to minimise legal liability risk (Prasad and Chand, 2017; Segal, 2017). Prior research on audit reports consequently focused on audit opinion paragraphs, as this contained the most variability between company reports (Czerney *et al.*, 2019). A disadvantage of such analyses is that society and researchers need to wait for extreme scenarios to be reported before warning signs within the company can be identified. This lack of information in an audit report creates an extra layer of information asymmetry, i.e. between the users of financial reports and the auditor. In contrast the purpose of a financial audit, is to decrease the information asymmetry between users and providers of financial information (Gold and Heilmann, 2019).

ISA 700 Revised, issued by the International Accounting Standards Board (IASB) with effect from 2017, requires auditors to release an extended audit report (International Standard on Auditing (ISA) 700 (Revised), 2016; Segal, 2017). This was implemented to address the boilerplate issue. The most significant change to the required audit report format was the inclusion of KAM. *ISA 701 Key Audit Matters* came into effect for audits of financial statements with year-ends on or after 15 December 2016 and guides KAM reporting (International Standard on Auditing (ISA) 701, 2016).

These industry developments are also reflected in the development of the academic literature. Only a few studies used linguistic analysis to understand audit reporting before the implementation of ISA 700 and 701 (see Czerney *et al.*, 2019; Flowerdew and Wan, 2010; Kaplan *et al.*, 2020). For example, Czerney *et al.* (2019) used text parsing to investigate the impact of explanatory language included in unqualified audit reports on investor decisions. Flowerdew and Wan (2010) took a linguistic approach using audit reports as a corpus and analysed the linguistic structure of qualified reports to determine how much of the report included original writing. More recently, however, there has been a shift in the literature towards research on the KAM section of the audit report (see, for example, Burke *et al.*, 2023; Chang, Chi and Stone, 2022; Duboisée de Ricquebourg and Maroun, 2023; Ecim, Maroun and Duboisée de Ricquebourg, 2023; and Rousseau, 2022).

Despite the implementation of the extended audit report with KAM, concerns remain that audit firms will continue to use standardised language and descriptions for KAM, especially within specific industries, thereby defaulting again to industry-level boilerplating (Duboisée de Ricquebourg and Maroun, 2023; Li *et al.*, 2019; Segal, 2017; Velte and Issa, 2019). The question is, therefore, whether KAM contains enough information value to justify the cost and effort to include such reporting (Abdullatif and Al-Rahahleh, 2020; Al-mulla and Bradbury, 2022; Burke *et al.*, 2023).

In response to this question, this paper investigates whether the linguistic tone of KAM is similar between companies within the same industry, audited by the same audit firm, or for the same client company over different reporting years. Information value was determined by interpreting linguistic (tone) differences in accordance with Shannon (1948)'s Information theory. Accordingly, information value is deemed the unexpected information gained during communication (Brew, 2006; Shannon, 1948). In contrast, boilerplate disclosure is defined by a lack of linguistic variation. Within the context of KAM, the repetitive use of uniform tone patterns indicates standardised boilerplate reporting. Informative KAM disclosure should reflect the unique risks and professional judgments made during a specific audit. This would result in tone variations when compared to prior years or other companies' audit reports. In this paper, tone was, therefore, used not as a measure of sentiment but as a proxy for linguistic differentiation and entity-specific communication.

Our unique methodological approach begins with performing tone analysis with LIWC text analysis software. The tone data is then analysed with an exploratory statistical

technique, correspondence analysis (CA). CA allows us to establish tone profiles at audit firm, industry and client company levels, which are used as a baseline to determine if KAM boilerplating took place or whether KAM has information value. Tone analysis was performed on KAM extracted from the audit reports of companies listed on the Johannesburg Stock Exchange (JSE) in South Africa from 2017 to 2022. The expected KAM tone profile was compared against the observed profile for a specific client company, year and audit firm. A similar tone profile might indicate boiler plating, whilst variation in tone might indicate information value. We compare our results against publicly available information on events at these companies using SENS[1] cautionary announcements to see if the KAM's tone reflects such events.

Although the study is conducted within a South African setting, this does not detract from its relevance to other settings, mainly because South African auditors adhere to the International Standards on Auditing (ISAs) issued by the IAASB, which are globally accepted standards implemented in most jurisdictions. Therefore, the methodology and findings could be of interest to researchers in any jurisdiction that adheres to the ISAs. Although a developing economy, South Africa has a strongly developed financial system and ranks highly globally in accounting and auditing standards and practices.

We find that fewer than half of the KAM sections of audit reports in the sample were boilerplate and as such, did not vary significantly in tone for a client company from year to year. This indicates that limited information was provided, as the KAM sections of these reports contained little unexpected information. Similarly, analysis at audit firm level showed that most audit firms use KAM templates, which indicated similar reporting practices within audit firms across different clients. When the practices of audit firms were compared to each other, however, it was found that each audit firm has its own distinct tone profile or tone signature. It was also found during analysis of client companies, as compared to others in the same industry, that KAM reports are specific to the client company. Therefore, industry level boiler-plating did not take place, contrary to prior researchers' concerns.

Our contribution argument is founded on the linguistic tone approach used to identify boilerplating in the KAM section of the audit report. This is a unique approach within the accounting and finance literature and superior to that of researchers who tested KAM homogeneity by considering the type of KAM and/or the number of KAM. The linguistic tone approach uses a much richer data set to draw conclusions about boiler plating at different levels of aggregation. Finding evidence of unique audit firm tone signatures, although not surprising, is also new. Not finding evidence of industry level boilerplating contrasts with prior research. Last and least, our sample was contextual to South Africa, a developing country, for which evidence about audit practices remains scarce.

A brief overview of the relevant literature and the theoretical underpinning is presented in Section 2, followed by an explanation of the sample selection and methodology in Section 3. In Section 4 data analyses are discussed with findings, followed by concluding remarks (Section 5), which include a reflection on the study's limitations and areas for further research.

2. Literature review

KAM is defined as "Those matters that, in the auditor's professional judgment, were of most significance in the audit of the financial statements of the current period." (International Standard on Auditing (ISA) 701, 2016). As per ISA 701, auditors must report on such matters and include a description of them and how they were addressed during the audit. Although KAM reporting has, to some extent, been investigated in the literature, prior studies mainly focused on the type (KAM topic), number and readability of KAM (see, for

example, Ecim *et al.*, 2023; Rousseau and Zehms, 2020; Zeng, Zhang and Zhang, 2021). Other than readability, research using linguistic-based text analytics on KAM has been scant. Most studies which considered tone analysis limited their analyses to a net tone calculated by combining negative- and positive-tone elements (see Kend and Nguyen, 2022; Lewis and Young, 2019; Rousseau, 2022; Rousseau and Zehms, 2020). Calculating a net tone simplifies analysis, especially when the research objective is to match an overall tone score to audit firms or for value-relevance market testing. In the current paper, however, we retain the dimensionality of tone categories to explore the information value of the KAM.

Researchers in developing- and developed economies questioned whether KAM increases audit reports' information value (Abdullatif and Al-Rahahleh, 2020; Al-mulla and Bradbury, 2022; Burke *et al.*, 2023). Before the implementation of the extended audit report, stakeholders believed that KAM would lead to an increase in the information value of audit reports (Prasad and Chand, 2017). However, after the implementation of the standard, KAM's value and benefit have been questioned by various stakeholders, and concerns have been raised regarding the cost and time to implement (Burke *et al.*, 2023; Nguyen and Kend, 2021).

2.1 Information value

In prior seminal auditing literature, one of the views used to explain the role of auditing in capital markets is the information hypothesis. This hypothesis presents auditing as a means investors use to improve and ensure the quality of financial information to strengthen decision-making (Ittonen, 2010; Wallace, 1980, 2004). Expanding on this information role we draw on information theory within the communication literature, which proposes that the value of information lies in the "unexpected" (Brew, 2006; Shannon, 1948). This theoretical stance, taken in principle, aligns partly with the framework developed for the interpretation of KAM by investors by Maroun *et al.* (2025). This framework presents that "standard" generic KAM are disregarded by investors but recognises that in some cases, boilerplate KAM may have confirmatory value. The current paper instead follows information theory, as it is not practically possible to identify KAM with confirmatory value other than by obtaining direct input (e.g. through interviews or questionnaires) from investors.

Accordingly, communication received is deemed more valuable if it contains unexpected information. This theory is based on the principles of entropy (specifically Shannon entropy), which posits that if there is no uncertainty about the information presented in, for example, a report, it will have little information value. Higher uncertainty about the information provided in a report reflects higher entropy and is deemed to have more information value. A report that is similar to what is expected (low entropy) will, therefore, have little information value, and a report with high entropy will contain information that deviates from the expected (Brew, 2006; Ittonen *et al.*, 2017; Martínez-Berumen *et al.*, 2014). In this paper, KAM are analysed and interpreted by using Shannon (1948) entropy as a theoretical lens. Thus, KAM that deviate from the expected KAM tone are deemed as having information value, and KAM that have an expected tone are classified as boilerplate. KAM that have information value, therefore, aligns with the information hypothesis as it enhances and supports stakeholder decision-making.

2.2 Key audit matters research

Before the extended audit report came into effect, Prasad and Chand (2017) analysed stakeholders' comments and found that there was uncertainty around the impact the extended auditor's report would have on audit quality. In China, Zeng *et al.* (2021) investigated the link between KAM and commonly used audit quality proxies and found that KAM reporting positively affects certain audit quality proxies. This was echoed by Li *et al.* (2019) in New

Zealand, who found that abnormal accruals (used as audit quality proxy) decreased significantly upon the introduction of the extended auditor's report. In contrast, Al-mulla *et al.* (2022) found no association between KAM and abnormal accruals as an audit quality proxy in New Zealand. In Australia, Nguyen and Kend (2021) could not reach a consensus on whether KAM led to higher audit quality levels based on collected stakeholder interview data. These perceptions were in line with survey research from Finland, where stakeholders also perceived KAM not to have a significant effect on audit quality (Rautiainen *et al.*, 2021).

These differences in the literature regarding KAM's impact on audit quality might be attributed to methodological differences. Interpretive studies have questioned KAM's positive impact on audit quality, whereas positivistic studies generally find a positive effect on audit quality proxies. Other than methodological differences, the findings can perhaps be explained by the strength or weakness of the audit quality proxies used.

More recent studies focused on the association between the linguistic properties of KAM and audit quality. Deneuve (2025) considered dissimilarities of KAM disclosures over time and its impact on audit quality and audit report lag. The study's findings suggest that dissimilarity in KAM disclosures is associated with lower audit quality and a longer audit report lag. Küster (2024) considered the linguistic features of KAM disclosures in Europe. The study includes a sentiment score as one of the linguistic features investigated, but uses the FINBERT language model to determine a sentiment score. Although this approach uses an advanced language model for sentiment analysis, it does not consider tone variances other than positive, negative of neutral scores. In the current study we use the five tone categories of Loughran and McDonald (2011) for a more nuanced tone analysis, as part of the test was to determine if KAM tone reflects actual company events.

2.3 Key audit matters homogeneity

KAM was introduced to provide more information to audit report users (Ong *et al.*, 2022). In contrast, scholars have voiced their concern about the use of boilerplate KAM, especially within industry-specific contexts (Duboisée de Ricquebourg and Maroun, 2023; Li *et al.*, 2019; Segal, 2017; Velte and Issa, 2019). To some extent, this has been refuted by recent studies where variability in KAM type and structure between companies within the same industry was found (Zeng *et al.*, 2021). In addition, differences in KAM style (number, type and structure) of audit firms and audit partners were identified (Rousseau and Zehms, 2020).

Recent studies by Deneuve (2025), Seebeck (2024) and Ding *et al.* (2025) considered KAM dissimilarity and similarity based on text cosine similarity scores. These studies found support that boilerpate KAM are less informative, contradicting the intent of the extended audit report. Küster (2024), identify boilerplate phrases by identifying n-grams (4, 5 or 6-grams) in the text and finds that boilerplate language used in KAM has increased over time. Lin *et al.* (2025) show that in New Zealand repetitive (boilerplate) KAM is associated with lower effort by the auditors. They measure repetitive KAM by analysing difference in KAM topics and description, using plagairasim software to identify variations in the text from one year to the next.

However, studies concerned with the homogeneous nature of KAM at client company and audit firm levels are lacking in developing market contexts, such as South Africa. Prior studies in Bangladesh (Bepari *et al.*, 2024) and Jordan (Abdullatif and Al-Rahahleh, 2020), both showed a tendency of auditors reporting industry-specific KAM. Ding *et al.* (2025) found that auditors used KAM disclosures to limit their litigation risk as industry level boilerplating decreased after a change in securities legislation in China. Within the South African context, research on KAM has focused on analysing the number and type of KAM at audit firm and industry levels (Duboisée de Ricquebourg and Maroun, 2023; Ecim *et al.*, 2023).

The South African context, investigated in this study, can provide insights into KAM reporting practices in a developing economy. Furthermore, South Africa provides a setting with high-quality regulatory standards (aligned with developed countries) yet still experiencing instances of significant corporate or audit failure. South Africa provides the ideal setting for identifying the extent of KAM boilerplating as the country's strong regulatory environment might lead to boilerplate KAM reporting. Thus, auditors may only adhere to the required regulations in form, but without substance, as suggested by prior studies (Bepari *et al.*, 2024; Ding *et al.*, 2025).

Our paper, therefore, contributes to these debates. For example, the paper extends the post-implementation view of Segal (2017) and provides a different context and methods to Suttipun (2022) and Küster (2024). In a broader context, we extend the research of Duboisée de Ricquebourg and Maroun (2023) by considering the extent of boilerplated KAM disclosures and at what level it takes place. Our study, furthermore, complements the work of Maroun *et al.* (2025), Seebeck (2024) and Deneuve (2025).

3. Method

The study follows an exploratory research approach that combines tone analysis with CA. This method uses relative measures to evaluate and compare the practices of audit firms, client companies and reporting practices within industries. CA, which determines the associations based on the chi-squared statistic, is better suited for identifying similar and dissimilar KAM reporting than absolute measures. This is especially relevant as the study analysed unstructured text data, where absolute frequencies can be distorted due to document length.

3.1 Corpus linguistics and natural language processing

Corpus linguistics (CL) is the linguistical analysis of real-life textual data (Pollach, 2012). CL extends computer-assisted text analysis to include statistical procedures and pattern analysis in word frequencies within its context (Pollach, 2012). CL can be used to understand the development of language use over time, discover similarities between documents and detect specific characteristics within the text (El-Haj *et al.*, 2019). Linguists and psychologists have presented evidence that linguistic tone – that is, the use of specific words or phrases within a particular context – can help us understand the writer's/speaker's frame of mind (Boyd *et al.*, 2022; Price *et al.*, 2012). El-Haj *et al.* (2019) highlight the importance of pairing CL methods with high-quality manual analysis and interpretation.

Content analysis and computer-assisted content analysis are popular text-based methodologies accounting and finance researchers use to evaluate annual- or integrated reports (El-Haj *et al.*, 2019; Lewis and Young, 2019; Pollach, 2012). Fisher *et al.* (2016) encouraged the use of CL or Natural Language Processing (NLP) in accounting and auditing research. In addition, these authors noted the limited use of computerised tools in these fields. Many studies focus on the readability of corporate reports and disclosures; however, other measures, especially regarding text analytics and audit reporting, remain relatively unexplored (El-Haj *et al.*, 2019; Fisher *et al.*, 2016). Exceptions are the work of Hayes and Boritz (2021) on restatements; and Boritz *et al.* (2013) on auditor reporting on information technology internal control weaknesses.

In recent years, however, text analytics have been used to understand KAM better. For example, Zeng *et al.* (2021) used text analytics to determine KAM's specificity, similarity, readability and length. Others have focused their studies on the number of KAM included in audit reports, length of KAM, type of KAM, as well as readability of KAM (Burke *et al.*, 2023; Duboisée de Ricquebourg and Maroun, 2023; Ecim *et al.*, 2023; Ong *et al.*, 2022).

3.2 Tone analysis

Tone (or sentiment analysis) is a well-recognised and developed methodology within the CL and NLP fold (Lewis and Young, 2019). Initially, tone analysis was manually performed (see, for example, Kimbrough and Wang, 2014) through the development of dictionaries/lexicons, which entails classifying words or phrases into specific sentiment/tone categories by a panel of experts. However, studies using manual text and tone analysis with audit reports as the corpus is limited. With the development of automated text analysis methodologies, the ease of replicating an existing dictionary to a wide variety of text has proven useful (Lewis and Young, 2019).

Automated text analytics methods of corporate disclosures are broadly divided into dictionary-based methods and machine learning-based methods (Chakraborty and Bhattacharjee, 2020) and, more recently, a combination of the two (Banks *et al.*, 2018; Garten *et al.*, 2018). Most of the existing dictionaries and research around the development of sentiment- or tone analysis have been used in fields other than finance, including political sciences and psychology (Price *et al.*, 2012). The application of tone analysis, for example, to political speeches, online customer reviews and tweets, is commonplace. However, applying general dictionaries developed within these contexts and with "normal speech" in mind has proven inaccurate in analysing financial texts (Lewis and Young, 2019; Loughran and McDonald, 2011). The work of Loughran and MacDonald provided evidence for the need for financial-specific dictionaries (Zhang *et al.*, 2019). Consequently, they developed (and updated) a dictionary for the analysis of financial information (Loughran and McDonald, 2011, 2015, 2016). This dictionary for tone analysis within an auditing context and specifically to evaluate KAM (named Critical Audit Matters in the USA) has recently been used in the USA (USA), Australian, UK, Chinese and European-based studies (Duan, 2025; Kend and Nguyen, 2022; Rousseau, 2022; Rousseau and Zehms, 2020; Smith, 2023).

3.3 Correspondence analysis

CA, also known as reciprocal averaging, is a multivariate, geometric and non-parametric statistical technique used to explore the associations between categorical variables (Sourial *et al.*, 2010). CA results in a graphical display of the variables and their relationship in the form of a biplot (or correspondence plot). The analysis starts with a contingency table where the variables and different categories within the variables are plotted as rows and columns. Row- and column profiles are determined in terms of each variable based on the relative frequencies of each variable. The average profile in CA is called the barycentre or the centroid. The biplot is consequently a display of each row and column profile in relation to the centroid (Herve Abdi and Williams, 2010; Greenacre, 1984; Sourial *et al.*, 2010). CA works on the principle of identifying the difference between an expected profile (centroid) and observed profiles.

The chi-squared statistic (X^2), is a measure of the difference between the expected profile versus the observed profiles (Greenacre, 2017:27). Thus:

$$X^2 = \sum \frac{(observed - expected)^2}{expected} \tag{1}$$

The chi-squared statistic serves as the basis of the graphical representation of the data via correspondence plots (biplots). These plots provide a spatial representation of the first two dimensions or principal axes of the CA decomposition of the inertia (Hervé Abdi and Béra, 2017). Inertia is defined as "a measure of how much the individual profiles are spread around the centroid" (Greenacre, 1984:35). The chi-squared statistic is furthermore used to calculate

if there is a statistically significant departure from the expected profile by comparing the X^2 to the critical point of a chi-squared distribution (Greenacre, 1984).

Another purpose CA serves is dimension reduction to simplify the analysis of constructs with multiple dimensions. Dimension reduction is performed by approximating high-dimensional data in a lower-dimensional space (two or three dimensions) while retaining properties of the original data as much as possible (Greenacre, 2017). The accuracy of the lower dimensional projection is measured by the percentage of inertia, where a higher percentage indicates a higher coverage of the original data (Greenacre, 2017).

Prior studies have found CA valuable for visualising and interpreting the relation between categorical data (Abdi and Béra, 2017; Abdi and Valentin, 2007; Bendixen, 1996; Sourial *et al.*, 2010). CA has been used in several fields, such as medicine, psychology, ecology, epidemiology, sociology, marketing, brand analysis, taxation, behavioural finance and accounting (Dungey *et al.*, 2018; Maroun, 2015; Maroun *et al.*, 2011; Ram *et al.*, 2016; Sourial *et al.*, 2010). This paper proposes CA as an evaluation tool to test KAM information value/boiler plating at company, industry and audit firm levels.

The sample selection was limited to companies listed on the JSE. South Africa has been known for its high-quality audit and reporting standards. However, corporate and audit scandals have tainted this reputation in recent years. This setting provides insights into how auditors applied the new audit reporting requirements within an environment with high-quality regulatory standards, yet which still experienced instances of significant corporate or audit failure.

The sample included all companies listed within six different industries from 2017 to 2022. The KAM sections of the audit reports of a total of 38 companies were analysed, resulting in the analysis of 220 firm-year observations. The sample size is deemed sufficient for the exploratory method used and is comparable to similar text-based studies, such as that of Honkamäki *et al.* (2022), and represents more than 10% of the total population of firm-years of firms listed on the JSE between 2017 and 2022. The six industries were selected purposively, as each one included a company where a known audit and/or corporate incident took place. It was necessary to include such companies in the sample, to identify if and how the auditors of these companies provided different (more or less) information because of these issues. The assumption was made that companies in the same industry would include audit reports with various information levels. Therefore, if these companies' KAM is not homogeneous (not boilerplated), variability is to be expected in the tone. Therefore, each company year provides a unique profile. The association between these profiles was then analysed at audit firm, industry- and client company levels over the selected period. Table 1 indicates the selected companies and their sub-sectors per the Industry Classification Benchmark (ICB) classification.

KAM for the sample of client companies were hand-collected from the audit reports published in the companies' annual reports. In South Africa, including KAM in audit reports became mandatory in 2017. Steinhoff, however, included KAM in its 2016 report and was, therefore, included in the analysis.

Categorical nominal data were generated by performing tone analysis on the extracted KAM text using LIWC-22 software (Boyd *et al.*, 2022). The updated version (2021) of the Loughran and McDonald (2011) dictionary was used to rate the KAM's tone according to the following categories: positive, negative, weak modal, strong modal, constraining, uncertainty and litigious. Table 2 briefly describes each category and the types of words classified in each category.

The tone data were analysed by performing CA using the FactoMineR CA R-package (Lê *et al.*, 2008) embedded in the Jamovi MEDA R-package interface (Jamovi, 2002).

Table 1. Companies used as the sample selection starting point with known issues

Client company name	ICB industry Sub-sector	Year-End date affected (analysed as issue year)	Description of SENS indicating an issue
EOH	Computer services	31 July 2019	SENS 19 February 2019: Forensic investigation into suspicious payments
Tongaat hulett	Food products	31 March 2018	SENS 8 March 2019: Forensic investigation into financial reporting practices for 2018 year-end
Oceana	Farming, fishing, plantations	30 September 2021	SENS 29 October 2021: Investigations into uncertain accounting treatment of subsidiary and conflicts of interest
Steinhoff	Food retailers and wholesalers	30 September 2017	SENS 4 December 2017: The audit report was postponed due to criminal and tax investigations in Germany
Delta properties	Industrial and office REITs	28 February 2020	SENS 21 September 2020: Procurement irregularities and the misappropriation of funds by senior executives
Spar	Broadline retailers	30 September 2022	SENS 9 December 2022: Allegations of fictitious and fraudulent loan

Source(s): Authors' own work

Table 2. Description of tone categories

Category	Description
Positive (P)	Includes words such as achieve, attain, efficient, improve, profitable, or upturn that is unilateral in potential tone. Care was taken not to include positive words that cannot be easily overturned
Negative (N)	Words with direct negative meaning, examples include restated, discontinued, penalties, misstatement, misconduct, etc
Weak modal (WM)	Expressing level of confidence, thus words indicating a lack of confidence. E.g., could, depending, might, possibly, etc
Strong modal (SM)	Expressing level of confidence, thus words indicating confidence and necessity. E.g., always, highest, must, will, etc
Constraining (C)	Words qualifying and limiting, such as depending, directive, forbid, encumber, limit, etc
Uncertainty (U)	Words denoting uncertainty, with emphasis on the general notion of imprecision rather than exclusively focusing on risk
Litigious (L)	Words reflecting a propensity for legal contest or litigiousness or reflecting a litigious environment

Source(s): Loughran and McDonald (2011)

An exploratory data analysis technique, CA, was used to represent KAM tone for specific companies per industry sub-sector. This graphical representation shows a company's data in relation to other companies and to data for the same company over a period of time. This allows for the development of KAM tone profiles for each company, firm or industry analysed.

KAM tone data with little deviation from the expected information and hence low entropy will indicate that: 1) the KAMs and corresponding audit procedures cannot be evaluated by using information available in the audit reports (*i.e.* it has little information value), and 2) the language used by auditors to describe KAM and related audit procedures are at a similar level and, therefore, is indicative of boilerplating. This approach aligns with the framework developed for interpretation of KAM by investors by Maroun *et al.* (2025), which presents that "standard" generic KAM are disregarded by investors. Therefore, the paper aims to explore the level of boilerplating in audit firms within specific industries and companies. No inferential tests were performed, and the influence of KAM reporting on market fluctuations was not within the paper's aims.

4. Data analysis and results

Table 3 indicates the number of profiles (client companies) analysed per year per industry sub-sector. In total, 220 different profiles (company-years) were analysed. Analyses were performed at three levels to understand each company profile better. Firstly, audit firm analysis was performed to establish if differences in KAM tone can be ascribed purely to audit firms' unique practices or policies. After that, industry-level analysis was performed by comparing the industries against each other to establish if companies in the same industry use similar KAM. This was important as prior literature suggested that KAM could be influenced by industry-specific practices (Duboisée de Ricquebourg and Maroun, 2023; Zeng *et al.*, 2021). Finally, individual client companies were analysed over a six-year period to identify if KAM tone is homogeneous for a specific company.

To interpret correspondence plots, the following should be considered: correspondence plots represent latent dimensions whose orientation and interpretation depend on relative positions and distances. The distance between the points, how far away the point is from the centroid, and the angles between the points. For example, if two points lie at approximately a 180-degree angle, these points are strongly opposed (see, for example, "Non-Big 4E" and "Negative" in Figure 1). Points closer to the centroid indicate a lesser deviation from the expected value. Observed row points (industries or companies in this case) lying closer together have a more similar profile (see, for example, "Non-Big 4A" and "Non-Big 4C" in Figure 1). Each correspondence plot presented was analysed together with the corresponding statistical values indicating the measure of deviation from the expected profile. Only statistically significant associations were discussed. It is important to highlight that CA uses relative measures for analysis and not absolute tone measures.

Table 3. Number of KAM reports analysed per year per industry sub-sector

Industry Sub sector	2016*	2017	2018	2019	2020	2021	2022	Total
Computer services		10	12	12	12	12	11	69
Food products		5	6	6	6	6	4	33
Farming, fishing, plantations		7	7	7	7	7	7	42
Food retailers and wholesalers		4	5	5	5	5	5	29
Industrial and office REITs		3	3	3	3	3	3	18
Broadline retailers	1	5	5	5	5	4	4	29
Total	1	34	38	38	38	37	34	220

Note(s): *2016 data pertains to Steinhoff, who produced KAM early, and because the company's issue year was in 2017, the 2016 year was included for analysis
Source(s): Authors' own work

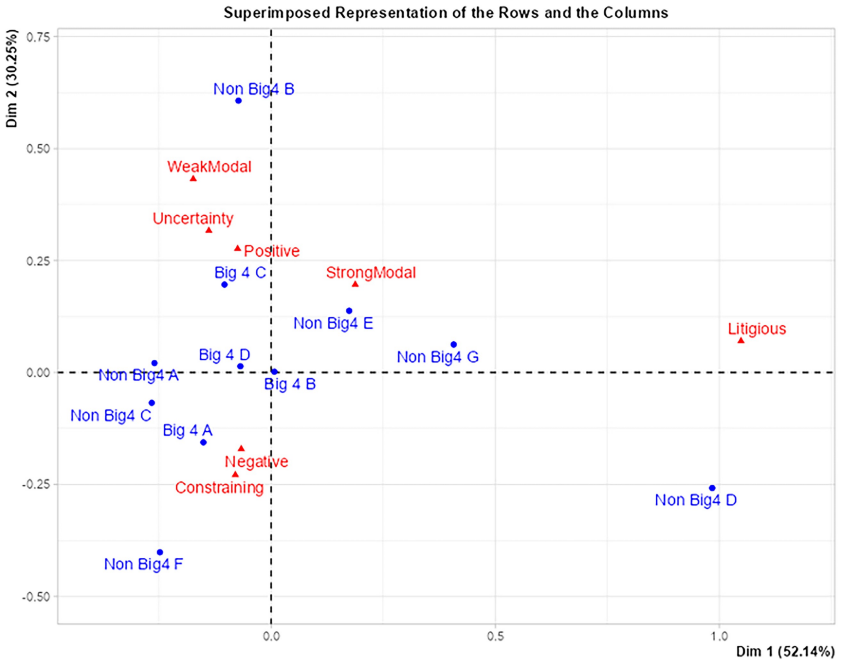

Figure 1. Correspondence plot for all audit firms when years are pooled
Source: Authors' own work

4.1 Audit firm analysis

In prior auditing research, the level of analysis is mostly at the audit firm level. It has been established from prior research that there are differences between the practices of Big 4 audit firms and smaller firms. Furthermore, to confirm whether the results of industry- and client company-level analysis can truly be ascribed to uniqueness at those units of analysis, it had to be established if the practices of the audit firm in terms of terminologies and wording used to describe KAM significantly influence the variations found at other levels of analysis. It is also important to establish whether audit firms use boilerplate/templates for KAM within the audit firm. If boilerplate KAM are used within firms, it decreases the information value and limits the intention of the extended audit report. However, audit firms are expected to use some form of standardisation.

The results of audit firm analyses are presented in Table 4. The names of audit firms were anonymised, but for analysis purposes, a descriptor of "Big 4" or "Non-Big 4" was included. It was found that overall, the KAM tone between audit firms is significantly different. Therefore, each audit firm has a unique KAM tone profile. However, when comparing individual firms' tone over time, it was found that the KAM tone of specific firms remains quite similar across companies and years. This was true for most audit firms, except for four Non-Big 4 audit firms. Analysis of firms Non-Big 4A, Non-Big 4B, Non-Big 4E and Non-Big 4G, showed significant variations in tone from one year to the next.

Consequently, it appears that within audit firms, predetermined KAM templates (or internal standards) are used. This is expected due to firms' attempts to limit their legal

Table 4. Chi-squared results for audit firms

Audit Firm Years: 2017–2022	Pearson's Chi-Squared test X^2	Degrees of freedom (df)	*p*-value
Firm analysis overall			
Audit firm years	1215	312	< 0.001**
Audit firms (when years are pooled) profiles compared to each other (see Figure 1)	104	60	< 0.001**
Individual firm analysis			
Big 4A	40.2	30	0.1
Big 4B	43.2	30	0.056
Big 4C	49.8	30	0.013
Big 4D	36.6	30	0.19
Non Big 4A	85.8	30	< 0.001**
Non Big 4B	24.4	10	0.007**
Non Big 4C	6.53	5	0.258
Non Big 4E	139	30	< 0.001**
Non Big 4F	0.731	6	0.994
Non Big 4G	46.7	25	0.005**

Note(s): **Statistically significant at $p < 0.01$ level. Firm Non Big 4D was not included in the individual firm analysis because there was only one observation (firm-year) for that audit firm in the sample
Source(s): Authors' own work

liability risk and perhaps technical teams contributing to and reviewing audit reports before release. The firms with significant tone variations (audit firms Non-Big 4A, Non-Big 4B, Non-Big 4E and Non-Big 4G) might be less risk-averse or less stringent in their technical reviews. This is not necessarily negative, as their audit reports had more information value, as there was more "unexpected" information in their reports.

Figure 1 presents the correspondence plot for all firms compared to each other. The result of the chi-squared test shows that there are significant differences between the KAM tone profiles of the audit firms (X^2 = 104, df = 60, p < 0.001) and is reflected in Figure 1. The primary objective of this analysis was to identify similarities and differences among individual firms, rather than analysing the Big 4 versus non-Big 4 divide. The results indicate that Big 4 firms exhibit more similar KAM tone profiles, closer to the centroid, whereas some non-Big 4 firms are more widely dispersed. However, as evidenced in Table 4 and Figure 1, notable distinctions still persist among the Big 4. These findings challenge the common assumption in audit literature that the Big 4 are a homogeneous group, suggesting they should not always be treated as a uniform unit of analysis.

Correspondence plots for individual firm analysis were not presented for brevity, but the statistics for each firm are presented in Table 4. Table 4 shows the CA results, and Pearson's Chi-Squared statistic, which indicates the association between each audit firm and the KAM tone. A significant result (high X^2 and p-value < 0.01) indicates that the observed tone variations are not due to chance. Figure 1 indicates that firms with tone variations more aligned with expectations lie closer to the centroid, whereas firms with significant variations in tone, spread out further from the centroid. This indicates that firms closest to the centroid are more aligned with the expected tone and more likely to have used boilerplate reports.

The common practice of audit firms to standardise their KAM creates an opportunity for company-level analysis to be more meaningful. Statistically significant variations in KAM tone, at the industry and client company level of analysis, can, therefore, be ascribed to some uniqueness within the company being analysed, especially if the company has been audited by the same firm over the years of analysis.

4.2 Industry-to-industry analysis

Industry-to-industry analysis was performed to identify if industry-level boilerplating takes place. For this analysis, the years were pooled to identify differences among industries. The decomposition of the inertia is presented in Table 5 showing that the first two dimensions, as presented in Figure 2, represent 91% of the total inertia and represent most of the data. Calculations were performed at a 5% significance level.

The chi-squared test result shows that there are differences in the KAM tone profiles for the different industry sub-sectors (X^2 = 452, df = 30, p < 0.001). Figure 2 presents the correspondence plot and shows that Computer Services (CS) and Food Retailers and

Table 5. Industry-industry decomposition of inertia

Industry-industry	Principal inertia (eigenvalue)	%of inertia	Cumulative %
Dim. 1	0.02532	61.079	61.1
Dim. 2	0.0124	29.919	91
Dim. 3	0.00203	4.903	95.9
Dim. 4	0.00159	3.834	99.7
Dim. 5	0.00011	0.265	100

Source(s): Authors' own work

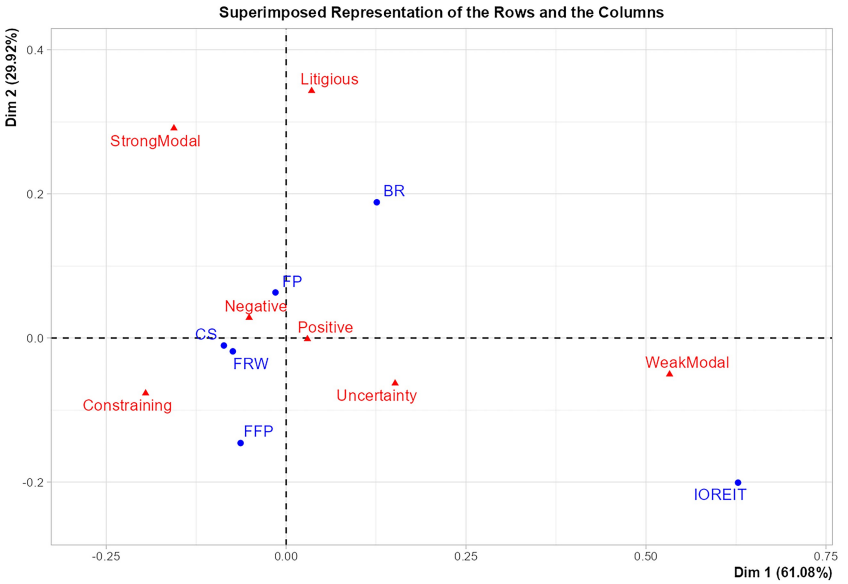

Figure 2. Industry to industry correspondence plot
Source: Authors' own work

Wholesalers have the most similar KAM tone, both being fairly *Negative* and opposed to *Uncertainty*. Farming, Fishing and Plantations shows the most *Constraining* tone, whereas Food Products (FP) revealed a more *Litigious* tone. Broadline Retailers (BR) and Industrial and Office Real Estate Investment Trusts (IOREIT) display the most unique KAM tone profiles, being farthest from the centroid. BR companies' auditors used a more *Litigious* tone paired with some *Weak Modal* tone and opposed to *Constraining*. IOREIT companies' auditors used a more *Uncertain* and *Weak Modal* tone that was simultaneously opposed to *Constraining*. The most significant tones contributing to the tone profile of each industry are presented in Table 6, "KAM Tone 1 and 2" are tone categories each profile is most associated with. The "Opposed KAM Tone" indicates the tone category with which the industry is opposed to as compared to the expected tone profile overall.

4.3 Industry Sub-sector analysis

Table 7 indicates the result of the CA measured by the chi-square statistic for each industry sub-sector. Table 7 also indicates the % of inertia explained in the two-dimensional correspondence plots. The two-dimensional plots for each industry are, therefore, deemed to provide an acceptable representation. Calculations were performed at a 5% significance level. This indicates that in all industry-level analyses, the KAM tone profile for specific companies in a specific year was significantly different from the expected KAM tone profile for the industry. Overall, it seems that KAM were not boilerplated in South Africa from 2017 to 2022 when company data were compared to other companies in the same industry. This is in contrast to findings from other developing economies such as Bangladesh (Bepari *et al.*, 2024) and Jordan (Abdullatif and Al-Rahahleh, 2020). This can, however, be explained by cultural differences and a lesser regulated audit environment in these countries. Both these

Table 6. Summary of industry analysis of KAM tones

Industry Sub-sector	KAM tone 1	KAM tone 2	Opposed KAM tone
Computer services	Constraining**	Strong modal** and negative*	Uncertainty** and weak modal**
Food products	Litigious**		Negative**
Farming, fishing, plantations	Constraining**		Strong modal** and litigious**
Food retailers and wholesalers	Negative**		Uncertainty*
Industrial and office REITs	Uncertainty**	Weak modal**	Constraining**, negative** and litigious**
Broadline retailers	Litigious**	Weak modal*	Constraining**

Note(s): *Statistically significant at $p < 0.05$ level. **Statistically significant at $p < 0.01$ level. Blanks – no significant variation from the expected profile. Therefore, the profile for that industry is aligned to the centroid (similar to the other industries)
Source(s): Authors' own work

Table 7. Pearson's chi-squared statistic results for industry Sub-sector analysis

Industry	Pearson's X^2	Degrees of freedom (df)	*p*-Value	% of inertia explained by first two dimensions
Computer services	1255	408	< 0.001	62.4
Food products	947	192	< 0.001	80.4
Farming, fishing, plantations	614	246	< 0.001	66.7
Food retailers and wholesalers	275	168	< 0.001	63.8
Broadline retailers	526	168	< 0.001	73.4
Industrial and office REITs	194	102	< 0.001	70.1

Source(s): Authors' own work

studies were conducted within two to three years after the implementation of KAM, when audit firms may have been unsure about how to approach KAM reporting. The current study covers a longer period of time, and the audit regulatory environment is more developed and stringent in South Africa than in these countries, which may explain the contrast in findings.

This industry analysis identified several statistically significant ($p \leq 0.05$) differences between the expected and observed company tone profiles within each industry. A detailed discussion of each industry sub-sector analysis and correspondence plot is not provided for brevity. Only Computer Services and Food Product industries biplots are presented and discussed below as examples (refer to Figures 3 and 4). The discussion focuses only on significant associations between row and column profiles. SENS cautionary announcements for companies with significant tone profiles were also considered to confirm whether the KAM tone reflects actual company events. The SENS announcements were only considered to confirm that the KAM tone does reflect realistic events. This was necessary as tone analysis is not performed on "what" but on "how" it was said. Therefore, the matching to

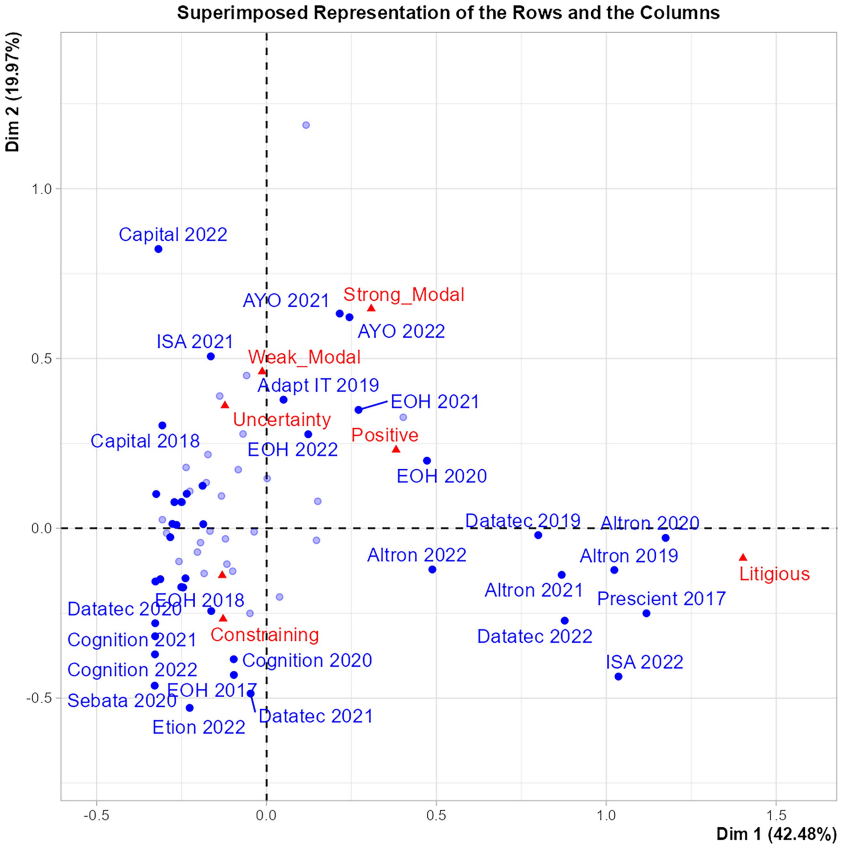

Figure 3. Comptuer Services Industry Correspondence Plot
Source: Authors' own work

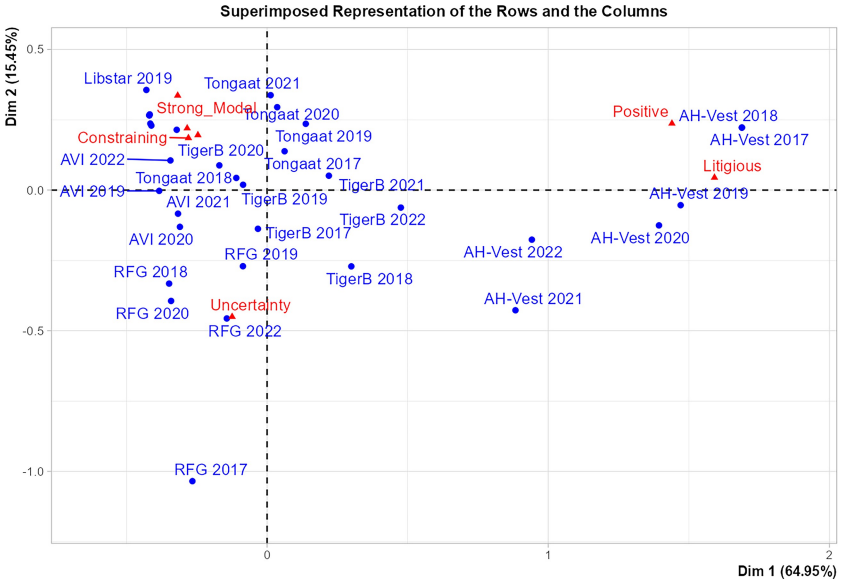

Figure 4. Food Products Industry Correspondence Plot
Source: Authors' own work

SENS announcements was not used to determine if KAM tone predicts events, but only if it reflects company events.

4.3.1 Computer services. Figure 3 presents the correspondence biplot of the CS industry when company-years in this industry are compared to each other (X^2 = 1255, df = 408, $p < 0.001$).

In the CS industry, three KAM tone profile groupings were identified. Companies such as Altron and Datatec have shown a very *Litigious* tone over the years. This finding is supported by SENS cautionary announcements of Altron's involvement in a court case from 2019 to 2021. The other two profile groupings lie close to *Constraining* (see EOH 2017, 2018); and *Strong Modal* (see, for example, AYO 2021, 2022). The industry sub-sector KAM tone profile for CS (see Table 5) is *Constraining*, *Strong Modal* (and opposed to *Uncertainty*). The two groupings that have more *Constraining* and more *Strong Modal* tones are similar to the expected tone profile for this industry and are, therefore, not discussed.

EOH, the company where known issues were identified in 2019, is associated with a *Constraining* tone in 2017, then leans towards *Negative* in 2019, then moves towards *Litigious* in 2020, and is associated with *Uncertainty* in 2021. This appears to reflect the available information regarding the company and the industry for the analysis period and is further discussed in the company-specific analysis section.

4.3.2 Food products. Figure 4 presents the correspondence biplot of the FP industry when company-years in this industry are compared to each other (X^2 = 947, df = 192, $p < 0.001$).

This industry sub-sector analysis presents interesting results, as Tongaat Hulett lies relatively close to the centroid for all years analysed. This indicates that the KAM tone of the company is similar to the tone profile expected for the industry. This is interesting because

there was known audit and financial reporting failure at Tongaat Hulett during this time. Therefore, the expectation was that the KAM tone of this company would vary significantly from the expected profile if the KAM had information value. In contrast, the KAM for this company seem to be boiler plated; therefore, with limited information value. The individual company analysis section further discusses Tongaat Hulett's KAM tone.

In this industry, AH-Vest had a more-than-expected *Litigious* tone over all the years analysed. No SENS announcements could be found to explain this tone. However, upon inspection of AH-Vest's KAM, it was found that this tone is due to discussions around customer contracts highlighted by the auditors every year. RFG's KAM tone in all years of analysis (except for 2021, when no KAM was included in the audit report) was more *Uncertain* than the expected industry profile. No cautionary SENS announcements were identified to explain this uncertain tone. However, further text analysis indicated that the KAM included discussions on impairments of goodwill and intangible assets, which caused the tone to be categorised as uncertain. A third group of companies, including Tiger Brands and AVI, had a *Strong Modal* tone, indicating certainty and conviction, especially in 2017 and 2019. These groupings may reflect auditor practices within the specific industry paired with audit firm similarities. In line with the audit firm-level analysis performed in the previous section, it is interesting to note that AVI and Tiger Brands were audited by the same firm, Ernst and Young, over this period.

Industry analysis indicates that KAM were not boilerplate between companies within the same industry. Thus, the results did not support industry-level boilerplating, which was raised as a possible risk in prior literature.

4.4 Client company analysis over the period

Company-level CA results are presented in Table 8, with each company's chi-square statistic and the cumulative percentage of inertia represented by the first two dimensions. Companies that did not have statistically significant variations in tone (thus $p > 0.05$) consequently had some boilerplating in the KAM section of their audit reports over the years of analysis. A change in auditors (number of times changed) is also tabulated in Table 8. As discussed previously, most audit firms were found to have a unique KAM tone profile, and therefore, if there were significant variations in tone and no change in auditors, then the tone variations point to the KAM containing more information. On the other hand, if there was no significant variation in tone, as for 44% of the companies, boilerplate reports were issued, especially when there was a change in auditors. This finding supports concerns raised in prior literature that auditors will use templates to write KAM and will copy KAM from one year to the next, diminishing its information value.

An overall analysis of the tone of the "issue" companies from 2017 to 2022 was performed to see if any company-specific trends could be identified, especially if the KAM tone could indicate issues. The KAM tone with statistically significant variations (calculated at a 5% level) from the company's overall profile was tabulated below (Table 9). Specific attention is drawn to the tone of the "issue" year (highlighted) compared to the year before and after the "issue" was disclosed. Steinhoff was the only company of the six companies on which company-level analyses were performed that reported on KAM in 2016. EOH and Tongaat Hullet are discussed in more detail below, together with the correspondence biplots, for illustrative purposes. Due to space limitations, the same is not provided for all companies analysed.

4.4.1 EOH. EOH's KAM tone analysis over time ($X^2 = 64.7$, $df = 30$, $p < 0.001$) is presented in the correspondence plot, Figure 5, and the decomposition of inertia is presented in Table 10. Table 10 indicates that the first two dimensions of the

Table 8. Statistics for companies analysed 2017–2022

Company	Number of times audit firms rotated	Pearsons X^2	df (degrees of freedom)	*p*-value	Cumulative % of inertia presented
Broadline retailers					
HomeChoice	0	27.6	30	0.594	89.4
Nictus	1	115	15	< 0.001**	99.7
Pepkor	1	36.8	30	0.182	83.6
Steinhoff	1	99.5	36	< 0.001**	83.1
Woolworths	1	40.2	30	0.101	87.4
Computer services					
Altron	1	52.6	30	0.007**	91.1
AYO	1	38.2	24	0.033*	98.2
Adapt IT	1	20.7	20	0.412	96.9
Capital	0	29.6	20	0.076	91.8
Cognition	1	43	25	0.014*	92.2
Datatec	1	89.8	25	< 0.001**	90
Etion	0	73.8	25	< 0.001**	82.4
EOH	1	64.7	30	< 0.001**	92.1
ISA	1	135	30	< 0.001**	81.3
Jasco	2	19.5	30	0.928	91.1
Prescient	1	119	30	< 0.001**	94.5
Sebata	0	46.8	25	0.005**	90.5
Farming, fishing and plantations					
Astral	0	20.9	20	0.4	91.4
Crookes	1	41.1	25	0.022*	95.6
Oceana	2	101	30	< 0.001**	90.3
Premier fishing	2	62.1	25	< 0.001**	99.4
Quantum	0	2.43	20	1	99.4
RCL	0	16.3	25	0.905	90.8
SeaHarvest	1	38.4	25	0.042*	88.2
Food products					
AH vest	0	27.4	20	0.125	93.3
AVI	1	27.1	25	0.352	88.1
Libstar	0	8.44	12	0.75	99.9
RFG	1	56	16	< 0.001**	77.2
TigerBrands	0	45.5	30	0.035*	93.5
Tongaat	0	9.57	24	0.996	88.5

(*continued*)

Table 8. Continued

Company	Number of times audit firms rotated	PearsonsX^2	df (degrees of freedom)	*p*-value	Cumulative % of inertia presented
Food retailers and wholesalers					
Bidcorp	1	19.6	25	0.765	71.6
Choppies	2	51.8	30	0.008**	89.5
PicknPay	0	33.6	25	0.116	91.7
Shoprite	0	21.3	30	0.879	91.9
Spar	0	43.1	24	0.01*	90.7
Industrial and office real estate investment trusts					
Delta	0	99.5	25	<0.001**	92.5
Equites	0	9.92	25	0.997	96.5
Stenprop	1	47.6	30	0.022*	82.6

Note(s): * - Statistically significant at $p < 0.05$ level ** - Statistically significant at $p < 0.01$ level
Source(s): Authors' own work

Table 9. Company tone analysis over the period

Company name	Industry Sub-sector	Issue year (publicly)	2016	2017	2018	2019	2020	2021	2022
EOH	Computer services	2019		C**		N** U** opposed	L* C* opposed	U* N* opposed	
Tongaat Hulett	Food products	2018							
Oceana	Farming, fishing, plantations	2021		SM** opposed	SM** opposed	U** N* opposed L** opposed SM** opposed	U** N* opposed L*opposed SM** opposed	SM**, L**, N** C** opposed U** opposed	N* U** opposed SM** opposed
Steinhoff	Broadline retailers	2017	SM** C** N* opposed L** opposed	N** L** opposed	N* C*opposed L*opposed	C* opposed	U** opposed C** opposed	SM** N* opposed	L** N** opposed
Delta properties	Industrial and office REITs	2020			P*	C** L* opposed	C** L* opposed		
Spar	Food retailers and wholesalers	2022			SM** L* U* opposed		WM**		

Note(s): *Statistically significant at $p < 0.05$ level. **Statistically significant at $p < 0.01$ level. Key: Positive (P), Negative (N), Weak Modal (WM), Strong Modal (SM), Constraining (C), Uncertainty (U), Litigious (L). Blanks – no significant variation from the expected profile. Therefore, the profile for that year is aligned to the centroid
Source(s): Authors' own work

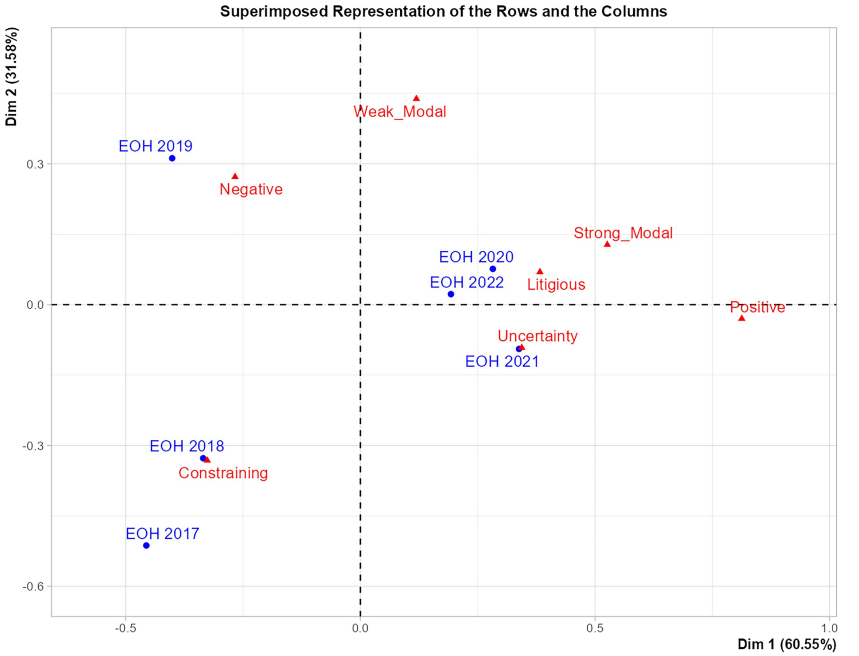

Figure 5. EOH KAM tone 2017–2022
Source: Authors' own work

correspondence plot represent 92% of the data. The most significant tone in 2017 and 2018 is a *Constraining* tone. This then changed to a *Negative* tone in 2019 (when the company's irregularities became known). Constraining language can be seen as cautious and withholding – this can perhaps be considered a warning sign from the auditors regarding concerns at the company. One can see the change in tone in 2020 to the opposite spectrum (opposed to *Constraining*) to *Litigious*. In 2021, the tone is *Uncertain* (and opposed to *Negative*), and the 2022 profile is close to the centroid, perhaps an indication that company problems have subsided.

4.4.2 Tongaat Hulett. Tongaat Hulett's KAM tone analysis over time is presented in the correspondence plot, Figure 6 and the decomposition of inertia is presented in Table 11. Table 11 indicates that the first two dimensions of the correspondence plot

Table 10. EOH Decomposition of inertia

EOH	Principal inertia (eigenvalue)	% of inertia	Cumulative %
Dim. 1	0.11150	60.548	60.5
Dim. 2	0.05815	31.579	92.1
Dim. 3	0.01174	6.377	98.5
Dim. 4	0.00159	0.865	99.4
Dim. 5	0.00116	0.631	100

Source(s): Authors' own work

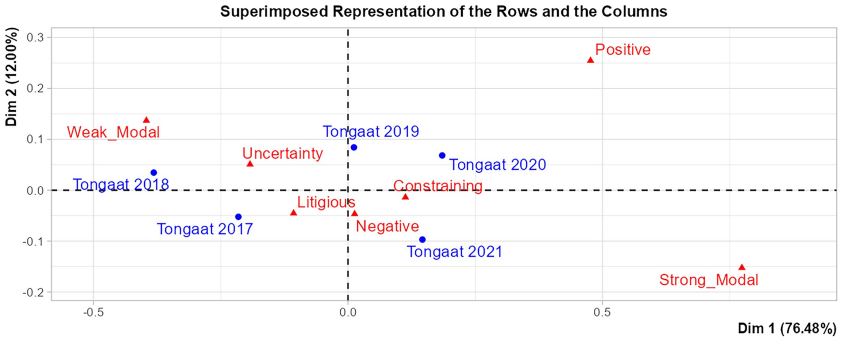

Figure 6. Tongaat Hulett KAM tone 2017–2022
Source: Authors' own work

represent 88.5% of the data. This company has experienced known issues since 2018 and is suspended from trading on the JSE. Former directors and the audit partner have been arrested on suspicion of fraud. Therefore, the expectation was to see at least some of these issues reflected in the KAM. However, no significant relationship could be drawn between Tongaat and any of the tone categories ($X^2=9.57$, $df = 23$, $p = 0.996$). This indicates that the KAM tone does not have information value (no unexpected information) and could reflect boilerplating and poor audit quality. This contrasts with other industries and companies analysed, where KAM tone indicates issues the company experienced.

5. Conclusion

Regulators' attempts to increase the information value of audit reports included the requirement for auditors to report on KAM as of 2017. Some concerns were raised by stakeholders that auditors will default to boiler-plated audit reports and KAM, thus negating the intended purpose. This paper uses text analytics paired with CA to analyse KAM tone. This approach is unique and allows an in-depth analysis of associations between the reporting practices within industries, between audit firms and for specific client companies over time. The information value of KAM tone is tested within specific audit firms, industries and companies over time.

It was found that boilerplating of KAM do seem to take place to some extent at audit firm level, not at industry level, but again within specific client companies. The results showed that the KAM sections of the audit report are similar when analysed for individual audit firms over time. This indicates that audit firms use KAM templates,

Table 11. Tongaat Hulett decomposition of inertia

Tongaat Hulett	Principal inertia (eigenvalue)	% of inertia	Cumulative %
Dim. 1	0.03659	76.483	76.5
Dim. 2	0.00574	11.999	88.5
Dim. 3	0.0053	11.07	99.6
Dim. 4	0.000214	0.448	100

Source(s): Authors' own work

standardised practices or reporting conventions. The practice of boilerplating at audit firm level is not unexpected, as audit firms tend to use pre-approved templates to limit legal liability. The study contributes to the literature by showing that each audit firm has a unique KAM tone profile when audit firms are compared with each other. The findings of the study could be useful for audit stakeholders and auditors. Audit stakeholders and those appointing an audit firm could consider the audit firm's tone profile at appointment to determine whether the audit firm's approach aligns with the company's risk profile. Auditors themselves could take note that the tone used in their communication might signal unintended messages to stakeholders. Furthermore, auditors should be aware that boilerplate KAM decreases the information value of the audit report, thus effort should be spent on writing client-specific KAM that reflects the current year audit approach.

In contrast to concerns in prior literature, KAM do not appear to be boilerplated within specific industries. However, we find that 44% of companies tested in the sample are issuing similar KAM from year to year. Unchanged company circumstances can explain this; however, the expectation is that the auditors' response to the KAM described in the KAM procedures section will differ and develop from year to year. Therefore, this does not seem to be the case for many companies. This is especially concerning if one considers that the analysis period includes 2020, the year of the COVID-19 virus outbreak and consequent lockdowns, which left no business unaffected. One would have expected to see at least some considerations and changes in the audit approach to address KAMs during this period.

We find that KAM are mostly not boilerplated within a specific industry and when companies are compared to each other, in contrast with what prior researchers and stakeholders expected. The importance of including KAM in the audit report is highlighted, as it has information value and can help stakeholders make informed decisions, specifically when companies are compared within an industry.

Analysis of KAM tone of individual companies over 2017–2022 also indicates statistically significant variations in KAM tone for most companies. However, for the rest of the sample KAM tone was found not to vary significantly. Therefore, a consideration is whether homogeneous KAM, especially for a specific company, might reflect a weaker level of audit quality. The low level of entropy in such audit reports indicates low information value, which might indicate low audit quality. Further research can consider whether such company-level boiler plating indicates a weaker level of audit quality.

A finding which requires further investigation is that in various instances, a company or audit-related issue was preceded by an *Uncertain or Constraining* tone in the year(s) before the issues were made public. This indicates that an *Uncertain or Constraining* KAM tone might indicate issues within the company. Consequently, it appears that the auditors are alluding to it without forthrightly stating that there is a problem. Further research can be done to investigate if this tone is a consistent precursor of company and audit-related issues. If this is the case, it may interest various stakeholders, especially investment analysts and shareholders.

There are some limitations to this study. The measurement scale (Loughran McDonald dictionary) used for tone analysis was developed for analysing financial text and 10 K filings to the SEC. There are specific nuances to the language used in audit reports, especially to describe audit procedures (such as one would find in KAM), which means that this scale might not completely fit the auditing context. However, this dictionary was previously used successfully in various financial

settings. It is acknowledged that an auditing-specific dictionary will be preferable to perform a more accurate tone analysis.

The analysis of KAM tone with the current approach has limited predictability value but can be extended to such. Our study explored the information value and homogeneity of KAM reporting and did not aim to use KAM for predictions. The findings of this study provide exploratory evidence that KAM tone has predictability value; however, this type of analysis falls outside the scope of the paper. Furthermore, it should be acknowledged that the analysis of KAM in this study was based only on linguistic tone. The study, therefore, did not analyse nor compare the KAM type or topic other than confirming that KAM tone reflects actual company events by matching the tone to SENS cautionary announcements.

Further research opportunities also exist in linking the results of this paper with capital market data and movements. One can consider if the KAM tone is reflected in the share price movements of corresponding periods with an event study. Another way to test the findings is against SENS tone or other company communiques' tone to see if a predominantly uncertain tone can be matched to corresponding uncertainties in texts produced by the company. Tone analysis can also be performed on other company-related text data, such as analyst reports, which can then be matched to KAM tone.

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Ethics statement

An ethics statement is not applicable because this study is based exclusively on publicly available information as published in annual and/or integrated reports.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Permission to reproduce material from other sources

No material was reproduced from other sources.

Note

[1.] SENS is the JSE's Stock Exchange News Services which provides news regarding company events such as rights offers, cautionaries, results announcements etc.

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Further reading

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