



The informative value of Key Audit Matters in the audit report: understanding the audit firm and matter type impact.

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Abstract

This paper examines whether the readability (and hence informative value) of Key Audit Matters (KAM) varies according to the audit firm and the KAM type disclosed, thus providing stakeholders with different information quality for effective decision making. Our analysis shows that the informative value of published descriptions of KAM matter and KAM audit procedures varies according to the audit firm responsible. This informative value also depends on whether the KAM concerns entity-level or accounting-level risks. This study contributes to stakeholder theory and to the literature on audit report quality by showing how the characteristics of the audit firm and the type/content of KAM presented impact on the informative value of the expanded audit report. Furthermore, we suggest that audit firms may increase or decrease the informative value of the audit report according to the type of KAM disclosure made.

Key words: Audit quality, Audit expectation gap, Audit report, Key audit matter, Readability

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1. Introduction

In recent years, many initiatives have been proposed regarding the disclosure of financial and non-financial information, with a common objective, namely to improve the quality of information provided (Donoher et al., 2007; Kim et al., 2012; Lee, 2017) and to make this information more useful, for a wider range of users (Healy and Palepu, 2001; Hahn and Kühnen, 2013; Leuz and Wysocki, 2016; Christensen et al., 2017). These goals are shared by audit standards setters, seeking to benefit not only stakeholders but society as a whole. In 2015, the International Auditing and Assurance Standards Board (IAASB) presented the expanded audit report, to improve the quality of audit reports and hence their informative value (Vanstraelen et al., 2012; Dobija and Cieslak, 2013). This IAASB 700 series introduced significant changes into the format and content of audit reports, making them longer and potentially more informative. The most important of these changes was detailed in the International Standard on Auditing 701 - ISA 701 (IAASB, 2015). This standard introduced a new section in the audit report, “Key Audit Matters” (KAM). According to the IAASB, “*Key Audit Matters are those matters that, in the auditor’s professional judgment, were of most significance in the audit of the financial statements*”. Among other effects, this additional information for stakeholders on the company’s current status and future prospects was expected to narrow the expectation gap (in the context of agency theory). Moreover, the introduction of the ISA 700 series gave auditors the opportunity to generate a “*tailored audit report*”, greatly enhancing the stakeholder’s understanding of the audit process. In addition, the reform opens up interesting new areas for research (Köhler et al., 2016). The evidence obtained in recent studies is inconclusive on the impact of KAM disclosure on audit report quality. Some studies have found that the expanded audit

report increases the report quality (Li et al., 2019; Reid et al., 2019), others have detected no such relationship (Wei et al., 2017; Almulla and Bradbury, 2018; Gutierrez et al., 2018) while yet others have observed a negative impact (Sirois et al., 2018; Kachelmeier et al., 2018; Carver and Trinkle, 2017; Bédard et al., 2014). As the prime aim of the new audit standards is precisely to increase audit quality through KAM disclosure, further study is needed to clarify this question. Furthermore, if audit quality were increased by enhancing the informative value of the audit report, this would help narrow the audit expectation gap. In view of these considerations, the present study considers the concept of audit quality in terms of the readability of the KAM section of the audit report, following the approach adopted by Li (2008) and Bloomfield (2008), who suggested that readability is an important attribute of report quality. Specifically, our paper examines whether the expanded audit report achieves the communicative value demanded by stakeholders, in the understanding that readability is positively associated with effective communication (Subramanian et al., 1993). In addition, we consider whether the readability of the report varies according to the audit firm responsible and according to the type of KAM disclosed.

Readability can be defined as *“that quality in writing which results in quick and easy communication. Readable writing communicates precisely and with a single reading”* (Schroeder and Gibson (1990). In the present context, therefore, readability describes how well the KAM section of the audit report communicates: a) the matters of most significance identified by the auditors; and b) the audit procedures performed to address these matters (Li, 2008). This focus is of vital importance, as readability is crucial to the effective communication of the audit process (Rennekamp, 2012; Tan et al., 2015). Francis et al. (2014) explains that each of the Big 4 audit firms has its own audit

methodology and testing procedure. Moreover, each accounting firm has devised its own in-house working rules to implement the Generally-Accepted Auditing Standards (GAAS) among its clients (Cushing and Loebbecke, 1986). Our study analyses the relationship between the audit firm and the readability of the descriptions given of the KAM matter and of the audit procedures employed to address it. Additionally, as the nature of the audit procedures depends on the type of account or transaction audited, the readability of KAM-related audit procedures may be determined not only by the auditor's style and methodology but also by the nature and complexity of the KAM itself. Therefore, the KAM audit procedures readability may differ between KAM related to the entity and those related to accounting issues. Accordingly, we argue that the type of KAM considered is relevant to the readability of the KAM audit procedures description given.

Our study shows that audit firms impact in different ways on the quality of the additional information provided to stakeholders via KAM disclosure, and so the audit expectation gap, too, is affected in different ways. Thus, the audit firm's style and methodology have a specific impact on the informative value of the descriptions made, both of the KAM matter and of the corresponding KAM audit procedures. Additionally, we show that the informative value of the KAM audit procedures description depends on whether the type of KAM disclosed concerns entity-level risk or accounting-level risk. In summary, this paper contributes to stakeholder theory and to audit quality literature by clarifying how audit firm characteristics and KAM type influence the informative value of the expanded audit report. In addition, we highlight the need to consider potential incentives to audit firms to increase or decrease the informative value of their audit report via KAM disclosure, a question that is directly relevant to

regulatory and supervisory activities. The study also provides useful information to various entities: to standard setters and regulators regarding the effectiveness of the expanded audit report in enhancing audit quality; to companies, enabling them to better understand the auditor's contribution to the informative value of the report; and to stakeholders in general, by identifying the KAM types that may be more challenging to understand and whose interpretation, therefore, warrants particular attention.

This study focuses on companies listed in the Financial Times Stock Exchange (FTSE) 100 index for the period 2013-2016. In 2013, the United Kingdom was the first European country to adopt the KAM (FRC, 2013) standard required by EU Regulation 537/2014 (European Parliament and European Council, 2014). According to the Financial Reporting Council (FRC), the audit report must describe the risks of material misstatement that in the auditor's opinion have the greatest effect on the audit. The auditor must also describe the audit procedures performed to address those risks (FRC, 2015). Following Asare and Wright (2016), the UK experience is a very suitable case for analysis because the introduction there of KAM disclosure has been well received by auditors and stakeholders alike (Danescu and Spatacean, 2018; Trpeska et al., 2017). The FRC subsequently issued a discussion paper on the usefulness of the audit report as a primary driver of audit quality (FRC, 2016).

The remainder of this paper is structured as follows. After this introduction explaining the timeliness and contribution of the paper, the context of the expanded audit report is outlined in section two. Section three then presents a literature review and the hypotheses proposed. The fourth section details the study method adopted, characterises the sample and describes the variables included. The results are presented in section

five, their robustness is tested in section six and, finally, section seven summarises and discusses the findings obtained.

2. The expanded audit report

In recent years, new audit reporting standards have been proposed, seeking to enhance the communicative value of audit reports and to increase the information available to stakeholders. The most important initiatives in this respect are those of the International Auditing and Assurance Standards Board (IAASB), the Public Company Accounting Oversight Board (PCAOB), the European Commission and the Financial Reporting Council in the United Kingdom. The new requirements of these regulators and standard setters present certain differences, but all result in an expanded auditor's report with precise information about the audit. The IAASB in its ISA 700 series introduced significant changes into audit report structure and content, with the aim of improving the communicative value provided. The new ISA 701, required the inclusion of a KAM paragraph in the audit report of listed companies. This is the most significant of all the changes proposed in this field. According to the IAASB (2015): "Key audit matters are those matters that, in the auditor's professional judgment, were of most significance in the audit of the financial statements". The KAM item requires auditors to describe the most significant risks facing the client, the reasons why they are considered particularly significant for the audit, and the way in which they have been addressed by the audit procedures (IAASB, 2015). Inclusion of the KAM section in the audit report involves changes in how the audit is documented. In consequence, the auditor must analyse risks in accordance with ISA 315 and also evaluate the quality of the internal control system (IAASB, 2016). KAM are often related to areas of significant complexity in financial

information, in areas commonly requiring difficult judgment by the auditor and by the company management. The audit firms use different techniques to describe in the audit report the matters of the most significance identified as KAM and the procedures performed to address them. In some cases, the auditor uses a single column, starting with the KAM title, followed by the content description, then the explanation on how the matter is addressed in the audit and finally a brief conclusion. Other auditors use a two-column format, using the first column to describe the KAM and the second to describe the procedures used to address it. In some cases, the auditor uses graphs or tables to summarise the KAM and to show how they have evolved over time. Irrespective of the layout used, it is clear that to comply with ISA 701, the auditor must describe the KAM and the procedures used to address them.

The United Kingdom was the first EU Member to require the inclusion of KAM in audit reporting. In 2013, the Financial Reporting Council (FRC) published the revised International Standards on Auditing (ISA) 700 (UK and Ireland), requiring auditors to disclose the audit's scope, the risk assessment and the materiality determined. In addition, the auditor is required to disclose the audit strategy and the resource allocation in the audit process (Simnett and Huggins, 2014). In June 2016, the FRC published ISA 701 (FRC, 2016). In Europe, the European Commission has identified the need to enhance the standard model of audit report. Thus, EU regulation No. 537/2014 requires the audit report to describe any significant risks of material misstatement (in line with ISA 701), and to present a summary of audit procedures (European Parliament, 2014).

In the USA, on 1 June 2017, the Public Company Accounting Oversight Board (PCAOB, 2017) adopted a new audit report standard, AS 3101, requiring the communication of Critical Audit Matters. For large accelerated filers, the effect of this

standard was to become apparent in audits of the fiscal year ending on or after 30 June 2019; for all other companies within the scope of the standard, the corresponding date was the fiscal year ending on or after 15 December 2020. According to the PCAOB a CAM is *“any matter arising from the audit of the financial statements that was communicated or required to be communicated to the audit committee; and that relates to accounts or disclosures that are material to the financial statements, and involved especially challenging, subjective, or complex auditor judgment”* (PCAOB, 2017).

The new audit report standards require US and EU auditors to communicate Critical Audit Matters (CAMs) and Key Audit Matters (KAMs) respectively. Audit report observations in accordance with ISA 700 are now available for several years for UK listed companies. The FRC requirements are similar to those established by IAASB in ISA 701 and to those established by PCAOB in the AS 3101 audit reporting standards (PCAOB, 2017) although there are some differences in the definitions of KAM and CAM (Carver and Trinkle, 2017).

3. Theoretical framework and study hypotheses

3.1. Stakeholder theory and audit expectation gap

Although many theories have been proposed to explain the auditing of corporate activities, the most commonly used are Agency Theory and Stakeholder Theory. Company management provides stakeholders with information about the firm's financial performance in the statements issued, but as management and stakeholders have different and sometimes conflicting interests, an independent opinion is needed about the quality of these financial statements. In this context, the principals (shareholders) control the activities of the agent (managers), seeking to minimise agency costs, and the external auditor acts as an agent for the stakeholders (Jensen and

Meckling, 1976; Chow, 1982), ensuring the financial statements issued by the company are complete and accurate. One of the auditor's main functions, thus, is to enable shareholders to take appropriate decisions based on reliable information (Watts and Zimmerman, 1986). However, managers must satisfy the information demands not only of shareholders, but also those of other stakeholders, such as customers, suppliers, employees, banks, regulators and society in general. The stakeholder theory (Freeman, 1984) extends the scope of agency theory by considering all stakeholders. In this theory, the company is viewed as an organisation that interacts with all stakeholders in its environment. Accordingly, the auditor corroborates the financial information issued by the company, on the basis of which stakeholders are enabled to make informed decisions.

Recent accounting scandals have revealed the existence of a gap between what stakeholders expect of auditors and what these professionals are required to provide. This perceived shortcoming generates a lack of confidence between auditors and the users of the financial statements they endorse (Hogan et al., 2008). Clearly, the greater the expectation gap, the lower the credibility of the auditor's work (Sikka et al. 1998). As reputation is a matter of great importance to the external auditor, the buyer of the audit expects, demands and normally receives high-quality service from the auditors (Humphrey et al., 1993). However, as is the case with all service providers, the actual audit quality cannot be observed by all stakeholders, and for many, the audit report is their main source of information about the company. These stakeholders, moreover, make different assumptions about the purpose and range of the audit report, and so they have different perceptions of its informative value and of market reactions (Liggio, 1974). As KAM provide firm-specific information about the audit of financial

statements (Gimbar et al., 2016) and about critical accounting topics or items regarding the company's financial performance, they contribute to reducing the expectation gap between auditors and stakeholders (Velte, 2018), who are thereby assured of appropriate audit and financial reporting quality (Ittonen, 2012). In summary, KAM disclosure in the audit report aims to increase its communicative value, thus enhancing audit quality, raising stakeholders' confidence in the process and narrowing the audit expectation gap.

3.2. KAM readability and audit quality

The evidence obtained in recent studies is inconclusive about the impact of KAM disclosure on audit quality. On the one hand, Li et al. (2019) reported that the new audit reporting standards resulted in improved audit quality. Similarly, Reid et al. (2019) in their study of the relationship between KAM disclosure and audit-related outcomes observed a beneficial effect on audit quality. However, in a more neutral position, Gutierrez et al. (2018) found no significant association between the expanded audit report and audit quality. Similarly, in a study conducted in Australia, Wei et al. (2017) showed that the implementation of the Enhanced Auditor's Report was not associated with any increase in audit quality and in another, conducted in New Zealand, Almulla and Bradbury (2018) found that KAM disclosure had no impact on audit quality. In contrast, other studies have measured a negative effect of KAM disclosure on audit quality. Thus, Sirois et al. (2018) found that KAM disclosure had a negative impact on users' perceptions of the disclosures made in the financial statement, because these paragraphs caused confusion regarding the level of assurance provided by the audit report. In the same vein, Kachelmeier et al. (2018) reported that users of financial

statements assigned less responsibility to auditors for a misstatement in a financial statement related to KAM disclosed in the audit report. Moreover, Carver and Trinkle (2017) provided evidence that the inclusion of KAM may make the report less readable, whilst not affecting investors' assessments of the company's situation. In another study, Bédard et al. (2014) observed negative efficiency effects in the first year's implementation of JOAs (Justification of assessments, a similar concept to KAM, employed in France), and showed that in subsequent years the disclosure of JOAs was negatively associated with financial reporting quality. Finally, Lennox et al. (2017) suggested that although KAM disclosure was reliable, the audit report nevertheless lacked incremental information content, because stakeholders were already informed of these risks in the corresponding financial statements. Overall, these prior studies seem to show that the incorporation of KAM in the audit report is detrimental to perceived audit quality.

These findings suggest that either users of audit reports do not fully understand the information in the KAM or this information is not properly conveyed by the auditor. In this line, Carver and Trinkle, (2017) criticised the limited transparency and readability of audit reports, and Velte (2018) argued that further research into KAM readability and into external auditors' communicative performance was needed.

The IAASB 700 series significantly changed the requirements for the format and content of the audit report, making it both more complete and potentially more informative (IAASB, 2015). Certainly, if KAM disclosure achieves the stated goals, the audit report will be more informative and thus of higher quality. Furthermore, making the audit report more informative should narrow the expectation gap between the principal and the agents in this process. To provide useful information to audit report

users, the KAM must be easy to understand and interpret, enabling appropriate decisions to be taken. In this field, the question of readability has aroused considerable research interest. It constitutes a neutral measure, not requiring specific skills of the user (such as a particular level of education or specialist skills). Moreover, readability does not depend on external factors or on the context, which might be difficult to predict and/or analyse (Brennan and Merkl-Davies, 2018). Instead, readability addresses only the content of the text and its semantic difficulty (Jones, 1996). Readability depends both on the inherent complexity of the matter being discussed and also on the report writer's skills and intentions.

A recent study by Smith (2019) provided evidence that audit reports issued in accordance with the revised ISA 700 are higher in readability, lower in complexity and more representative of increased risk and uncertainty, as they contain more uncertain and negative words. However, as KAM represent the items of most significance in the audit of the financial statements, greater content disclosure might be interpreted by users of the report as meaning the company is at higher risk (Kachelmeier et al., 2018; Dennis et al., 2019; Rapley et al., 2018). Additionally, if the KAM include information related to complex accounting items or transactions, users may find it difficult to understand, due to the specialised language often used to describe them (Dennis et al., 2019; Carver and Trinkle, 2017). Users may also ignore the information included in the KAM if it is perceived as generic and boilerplate (Bédard et al., 2014; Gutierrez et al., 2018) or if the information is already known to them (Lennox et al., 2017). If these study findings are correct, the main objective of the expanded audit report, namely to increase the informative value and hence the quality of the audit report, may not be achieved. The question becomes even more complex if we consider that KAM are

qualitative disclosures that are inherently more difficult to verify than quantitative ones (Baginski et al., 2016). In this respect, studies of corporate information disclosure have shown that managers may draft reports in a less readable form in order to blur or conceal their own poor performance (Li, 2008; Lo et al., 2017). In other words, a company may not want investors to understand an issue that has potential legal consequences for its managers.

Another interesting line of research is that of whether KAM disclosure influences liability judgements. Using jury-eligible individuals as participants, some studies have found that KAM disclosure either has no effect (Brown et al., 2016) or reduces auditor liability (Brasel et al., 2016; Kachelmeier et al., 2018). In contrast, Gimbar et al. (2016) reported that disclosing KAM significantly increases auditor liability under precise accounting standards, and to a lesser extent under imprecise standards. Clearly, if disclosing KAM has the potential to affect the auditor's litigation risk, then the language and style employed to describe the KAM matter and the audit procedures used to address the KAM are not a trivial concern. While there are high expectations that KAM will provide additional information to investors and improve the audit quality, it is nevertheless possible that due to the potential litigation risk attached to these matters KAM may not provide the expected benefits. This would be the case, for example, if the auditor lacked incentives to provide useful information when describing the KAM (Bédard et al., 2014). If we also consider the potential use of boilerplate or ambiguous sentences, and highly complex and technical language, the information content of KAM may be reduced still further. Bédard et al. (2014) also argued that less relevant KAM would not have the same accountability effect on the auditors, and hence, could reduce the expected effect of KAM on the audit. In addition, some business groups have

expressed concern that auditors could resort to defensive disclosures of audit matters and use boilerplate disclosures to mitigate risk (ACCA, 2018). Finally, there is also a risk that the auditor may become complacent over time, leading the reports to become superficial and/or misleading in their portrayal of the current audit (ICAEW, 2017).

In summary, considering the potential effect of KAM description on litigation risk and on auditor accountability, we suggest that the auditor may have incentives to reduce the readability of the the KAM matter and the description of the audit procedures used during the audit to address them, although this question would depend on the audit firm's preferred methodology and on its attitude towards risk.

3.3. Study hypotheses

In this paper, we examine the impact of the audit firm's style and characteristics and the specific KAM type included on the readability of the two main pieces of information disclosed for each KAM included in the audit report, namely, the KAM matter description and the KAM audit procedures description.

Audit firm characteristics

According to Knechel et al. (2015), the market recognises and reacts to different auditor reporting styles. Moreover, investors generally perceive an audit conducted by a Big 4 firm to be of higher quality than one conducted by a non-Big 4 firm (Mali and Lim, 2021; Eshleman and Guo, 2014). Bills et al. (2016) argued that Big 4 auditors provide their clients with up-to-date services and have international experience in serving larger clients, in a variety of industries. Also, Big 4 firms tend to provide higher quality audits, in order to protect their reputation and reduce litigation risk (Gambetta et. al, 2016; Khurana and Raman, 2004). On the contrary, non-Big 4 firms have fewer resources and

less expertise (Francis et al., 2014). A recent study by Moroney et al. (2020) concluded that the inclusion of KAM improves perceived value and credibility only with a non-Big 4 auditor.

Francis et al. (2014) explain that each Big 4 audit firm has its own approach for implementing Generally Accepted Auditing Standards (GAAS), together with in-house working rules for interpreting and applying Generally Accepted Accounting Principles (GAAP), thus producing “audit style” (Cushing and Loebbecke, 1986), meaning that each Big 4 firm will have its own audit methodology and testing procedures. Moreover, auditors differentiate themselves not only in the methods employed, but also in ways such as investment in human capital, by hiring competent staff and providing continuous training (Samagaio and Rodrigues, 2016; Francis et al., 2014), by using compensation policies to incentivise their staff, and by designing internal audit programmes to ensure the consistency of auditing standards across different engagements (Francis et al., 2014). Another important way in which audit firms differentiate themselves is by establishing a unique firm culture, for example with regard to risk. Guénin-Paracini et al. (2014) argued that auditors may suffer from anxiety if their firm’s demands are considered unachievable. In such a case, they may attempt to alleviate fear by performing audit procedures providing a certain degree of comfort. However, audit quality could suffer if this kind of fear resulted in the auditor making inappropriate responses to risk. Studies of audit firm characteristics have primarily focused on two areas, Big-N membership and industry specialisation, reporting that both factors are associated with higher audit quality (Becker et al., 1998; Francis and Wang, 2008; Lennox and Pittman, 2010). On the other hand, when the auditor lacks specific knowledge and relies on specialist assistance, this may provoke

tension between the former's need for comfort and the latter's authority, resulting in competition rather than cooperation (Griffith, 2020). In this respect, Smith-Lacroix et al. (2012) concluded that when the auditor uses a specialist to achieve assurance this erodes the role of the audit partner. Moreover, the incorporation of KAM disclosure gives auditors the opportunity to demonstrate their own quality, via client understanding and technical expertise in the descriptions made of the KAM matter and the audit procedures performed to address them.

In the context of agency theory, the auditor seeks to provide clear and straightforward information to audit report users, thus maximising the communicative value and hence the quality of the audit report, to the ultimate benefit of audit quality. On the other hand, the auditor may also wish to reduce the readability of this information in order to avoid possible litigation and uncomfortable accountability to audit report users. In addition, the audit firm may avoid disclosing sensitive information to the client if this disclosure could impair its relations with company management. While new information provided in the KAM section of the audit report, which by definition concerns risky accounts, transactions or events, may already be disclosed in the financial reports, it is specifically highlighted in the audit report, and thus more conspicuous.

The KAM identified by the auditor are closely related to the client characteristics and the auditor's understanding of these characteristics. Furthermore, as the KAM are usually related to accounting issues, the auditor's own interpretation of the GAAP is a relevant factor. The procedures designed and implemented to address the KAM depend on the auditor's style, i.e. the specific methodology used to implement the GAAS, for all clients. The nature of the information provided in the KAM matter description (more related to GAAP and client characteristics) differs from that provided in the audit

procedures description (more related to GAAS and auditor style). In consequence, there might be different levels of readability in these two areas, in view of the differing incentives to increase the clarity and readability of the information provided in each part of the KAM description. It might be argued that as the KAM matter description has previously been disclosed in the company's financial statements, the auditor should have no impediment to providing a straightforward account, using simple and clear language. At the same time, when describing the audit procedures applied, the auditor will wish to avoid litigation risk and enhanced accountability, and thus has an incentive to use less clear language, lowering readability. The latter situation might also arise because the auditor is unwilling to disclose clear information about its audit methodology to competitors. Moreover, the auditor may use less clear language in describing the KAM matter in order to avoid conflict with management, which might prefer not to disclose sensitive information too clearly.

In view of these considerations, we argue that the audit style adopted not only determines the readability of the KAM matter description, but also that of the KAM audit procedures description. Accordingly, the following hypotheses are proposed:

H₁: The decisions and characteristics of the audit firm determine the readability of the KAM matter description given in the audit report.

H₂: The decisions and characteristics of the audit firm determine the readability of the audit procedures description performed to address the KAM.

KAM type

KAM readability may be determined not only by the auditor's particular style and methodology but also by the nature and complexity of the KAM itself. In this respect, Doyle et al. (2007) examined whether the underlying determinants of internal control

problems varied according to their severity or to their underlying causes (or weaknesses). In this analysis, the authors adopted the classification suggested made by Moody's, according to which material weaknesses are categorized as account-specific material weaknesses and company-level material weaknesses. Lennox et al. (2017) and Sierra-García et al. (2019) identified some KAM disclosures that discussed risks at the entity-level versus accounting level, and concurred with Doyle et al. (2007) that the former is usually more severe. According to these studies, therefore, the KAM type appears to impact on the audit procedure performed but not on the auditor's understanding of the KAM risk description.

Given that entity-level risk is a more challenging area to audit than accounting-level risk, the procedures performed to address problems in this respect may differ in nature and complexity among auditors, because the auditor's particular methodology would be applied to gather specific, appropriate and sufficient evidence, while the audit procedures performed to address accounting-level risk are usually more standardised, as they concern specific GAAP regarding the recognition, valuation and disclosure of the accounting item in question. Therefore, we believe the type of KAM addressed determines the readability of the KAM audit procedures description made in the audit report. Accordingly, we propose the following hypothesis:

H₃: The type of KAM disclosed determines the readability of the auditor's description of the audit procedures performed to address it.

4. Research method

4.1. Sample selection

In the present study, the sample was composed of the companies listed in the Financial Times Stock Exchange 100 (FTSE 100) index which published financial information for the period 2013-16. The population under analysis constituted 400 company-years. The final sample of firms was obtained after applying certain criteria: firms operating in the financial sector were excluded, as were firms with no financial information or KAM data. The final sample, thus, was composed of 1,269 KAM reported by 280 companies, during the period 2013-2016, which are summarised in Tables 1 and 2.

Table 1 near here

Table 2 near here

Financial data were obtained from the Thomson Reuters EIKON database and from the audited financial statements. Additionally, an Excel spreadsheet was generated to reflect the auditors' KAM matter and KAM audit procedures descriptions for each of the 1,269 KAM included in the audit reports considered. Hence, the observations in our sample are composed of these 1,269 company-KAM. As part of our analysis, the FOG Index was calculated for each KAM matter description and for each KAM-related audit procedures using an online tool made available by the University of Alicante (Spain)⁵. We also calculated the BOG Index, using the Stylewriter 4 tool by Editor Software⁶. These particular indices were obtained because in our view they are the most suitable for the analysis of this kind of technical information, as explained in Section 4.3.1.

4.2. Models

The study hypotheses are tested in the following models by ordinary least squares and

⁵Tests Document Readability tool from: <http://accesibilidadweb.dlsi.ua.es/?menu=hr-legibilidad>

⁶<http://www.editorsoftware.com/stylewriter/>

multiple regression analysis.

$$[1a] \text{ FOG KAM MATTER}_{i,t} = \beta_0 + \beta_1 \text{ AUDITOR}_{i,t} + \beta_2 \text{ SWITCH}_{i,t} + \beta_3 \text{ SPECIALIST}_i + \beta_4 \text{ SIZE}_{i,t} + \beta_5 \text{ LEVERAGE}_{i,t} + \beta_6 \text{ ROA}_{i,t} + \beta_7 \text{ YEARS}_{i,t} + \beta_8 \text{ INDUSTRY}_{i,t} + \varepsilon_{i,t}$$

$$[1b] \text{ BOG KAM MATTER}_{i,t} = \beta_0 + \beta_1 \text{ AUDITOR}_{i,t} + \beta_2 \text{ SWITCH}_{i,t} + \beta_3 \text{ SPECIALIST}_i + \beta_4 \text{ SIZE}_{i,t} + \beta_5 \text{ LEVERAGE}_{i,t} + \beta_6 \text{ ROA}_{i,t} + \beta_7 \text{ YEARS}_{i,t} + \beta_8 \text{ INDUSTRY}_{i,t} + \varepsilon_{i,t}$$

$$[2a] \text{ FOG KAM PROCEDURES}_{i,t} = \beta_0 + \beta_1 \text{ AUDITOR}_{i,t} + \beta_2 \text{ KAM TYPE}_{i,t} + \beta_3 \text{ SWITCH}_{i,t} + \beta_4 \text{ SPECIALIST}_i + \beta_5 \text{ SIZE}_{i,t} + \beta_6 \text{ LEVERAGE}_{i,t} + \beta_7 \text{ ROA}_{i,t} + \beta_8 \text{ YEARS}_{i,t} + \beta_9 \text{ INDUSTRY}_{i,t} + \varepsilon_{i,t}$$

$$[2b] \text{ BOG KAM PROCEDURES}_{i,t} = \beta_0 + \beta_1 \text{ AUDITOR}_{i,t} + \beta_2 \text{ KAM TYPE}_{i,t} + \beta_3 \text{ SWITCH}_{i,t} + \beta_4 \text{ SPECIALIST}_i + \beta_5 \text{ SIZE}_{i,t} + \beta_6 \text{ LEVERAGE}_{i,t} + \beta_7 \text{ ROA}_{i,t} + \beta_8 \text{ YEARS}_{i,t} + \beta_9 \text{ INDUSTRY}_{i,t} + \varepsilon_{i,t}$$

Models 1a, 1b, 2a and 2b test hypotheses 1 and 2 while Models 2a and 2b test hypothesis 3.

4.3. Variables

4.3.1. Dependent variables

Previous studies of this question have employed different indexes to measure the readability of narrative disclosure in accounting and auditing (Courtis, 1998; Sydserff and Weetman, 1999; Li, 2008; Lehavy et al., 2011; Ajina et al., 2016; Ertugrul et al., 2017; Wang et al., 2018) but to our knowledge none have attempted to determine which readability index is most appropriate (Sattari et al., 2011).

In the present analysis, the first measure used is the FOG index (Gunning, 1952). This was adopted for several reasons. First of all, for the last decade this index has been the most commonly used in accounting, financial and non-financial information studies (Li,

2008, Lehavý et al., 2011; Lo et al., 2017; Smith, 2019). Therefore, our findings can readily be compared with those of previous work. Secondly, the FOG index reflects the linguistic complexity of the text according to syllables per word and words per sentence (Li, 2008). Thirdly, this index considers the number of years of formal education required to understand the text on the first reading (Courtis, 1998). Overall, the higher the FOG index score, the lower the readability of the text. Another benefit offered by the FOG index, according to Lehavý et al. (2011), is that it provides an objective measure and can be applied to any narrative text. In addition to the FOG index, Smith (2019) also used two alternative measures proposed by Loughran and McDonald (2014), namely “vocabulary” (representing the number of unique words that appear in the audit report divided by the maximum number of entries in the master dictionary) and “financial jargon” (defined as the frequency of the words included and also present in Campbell R. Harvey’s Hypertextual Finance Glossary).

The FOG index is based on the percentage of polysyllabic words (i.e. words of three or more syllables) in a passage. This measure, therefore, is a function of the sentence length and the percentage of complex words. The higher the score, the greater the complexity and, hence, the lower the readability. The index has two components that are summed and then multiplied by a scalar to predict a reading grade level, where higher values indicate less readability, as follows:

$$\text{FOG index} = 0.4 (\text{average number of words per sentence} + \text{percentage of complex words})$$

Complex words are identified as words with three syllables or more.

We expect high FOG index values as the information included in the KAM description and the KAM audit procedures description is complex by nature, but the different

values of the FOG index will show the different level of complexity of this information if the values of the index are different among the KAM under study.

Our second readability proxy is the BOG index (Bonsall et al., 2017; Bonsall and Miller, 2017; Blanco et al., 2020; Hasan, 2020). This index, created in response to the US Securities and Exchange Commission (SEC) call for investor communications to be made more readable and understandable, measures readability by detecting features that “bog down” readers (Bonsall et al., 2017). This index is wide-ranging, including sentence complexity in areas such as use of the passive voice, redundant verbs and jargon (Bonsall and Miller, 2017). The higher the score, the lower the readability. The BOG index is derived from three components:

$$\text{BOG index} = \text{Sentence Bog} + \text{Word Bog} - \text{Pep}$$

According to the *StyleWriter* software website (2020), “**Sentence Bog** measures the effect of sentence length for different writing tasks. **Word Bog** measures word difficulty (rather than word length), abbreviations and acronyms, wordiness, passive verbs and other style issues. **Pep** measures features that are the hallmarks of good writing. They include proper names, interesting words, conversational expressions, direct questions, short sentences, and sentence length variety. Sentence length variety is measured by taking the sentence length standard deviation, multiplying by 10 divided by the average sentence length.” In the present study, the BOG index is measured as the natural logarithm of the total index score.

In Models 1a and 1b, the variables **FOG KAM MATTER** and **BOG KAM MATTER** represent the readability score calculated using the FOG index and BOG index, respectively, related to the matter described in the audit report for each KAM. In Models 2a and 2b, the variables **FOG KAM PROCEDURES** and **BOG KAM**

PROCEDURES represent the readability score calculated using the FOG index and BOG index, respectively, related to the description of the audit procedures performed to address each KAM. We expect higher indexes to reflect greater difficulty for stakeholders to understand each part of the KAM description (i.e. less readability). FOG values of 12-14 mean the text is readable for its intended audience, while FOG values >18 reflect considerable reading difficulty. Similarly, the higher the value of the BOG index, the lower the readability. According to Bonsall and Miller (2017), “*the ratings can be interpreted as follows: 0 to 20 = Excellent; 21 to 40 = Good; 41 to 70 = Average; 71 to 100 = Poor; 101 to 130 = Bad; 131 to 1,000 = Dreadful; 1000+ = Gobbledygook*”

4.3.2. Independent variables

Table 3 – Panel A shows the models variables. Following Smith (2019), who studied audit report readability after the implementation of ISA 700, our model includes auditor characteristics, in the view that the audit report is influenced by the characteristics of auditor and client alike.

The first independent variable considered is that of **AUDITOR**, which identifies the audit firm employed by the companies in our sample (BDO, Deloitte, EY, KPMG or PwC). These firms are numbered from 1 to 5, taking PwC as the reference because it has the largest share in the sample. Each of these firms has its own techniques and procedures, with varying impacts on the auditors’ judgements (Francis, 2011; Francis et al., 2014). A priori, we expect these firms to present different levels of readability for the KAM content description and for the KAM procedure description as each has its own audit style and in-house interpretation of the GAAP (related to the KAM content) and the GAAS (related to the KAM procedure performed).

Following Lennox et al. (2017) and Sierra-García et al. (2019), we did content analysis of the audit reports to classify the KAM into two groups (see the KAM topics included in each KAM type in Table 3 – Panel B). On the one hand, entity-level risks and on the other, risks related to accounting-level issues. **KAM TYPE** is a dummy variable that takes the value of one if the KAM is related to an entity-level risk and zero when it is related to an accounting-level risk. We expect the KAM type to be related to the readability of the description of the procedures performed in the audit in this respect, as different types of KAM require the auditor to perform different types of audit procedure, in complexity and scope.

4.3.3. Control variables

In addition to the above, and in line with previous practice, we control for auditor characteristics as follows. **SWITCH** is a dummy variable that takes the value 1 if the company has changed its audit firm since the previous year and 0 otherwise (Brown and Knechel, 2016). Although, a priori, no clear sign is apparent for the relationship between a change of auditor and KAM readability, we hypothesise that following such a change, the readability of the KAM content description and that of the procedure used to determine it would be increased. We also consider audit industry specialisation. Thus, **SPECIALIST** takes the value 1 when the audit firm is an industry specialist and 0 otherwise. Auditors are treated as specialists if they are industry leaders, defined as having a market share >30% (Audousset-Coulier et al., 2016). Initially, we expect audit industry specialists to include a more readable description of the KAM in their audit report, due to their greater knowledge of the client and its industry.

Another factor included is that of the impact of client characteristics on KAM readability. In this respect, we take company size (**SIZE**), which is measured as the

natural logarithm of its total assets to avoid problems of scale (Prawitt et al., 2011). We expect that the KAM element of the audit report for larger companies will be more complex, and hence less readable, than the corresponding element for smaller companies. As a proxy for solvency, we use the variable *LEVERAGE*, defined as total debts divided by total assets (Wu et al., 2016). This variable reflects potential financial problems. We expect that highly leveraged companies will seek to influence the communication disclosure in their favour, obscuring the severity of any such problems, and so the greater the leverage, the lower the readability of the report. To examine whether the study topics are affected by profitability, we include *ROA*, measured as profit before taxes divided by total assets (Velte, 2018). In this, we hypothesise that the company-related disclosures of more profitable firms will be more readable, to better convey their favourable situation (Li, 2008). Finally, we also control for industry and year effects.

Table 3 near here

5. Empirical results

In this section, we present the descriptive statistics, the correlation results and the main multivariate results obtained.

5.1. Descriptive statistics

Table 4 shows the descriptive statistics obtained for the continuous variables from a sample of 1,269 observations. The mean values of 18.93 and 20.46 for *FOG KAM MATTER* and *FOG KAM PROCEDURES*, respectively, are similar to those obtained in prior studies on disclosure readability in accounting and auditing (Ajina et al., 2016; Ertugrul et al., 2017; Wang et al., 2018). On the other hand, the mean values of 99.69 and 91.45 for *BOG KAM MATTER* and *BOG KAM PROCEDURES*, respectively, are

higher than those reported by Blanco et al. (2020) and Cano-Rodríguez and Moreno (2020). Overall, these results indicate that the content descriptions made and the explanation of the audit procedures performed, for the companies analysed, are generally very difficult to read.

Table 4 near here

Table 5 presents the summary statistics for the categorical variables *AUDITOR* and *KAM TYPE*. The Big-4 firm with the largest market share is PwC, which has more than 38% of the clients in the sample. The only non-Big-4 firm in our analysis is BDO, which has 1.34% of the sample. Thus, over 98% of the companies in the sample are audited by a Big-4 firm. Furthermore, 58.27% of the KAM observations are accounting related and 41.73% concern the entity.

Table 5 near here

5.2. Empirical models

Table 6 shows the results of the Pearson correlation matrix for all the variables. The dependent variables (*FOG/BOG KAM MATTER* and *FOG/BOG KAM PROCEDURES*) are statistically correlated with most of the variables, with values ≤ 0.85 , which is in line with Hair et al. (2010). Multicollinearity diagnostics using the variance inflation factor (VIF) did not reveal any evident problem of multicollinearity ($VIF < 5$, according to Chatterjee and Simonoff, 2013). We also checked for heteroskedasticity, using the Breusch-Pagan test, and for normality with tests of skewness and kurtosis. In no case did the models present any such problem. Neither did the sample present endogeneity, as shown by the absence of correlation between the independent and the dependent variables. The sample was entirely composed of listed, regulated companies, any of which could change its audit firm at any time.

Table 6 near here

Table 7 presents the regression results, which show the effect of the audit firm characteristics on the readability of the KAM matter description. For Model 1a, related to the independent variable *AUDITOR*, the firm BDO (β : 2.940, $P > t$: 0.001) presents the highest positive relation, i.e. the KAM matter description disclosed by this audit firm is least readable. The firms Deloitte (β : 1.401, $P > t$: 0.000) and KPMG (β : 1.430, $P > t$: 0.000) present positive associations for the *FOG KAM MATTER* variable. As PwC is the reference firm, these results show that its KAM matter descriptions are the most readable. For Model 1b, in which the dependent variable is *BOG KAM MATTER*, only Deloitte (β : 0.782, $P > t$: 0.002) and KPMG (β : 0.074, $P > t$: 0.006) present a significant positive association, while for BDO and EY the association is positive, but not significant. In line with Model 1a, these results show that PwC provides the highest levels of readability in its KAM content description. This finding corroborates Hypothesis 1, according to which the readability of the KAM content description varies among audit firms, according to their individual audit styles.

Among the control variables, in Model 1a the correlation for the variable *SPECIALIST* (β : 0.758, $P > t$: 0.005) is positive and significant, which suggests that the content description provided by specialist auditors (vs. non-specialists) is more difficult to read, possibly because they use a more complex rationale to explain KAM. Another of these variables, *LEVERAGE* (β : 0.055, $P > t$: 0.047) is also positively related to the readability of the content description, indicating that more highly leveraged companies tend to provide a KAM content description that is more difficult to understand. Moreover, *ROA* (β : -0.023, $P > t$: 0.045) presents a significant negative association with the FOG index, suggesting that less profitable companies use a more complex KAM content

description. However, Model 1b, which uses the BOG index to measure the readability of the KAM content description, does not reveal any significant association with these three variables.

Model 2a illustrates the relationship between the audit firm, the KAM type and the readability of the audit procedures description, according to the FOG index. As concerns the *AUDITOR* variable, BDO (β : 2.013, $P > t$: 0.021) presents the strongest positive relation, meaning that this firm presents the most complex explanation of the audit procedures performed for the KAM. Deloitte (β : 1.913, $P > t$: 0.000), EY (β : 0.593, $P > t$: 0.084) and KPMG (β : 1.798, $P > t$: 0.000) are also positive and significant but their coefficients are lower than that of BDO. PwC, the reference firm in the model, presents the KAM procedures most clearly. The second independent variable considered, *KAM TYPE* (β : 1.069, $P > t$: 0.000) is positive and significantly correlated, which suggests that the description of the audit procedures performed to address an entity-level risk is more difficult to read than that performed for an accounting-level KAM. Regarding Model 2b, which uses the BOG index as the measure of readability, BDO (β : 0.170, $P > t$: 0.019) obtains the highest positive coefficient, meaning that this firm's description of the KAM procedure is the most difficult to read. In this respect, Deloitte (β : 0.155, $P > t$: 0.000), EY (β : 0.155, $P > t$: 0.000) and KPMG (β : 0.142, $P > t$: 0.000) all obtain positive, significant correlations, but with a lower coefficient than BDO. These results show, as in Model 2a, that the KAM procedure descriptions by PwC are the easiest to read. Model 2b also shows that the correlation for *KAM TYPE* (β : 0.050, $P > t$: 0.001) is positive and significant, which implies that descriptions of KAM procedures for entity-level (vs. accounting-level) risks tend to be less readable. Accordingly, Hypotheses 2 and 3 are supported.

Regarding the control variables in Model 2a, the correlation between readability and the *SWITCH* variable (β : -1.352, $P > t$: 0.000) is negative and significant, meaning that a new auditor's description of the procedure used to address the KAM is usually easier to read than that made by an established firm. On the other hand, the correlation for the *SPECIALIST* variable (β : 1.076, $P > t$: 0.000) is positive and significant, from which we conclude that a specialist auditor is more likely to provide a complex, less readable description. As expected, more profitable companies (represented by the *ROA* variable) provide more readable descriptions of the procedures used to address KAM (β : -.0337, $P > t$: 0.011). In Model 2b, where the BOG index is used to measure readability, our results show that *SWITCH* is negative and significant (*SWITCH*, β : -0.093, $P > t$: 0.001), meaning that a change of auditor is expected to produce a more readable description of the KAM procedure. However, the correlation for the *SPECIALIST* variable (β : 0.065, $P > t$: 0.004) is positive and significant, and so a specialist auditor is expected to give a less readable description of the audit procedures performed. Finally, the procedures performed by leveraged companies (*LEVERAGE*) to address KAM are usually more readable than is the case with their non-leveraged counterparts (β : -0.006, $P > t$: 0.012).

Table 7 near here

6. Robustness

In addition to the above analysis, three supplementary measures of readability were applied, to validate our findings, to corroborate their robustness and to overcome the limitations of the FOG and BOG indexes (Loughran and McDonald, 2014). This check ensures that our study represents a genuine contribution to the academic debate on the question of audit report readability. These supplementary measures and tests of robustness are detailed in Table 8.

The first was the Flesch-Kincaid grade level (FKGL), which is used to determine a reading grade level for written materials. The higher the FKGL score for a text, the more difficult it is to read. This instrument has been used, for example, to test the readability of technical documents for the US armed forces (Kincaid et al., 1975). The following formula is used for the FKGL:

$$\text{FKGL index} = 0.39 \times (\text{the number of words divided by the number of sentences}) + 11.8 \\ \times (\text{the number of syllables divided by the number of words}) - 15.59$$

Secondly, the Automated Readability Index (ARI) was applied as the dependent variable. This index, developed to assess the readability of written materials used in the US Air Force (Senter and Smith, 1967), is calculated as follows:

$$\text{ARI index} = 4.71(\text{characters} / \text{words} + 0.5 (\text{words/sentences}) - 21.43$$

The third additional instrument used is the Simple Measure of Gobbledygook (SMOG) index, which is based on the number of complex words per sentence (Richards and van Staden, 2015). The higher the index score, the lower the readability of the text considered. The SMOG index was developed as a quick and easy means of estimating readability from just two statistics: the number of sentences in the text and the number of words with three or more syllables. The SMOG index is calculated as follows:

$$\text{SMOG index} = 1.043 \times \text{square root of } (30 \times \text{number of words with more than two} \\ \text{syllables/number of sentences}) + 3.1291$$

Table 8 near here

Table 9 shows the descriptive statistics obtained for the three supplementary measures of readability. The mean *FKGL KAM MATTER* score was 16.152, while for *ARI KAM PROCEDURES* it was 16.443. The mean *SMOG KAM MATTER* score was the highest of all, at 17.262. These results are similar to those reported in prior studies on

readability in accounting and auditing (Richards and van Staden, 2015; Wang et al., 2018). Furthermore, the mean scores for *FK KAM PROCEDURES*, *ARI KAM PROCEDURES* and *SMOG KAM PROCEDURES* were all around 18. These results corroborate those obtained with the FOG and BOG indexes according to which the KAM matter description and that of the auditors' procedures to address these risks are in many cases difficult to read.

Table 9 near here

Table 10 shows the Pearson correlations obtained between the different readability measures, confirming Richards and van Staden (2015), who found all of these measures to be highly correlated. We conclude, therefore, that our proxies of readability are all valid.

Table 10 near here

In addition, Table 11 shows that the alternative measures of readability corroborate the robustness of our initial findings. Thus, the choice of audit firm is significantly associated with KAM matter readability. Furthermore, there is a positive, significant relationship between the audit firm, the KAM type and the readability of the description of the audit procedures. Accordingly, the robustness of Models 1a, 1b, 2a and 2b is confirmed.

Table 11 near here

7. Conclusions, limitations and implications

This paper examines whether the audit firm and the type of risk addressed determine the readability of the KAM disclosed in the audit reports issued by non-financial FTSE 100-listed firms during the period 2013-16. The KAM section is one of the most important in the expanded audit report, according to ISA 701. In it, the auditor must clearly

explain the risks identified and the procedures employed to address them. The audit report is addressed to a wide group of stakeholders and therefore its readability is a significant issue. Only if the information presented is readily understandable will stakeholders be able to use it as the basis for making informed decisions. In this paper, we draw on stakeholder theory to argue that if the KAM section effectively increases the communicative value of the audit report, then its overall quality will be enhanced and the expectation gap between the auditor and the stakeholders will be narrowed. For the purposes of this study, the readability of the KAM matter and KAM audit procedures descriptions is taken as a proxy for audit quality, and we seek to determine whether this readability varies according to the audit firm and the type of KAM disclosed.

The results obtained show that BDO, the only non-Big 4 firm in the sample, describes the KAM content and the procedure performed to address the risk in a way that is more difficult to understand, in comparison with PwC, the reference auditor in our models, followed by KPMG and Deloitte. This result shows that the choice of audit firm impacts directly on the readability (and hence the quality) of the additional information provided to stakeholders via KAM disclosure, and so the audit expectation gap will be wider or narrower, accordingly. Our study results also show that the readability of the KAM audit procedures description varies according to the type of KAM disclosed. Specifically, entity-level risks are usually presented in a form that is more difficult to read than accounting-level KAM audit procedures, possibly due to the greater inherent complexity of the former. Furthermore, for most of the readability indexes considered, the description of KAM matter is less complex than that of the KAM audit procedures. This might be because the matter description has previously been disclosed by the

company in its financial statements, and so the auditor does not foresee any great litigation risk attached to the subsequent disclosure. On the other hand, describing the audit procedures could increase the auditor's exposure and hence aggravate the firm's litigation risk and accountability. In consequence, vague language might be used to explain the audit procedures performed as a means of justifying or concealing malpractice. To the same end, the auditor might just comment that most readers will not understand the audit procedures used as they lack the necessary technical skills and language. Finally, we provide evidence that the only non-Big 4 firm in the sample describes the KAM matter and procedures with less clarity than the Big 4 auditors. Within the latter group, PwC is by far the clearest in its descriptions of KAM matter and procedures. These differences show that audit firms have different communication strategies and approaches to litigation risk, a distinction which could be related to differences in audit firm culture.

The question of audit report readability has been examined in earlier research (Fakhfakh, 2015; Carver and Trinkle, 2017; Smith, 2019), but to our knowledge no previous study has been made of the relationship between audit firm, type of KAM addressed and the readability of the new expanded audit report, focusing in particular on the readability of the descriptions of KAM matter and KAM audit procedures. The present study, drawing on stakeholder theory, contributes to our understanding of audit quality by examining whether the KAM informative value varies among audit firms and according to the KAM type considered. In this, we assume that by increasing the informative value of the report, the audit expectation gap will be narrowed and the audit quality enhanced. Our analysis is based on the hypothesis that every audit firm has a particular style and method, each of which impacts in a different way on the informative

value of the descriptions of KAM matter and procedures. Moreover, audit firms may have varying incentives to increase or decrease the informative value provided. In this area, Smith (2019) focused on whether audit reports in the post-ISA 700 period are more readable than before, finding that this is indeed the case. We build on this prior research by examining whether the informative value of the KAM disclosure varies according to the audit firm and the type of KAM considered. In another study, Carver and Trinkle (2017) examined whether KAM disclosure influences investors' perception of the readability of the audit report, their value judgments and their evaluations of management credibility. These authors reported that KAM disclosure impairs readability but does not incrementally inform investors' value judgments. We contribute to these findings by further analysing the variations in KAM readability according to audit firm and KAM type. We also contribute to the discussion on how audit firm culture impacts on audit quality and is affected in turn by changes in audit standards. In this respect, we extend the work of Alberti et al. (2020), who suggested that future research could usefully investigate the extent and circumstances under which a heightened focus on audit firms and report quality has produced real changes in audit firm culture and actual audit quality.

In summary, our analysis provides evidence that the readability and informative value of the KAM description, and hence the quality of the audit report, differ according to the audit firm concerned and the KAM type addressed. This means that some auditors reduce the audit expectation gap more than others, and that this outcome also depends on whether the KAM in question concerns the entity or accounting issues. This study provides useful information to standards setters and regulators, highlighting the effectiveness of the expanded audit report in increasing audit quality and showing how

audit firms and KAM types contribute to this end. Our discussion of audit firms' potential incentives to increase or decrease the informative value of the audit report via their mode of KAM disclosure is also relevant to regulatory and supervisory activities. For companies, our study facilitates a better understanding of the role played by the incumbent auditor, as an agent, in maintaining/increasing the informative value of the audit report. The study also provides useful information for assessing the performance of the incumbent auditor and the audit quality provided. Finally, the results we report can help companies and stakeholders identify the KAM types that can be most challenging to understand and towards which most effort should be directed to maximise clarity.

The present research is subject to certain limitations. As the study focuses on listed companies, the extrapolation of our conclusions to the case of unlisted companies is by no means straightforward. Additionally, as the regulatory environment varies from country to country, this diversity could impact on the behaviour of the audit firm as regards KAM disclosure in the audit report. However, our work also suggests interesting areas for future research. For example, it would be useful to determine whether differences in KAM readability by audit firm and KAM type tend to increase or decrease over time. Furthermore, as a logical consequence of our focus on readability, further work in this field could usefully examine the understandability of the KAM disclosed and consider how this might vary among audit firms and according to KAM type.

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Table 1: Composition of the sample

FTSE 100 Index companies	Observations
Listed throughout study period (2013-2016)	400
Dual-listed	(4)
No expanded audit report (6 companies)	(24)
Operating in financial sector (23 companies)	(92)
Total sample with KAM disclosure (70 companies)	280

Table 2: Number of companies per number of KAM and year

KAM (n)	2013	2014	2015	2016	Total
1	2	1	0	1	4
2	5	4	7	1	17
3	9	11	17	22	59
4	18	19	13	16	66
5	22	19	16	12	69
6	8	7	9	6	30
7	3	6	5	6	20
8	1	3	2	5	11
9	1	0	1	1	3
10	1	0	0	0	1
Total	70	70	70	70	280

Table 3 – Panel A: Definition of study variables

Variable name	Definition
FOG KAM MATTER	FOG index related to the KAM matter description
FOG KAM PROCEDURES	FOG index related to the KAM procedure description
BOG KAM MATTER	Natural log of BOG index related to the KAM matter description
BOG KAM PROCEDURES	Natural log of BOG index related to the KAM procedure description
AUDIT FIRM	Categorical variable of the audit firm: PwC, BDO, Deloitte, EY, KPMG
KAM TYPE	Dummy variable =1 if the KAM concerns entity-level risk and =0 if it concerns accounting-level risk
SWITCH	Dummy variable =1 if the company has changed its auditor since the previous year and =0 otherwise
SPECIALIST	Dummy variable =1 when the auditor is a specialist in the client's industry and =0 otherwise
SIZE	Natural log of client's total assets
LEVERAGE	Total debt divided by total assets
ROA	Return on assets: total profits divided by total assets
YEARS	Categorical variable that reflects the year, 2013-2016
INDUSTRY	Categorical variable that reflects the industry sector: basic materials, consumer goods, consumer services, healthcare, industrial, technology and telecommunications, and utilities, gas & oil.

Table 3 – Panel B: KAM topics by KAM type

ACCOUNTING-LEVEL RISK KAM	ENTITY-LEVEL RISK KAM
Asset impairment	Business combination
Accounts/Loans receivables	Compliance with laws and regulations
Contingent liabilities	Industry specific issues
Derivatives and hedging	Information technology control
Financial assets	Internal control
Intangibles and Goodwill	Litigation/regulatory provisions
Inventories	Tax-related issues
Investment valuation	
Leases	
Long-lived assets	
Pension schemes	
Presentation and disclosure	
Property, plant and equipment	
Revenue	
Supplier rebates	

Table 4: Descriptive statistics: continuous variables

Panel A: Dependent variables				
Variable	Mean	Std. Dev.	Min.	Max.
FOG KAM MATTER	18.93018	3.371226	8.04	33.11
BOG KAM MATTER	99.68873	28.61404	20	264
FOG KAM PROCEDURES	20.46676	3.405714	11.45	36
BOG KAM PROCEDURES	91.45154	24.49738	5	236
Panel B: Control variables				
Variable	Mean	Std. Dev.	Min.	Max.
SIZE	16.3255	1.2779	13.083	28.1
LEVERAGE	0.6525	3.3656	0.016	45.62
ROA	6.0456	7.5664	-23.197	48.769

Table 5: Descriptive statistics: categorical variables

	Frequency	%	Cumulative
Panel A: Independent variables			
AUDITOR			
PwC	490	38.58	38.58
DELOITTE	305	24.02	62.60
EY	156	12.28	74.88
KPMG	302	23.78	98.66
BDO	17	1.34	100.00
KAM type			
Accounting	740	58.27	58.27
Entity	530	41.73	100.00
Panel B: Control variables			
SWITCH			
No	1,157	91.10	91.10
Yes	113	8.90	100.00
SPECIALIST			
No	721	56.77	56.77
Yes	549	43.23	100.00
YEAR			
2013	317	24.96	24.96
2014	321	25.28	50.24
2015	311	24.49	74.72
2016	321	25.28	100.00
INDUSTRY			
Basic materials	176	13.86	13.86
Consumer goods	243	19.13	32.99
Consumer services	346	27.24	60.24
Healthcare	95	7.48	67.72
Industrial	172	13.54	81.26
Technology & comm.	102	8.03	89.29
Utilities, gas & oil	136	10.71	100.00
Total	1,269	100.00	100.00

Table 6: Pearson correlation

	VIF	A	B	C	D	E	F	G	H	I	J	K	L	M
A. FOG KAM MATTER	-	1												
B. BOG KAM MATTER	-	0.439*	1											
C. FOG KAM PROCEDURES	-	0.321*	0.181*	1										
D. BOG KAM PROCEDURES	-	0.165*	0.264*	0.443*	1									
E. AUDIT FIRM	1.74	0.08**	-0.103*	0.111*	0.110*	1								
F. KAM TYPE	1.05	-0.004	0.170*	0.140*	0.078*	-0.08*	1							
G. SWITCH	1.07	-0.028	-0.014	-0.129	-0.08*	0.06**	-0.001	1						
H. SPECIALIST	2.18	-0.028	0.044	-0.006	-0.010	-0.62*	0.129*	-0.032	1					
I. SIZE	1.63	0.016	0.036	0.004	0.009	-0.15*	0.116*	0.029	0.337*	1				
J. LEVERAGE	1.06	0.038	-0.037	0.015	-0.06**	0.117*	0.017	0.025	-0.07**	-0.005	1			
K. ROA	1.28	-0.05**	0.037	-0.06**	0.04***	0.06**	0.021	-0.014	-0.154*	-0.296*	0.043	1		
L. YEAR	1.56	-0.033	-0.172	-0.103*	-0.23*	0.06**	-0.024	0.134*	-0.002	0.081*	0.022	-0.152*	1	
M. INDUSTRY	2.08	-0.07*	-0.037	-0.132*	-0.06**	-0.07*	-0.016	-0.031	0.124*	0.181*	-0.013	-0.032	0.002	1

*, ** and *** represent statistical significance at 1%, 5% and 10%, respectively

Table 7: The impact of audit firm on KAM matter and KAM procedures readability

	Model 1: Impact of audit firm on KAM matter readability		Model 2: Impact of audit firm and KAM type on KAM procedures readability	
	1a. FOG	1b. BOG	2a. FOG	2b. BOG
	Coef.	Coef.	Coef.	Coef.
INDEPENDENT VARIABLES				
Auditor (PwC)				
BDO	2.940*	0.006	2.013**	0.170**
DELOITTE	1.401*	0.782*	1.913*	0.155*
EY	0.2961	0.019	0.593***	0.156*
KPMG	1.430*	0.074*	1.798*	0.142*
KAM type	-	-	1.069*	0.050*
CONTROL VARIABLES				
Switch	-0.178	0.016	-1.352*	-0.093*
Specialist	0.758*	0.008	1.076*	0.065*
Size	-0.108	-0.002	-0.113	-0.042
Leverage	0.055**	0.013	0.021	0.057**
ROA	-0.023***	0.005	-0.033**	0.010
Year-controlled	Yes	Yes	Yes	Yes
Industry-controlled	Yes	Yes	Yes	Yes
Constant term	0.000	0.000	0.000	0.000
Adjusted R ²	0.070	0.081	0.135	0.154
Sample: 1,269 observations in 2013-2016. *, ** and *** represent statistical significance at 1%, 5% and 10%, respectively				

Table 8: Variables – Test of robustness

Variable name	Definition
FK KAM MATTER	FK index related to the KAM matter
ARI KAM MATTER	ARI index related to the KAM matter
SMOG KAM MATTER	SMOG index related to the KAM matter
FK KAM PROCEDURES	FK index related to the KAM procedures
ARI KAM PROCEDURES	ARI index related to the KAM procedures
SMOG KAM PROCEDURES	SMOG index related to the KAM procedures

Table 9: Descriptive statistics - Test of robustness

Dependent variables				
Variable	Mean	Std. Dev.	Min.	Max.
FK KAM MATTER	16.25232	3.153913	4.45	28.65
ARI KAM MATTER	16.4437	3.945645	3.48	33.02
SMOG KAM MATTER	17.26221	2.477596	8.48	38.42
FK KAM PROCEDURES	18.20684	2.963269	11.58	33.29
ARI KAM PROCEDURES	18.74915	3.758456	10.8	39.07
SMOG KAM PROCEDURES	18.82819	2.305884	13.25	28.1

Table 10: Pearson correlation - Test of robustness

	A	B	C	D	E	F	G	H	I	J
A. FOG KAM MATTER	1									
B. BOG KAM MATTER	0.439*	1								
C. FKGL KAM MATTER	0.926*	0.440*	1							
D. ARI KAM MATTER	0.894*	0.401*	0.976*	1						
E. SMOG KAM MATTER	0.869*	0.390*	0.914*	0.885*	1					
F. FOG KAM PROC.	0.321*	0.181*	0.293*	0.275*	0.280*	1				
G. BOG KAM PROC.	0.165*	0.264*	0.168*	0.158*	0.161*	0.443*	1			
H. FKGL KAM PROC.	0.321*	0.181*	0.322*	0.302*	0.296*	0.941*	0.458*	1		
I. ARI KAM PROC.	0.323*	0.176*	0.322*	0.310*	0.298*	0.927*	0.429*	0.983*	1	
J. SMOG KAM PROC.	0.308*	0.173*	0.294*	0.271*	0.292*	0.949*	0.451*	0.951*	0.939*	1

* Represents statistical significance at 1%.

Table 11: Test of robustness - The impact of audit firm on KAM matter and KAM procedures readability

	Model 1. The impact of audit firm on KAM matter readability			Model 2. The impact of audit firm and KAM type on KAM procedures readability		
	FKGL	ARI	SMOG	FKGL	ARI	SMOG
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
INDEPENDENT VARIABLES						
Auditor (PwC)						
BDO	3.148*	4.003*	2.391*	3.054*	1.417**	3.054*
DELOITTE	1.562*	1.869*	1.115*	2.596*	1.365*	2.596*
EY	-0.045	-0.2845	-0.343	0.9226**	0.5947*	0.9226**
KPMG	1.251*	1.420*	0.797*	2.363*	1.384*	2.363*
KAM type	-	-	-	0.7769*	0.7072*	0.7769*
CONTROL VARIABLES						
Switch	-0.138	-0.131	-0.054	-1.267*	-1.562*	-0.963*
Specialist	0.581**	0.625**	0.308	1.082*	1.302*	0.814*
Size	0.005	-0.024	0.012	-0.017	-0.016	-0.075
Leverage	0.032	0.041	0.022	0.033	0.050***	0.028
ROA	-0.023***	-0.028***	-0.016	-0.026**	-0.038*	-0.019**
Year-controlled	Yes	Yes	Yes	Yes	Yes	Yes
Industry-controlled	Yes	Yes	Yes	Yes	Yes	Yes
Constant term	0.000	0.000	0.000	0.000	0.000	0.000
Adjusted R ²	0.099	0.088	0.072	0.151	0.144	0.145

Sample: 1,269 observations in 2013-2016.
 *, ** and *** represent statistical significance at 1%, 5% and 10%, respectively