What matters in disclosures of key audit matters: Evidence from Europe

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Abstract
New regulation in the European Union has introduced the mandatory disclosure of key audit matters (KAMs) to audit reports. The EU has identified KAMs as significant risks, significant transactions or events, or significant judgments by auditors. This paper aims to determine the factors that influence the number of KAMs that auditors disclose in the main European countries under the new regulation. We predict that the litigation risk, reputation loss, auditor–client relationship, precision of accounting standards, and the effect of regulators and supervisors’ activities affect the number of KAMs that auditors disclose. The sample consists of firms on the FTSE 100, CAC 40, or AEX 25 that have disclosed KAMs at the 2016 fiscal year-end. In line with our hypotheses, the findings show that a higher number of business segments (complexity) and more precise accounting standards lead to the disclosure of a higher number of KAMs. Contrary to our expectations, the results indicate that a positive association exists between the audit fee and the number of KAMs disclosed. As audit fees can be related to higher client risk, this finding could indicate that litigation risk dominates any auditor–client dependence. Further, although auditors often view their audits of banks as complex, the findings show a
negative association between banks and the number of disclosed KAMs. This evidence may be related to the fact that financial institutions are in a highly regulated and supervised industry that reduces the need to disclose the KAMs.

**KEYWORDS**
auditor judgment, auditor report, determinants, key audit matters, risk

### 1 | INTRODUCTION

In recent years, the pass/fail model for audit reports has been the subject of growing criticism by regulators and users as it provides little communicative value (Church, Davis, & McCracken, 2008). As a result, several institutions and regulators began to work on a new reporting model for auditors in order to enhance the report’s content and informational value.

The European Union adopted Regulation (EU) No 537/2014 of the European Parliament and the Council in April 2014 that took effect for accounting periods starting on or after June 17, 2016. This regulation sets out several measures to emphasize the importance of the auditor’s independence, new requirements for audit committees, and greater transparency in the audit report. One of the most important changes in the report is the expanded information on key audit matters (KAMs) that are areas identified as significant risks, significant transactions or events, or significant judgments by auditors (including the audit of accounting estimates). This new regulation began at the same time as the revised International Standard on Auditing (ISA) 701: Communicating Key Audit Matters in Independent Auditor’s Report that became effective for audits of financial statements for periods ending on or after December 15, 2016.

Several interest groups have questioned the informativeness of the new regulation for investors (Bédard, Gonthier-Besacier, & Schatt, 2014; Lennox, Schmidt, & Thompson, 2017). They point to the impact that the disclosure of KAMs may have on the auditor’s liability (Gimbar, Hansen, & Ozlanski, 2016b). They also argue that this type of information might lessen the focus on the remaining parts of the financial statements (Sirois, Bédard, & Bera, 2017).

Following the financial scandals of the early twenty-first century, regulating bodies, accounting professionals, and academics have been working on the quality of audits. Their focus has been on the idea of extended audit reporting as a way to increase the information content in the report to reduce the information asymmetry between auditors and users (Bédard et al., 2014; Cordoş & Fülöpa, 2015). Through experiments with professional and nonprofessional agents, different studies have investigated the consequences of KAMs on investors’ decisions or auditors’ liability (Christensen, Glover, & Wolfe, 2014; Gimbar et al., 2016b; Lennox et al., 2017; Sirois et al., 2017). Nevertheless, less research focuses on what might influence the disclosure of KAMs by auditors. Köhler, Ratzinger-Sakel, and Theis (2016) suggest that future research on how auditors’ characteristics influence the communication of KAMs is needed as this communication is based on their judgment.

According to ISA 701, auditors must determine and disclose KAMs that are, in the auditor’s professional judgment, the most significant issues in the audit of the financial statement. In this context, auditors must choose which KAMs to disclose in their report each year. This decision-making is complex because it is dependent on different elements, subprocesses, and tasks (Einhorn & Hogarth, 1981).
This paper uses Hogarth’s (1980) theory on information assimilation to identify the factors that influence the number of KAMs that auditors disclose under the new regulation in the European countries of France, the UK, and the Netherlands. We expect that the auditors’ risk of litigation and the auditor–client relationship combined with the precision of accounting standards and the regulators’ and supervisors’ activities are important drivers of the number of disclosed KAMs.

The sample consists of firms listed on the FTSE 100, CAC 40, or the AEX 25 that have disclosed KAMs at the 2016 fiscal year-end. We have chosen these indices because these three countries (the UK, France, and the Netherlands) were already disclosing KAMs in their audit reports before 2016.

In line with our hypotheses, the findings show that a higher number of business segments (complexity) and more precise accounting standards lead to the disclosure of a higher number of KAMs. Contrary to our expectations, the results show a positive association between the audit fee and the number of disclosed KAMs. As audit fees are related to higher client risk, this finding indicates that litigation risk surpasses any auditor–client dependence and has the opposite effect on the number of disclosed KAMs. Further, although auditors often view the audits of banks as complex, the findings show a negative association between banks and the number of disclosed KAMs. This evidence may be related to the fact that financial institutions are in a highly regulated and supervised industry that reduces the need to disclose the KAMs. These findings are robust to different tests.

This paper contributes to the literature by examining the determinants of KAMs in this new type of disclosure. The literature on KAMs mainly investigates the consequences of their disclosure on the auditors’ liability and investors’ decision-making by using experimental cases. This paper provides direct evidence on what motivates auditors to disclose KAMs. Although there are guidelines for determining whether an issue constitutes a KAM, guidance about the number of KAMs that should be reported is scarce. As the number of KAMs depends on professional judgment, it is important to determine what factors influence the auditor’s behavior.

The identification of the determinants of the number of KAMs is relevant for three main reasons. First, the greater the number of KAMs, the less useful the auditor’s report is. More KAMs increase the complexity and can dilute their importance (Sirois et al., 2017). Second, KAMs attract the users’ attention and make the related disclosures in the financial statement more salient (Orquin & Loose, 2013), but increasing the number of such elements can also reduce the effectiveness of their signaling (Li, Qi, Tian, & Zhang, 2017). Furthermore, because KAMs are more concise and credible than other disclosures (Christensen et al., 2014), users may rely on these as substitutes.

This paper also contributes to the literature by showing the relation between the precision of accounting standards and the disclosure of significant areas of risk in the audit report. Previous studies investigate this relation by using experiment models. By contrast, this study provides direct evidence of this relation.

Our results also show that auditors tend to disclose fewer KAMs for financial institutions than for other firms. This paper contributes to the area of research that shows that auditors expend less effort on firms that are more regulated and supervised.

Finally, our findings may be useful to standard setters, regulators, and financial managers as they give a better understanding of the factors that may influence the decision process underlying an auditor’s decision to disclose KAMs.

2 | LITERATURE REVIEW AND HYPOTHESES

One of the purposes of the new audit report is to reduce the expectation and information gaps between users and auditors by improving the auditors’ communication by adding more information to the
The International Auditing and Assurance Standards Board (IAASB) (2011) defines the expectation gap as the “difference between what users expect from the auditor and the financial statement audit and the reality of what an audit is.” It goes on to define the information gap as the “gap between the information users believe is needed to make informed investment and fiduciary decisions, and what is available to them through the entity’s audited financial statements or other publicly available information.” Previous studies show mixed results for the changes to the audit report and the reduction in the expectation gap (Church et al., 2008; Coram, Mock, Turner, & Gray, 2011; Geiger, 1994; Gray, Turner, Coram, & Mock, 2011; Miller, Reed, & Strawser, 1990; Mock et al., 2013; Turner, Mock, Gray, & Coram, 2010) but provide evidence that the information gap may be reduced when information in the audit report increases (CFA Institute 2010; IAASB 2011; IOSCO 2009).

This study is based on the sociopsychological tradition. We focus on the process underlying the production of the KAMs in the audit report. We use Hogarth’s (1980) theory on information assimilation for judgment and choice decisions. The theory has four stages: information acquisition, processing, output, and feedback. This theory is used to evaluate the processes behind an auditor’s decision to disclose KAMs. We focus on the third stage, the output, and we consider that the decision to disclose a KAM is affected by both the auditor and the environment. Also, based on Einhorn and Hogarth (1981), we assume that the conflict inherent in disclosing a KAM in the audit report (the action to disclose or not to disclose a KAM) is distinct from a conflict in judgment (judgment if an area or transaction is significant or not). The disclosure of a KAM can lead to a greater commitment and may be tied to feelings of regret and responsibility.

To solve the conflict in action, auditors can use avoidance or confrontation (Einhorn & Hogarth, 1981). The use of avoidance means that the auditor will not disclose a KAM or will delay the disclosure. We expect that avoidance happens when the auditors consider that there is less responsibility associated with the effects of not disclosing a KAM than with disclosing one. The use of confrontation means that the auditor uses compensatory strategies that are expressed in the expected utility model where the auditor is risk averse.

The disclosure of KAMs in the audit report is influenced by the auditor’s perceived consequences of the economic trade-off between the probability of being exposed to litigation and the loss of reputation on the one hand and the expected cost of losing a client on the other hand. We also predict that the precision of an accounting standard and the fact that certain entities are more regulated and supervised than others can affect the number of disclosed KAMs.

2.1 Litigation risk and auditors’ loss of reputation

Previous studies show that the disclosure of KAMs can affect the auditor’s litigation risk. Kachelmeier, Schmidt, and Kristen (2017) conclude that the information in KAMs causes attorneys to find auditors less responsible for a misstatement, and this result holds regardless of the inclusion of a resolution paragraph that describes the audit procedures to be performed. They conclude that the results support a “disclaimer effect” from KAM disclosures. Brasel, Marcus, Jonathan, Grenier, and Reffett (2016) also find that users react less negatively when an auditor fails to detect misstatements if a related KAM has been previously disclosed. Gimbar, Hansen, and Ozlanski (2016a) conclude that disclosed KAMs do not affect the auditor’s liability in an environment with an imprecise accounting standard.

Köhler et al. (2016) extend these studies by including not only nonprofessional investors but also investment professionals. Like Backof (2015), they find that KAMs have no communicative value for nonprofessional investors, but for professional investors, a negative KAM (small changes in key assumptions could eventually lead to goodwill impairment) leads to a better assessment of a firm’s
economic situation than a positive KAM (large changes in key assumptions could eventually lead to goodwill impairment).

So, we predict that auditors disclose more KAMs to reduce their liability and maintain their reputation, and these disclosures are particularly relevant for riskier firms. In general, higher leverage involves higher financial risk and, consequently, a higher risk of litigation. As the financial risk of a firm increases, auditors tend to review this firm more thoroughly, which results in increased effort and fees (Nelson, Ronen, & White, 1988). An increase in the auditor’s effort to reduce liability tends to improve the procedures in the audit and therefore the identification of KAMs. On the other hand, as the leverage increases, managers have more incentives to adopt accounting policies that avoid that cost but increase the risk of certain areas. Laitinen and Laitinen (1998) and Reynolds and Francis (2000) find that a higher proportion of external funds significantly decreases the likelihood of receiving an unqualified audit opinion. Further, firms with higher leverage tend to have more difficulty in maintaining funding support from lenders. This difficulty increases their risk, and auditors need to be aware of the firms’ potential failure and shareholder’s litigation that may arise from the discontinuation of operations.

We also predict that auditors tend to disclose more KAMs for more complex firms. In more complex firms, there are more areas of risk that lead to an increase in the number of disclosed KAMs. Following previous studies (Bédard, Hoitash, & Hoitash, 2008; Markanian & Parbonetti, 2007), we use the number of segments as a proxy for complexity. We predict that managers from more diversified firms have more incentives to manage earnings due to agency problems (Berger & Ofek, 1995; Ozbas & Scharfstein, 2010; Rajan, Servaes, & Zingales, 2000). These managers tend to manipulate more earnings at the segment level to hide an inefficient allocation of capital.

These arguments lead to the following hypotheses:

**H1**: There is a positive association between the firms’ risk and the number of disclosed KAMs.

**H1a**: There is a positive association between the firms’ leverage and the number of disclosed KAMs.

**H1b**: There is a positive association between the firms’ number of segments and the number of disclosed KAMs.

### 2.2 Auditor–client relationship

The number of KAMs can also be influenced by the level of the relationship between the auditor and his or her client in terms of tenure and the level of audit fees.

We predict a negative association between the auditors’ tenure and the number of disclosed KAMs. Some studies argue that a longer auditor–client relationship reduces the quality of the audit as managers become more likely to act in favor of management (Tepalagul & Lin, 2015). But, the literature on auditors’ tenure has generally supported a positive association between tenure and the quality of financial reporting (Carcello & Nagy, 2004; Johnson, Khurana, & Reynold, 2002; Myers, Myers, & Omer, 2003). It finds that when the tenure is longer, the financial reporting quality is higher (lower absolute value of unexpected accruals and more persistent accruals) (Johnson et al., 2002; Myers et al., 2003) and that there is a lower likelihood of fraud (Carcello & Nagy, 2004). These two factors can decrease the number of disclosed KAMs. Additionally, the studies of Levinthal and Fichman (1988) and Vanstraelen (2000) show that long-term auditor–client relationships significantly increase the likelihood of unqualified audit reports. Singer and Zhang (2018) find that a longer tenure for auditors leads to fewer corrected misstatements.

Based on the positive association between tenure and financial quality, we state the following hypothesis:
H2a: There is a negative association between the auditor’s tenure and the number of disclosed KAMs.

Regarding the effect of audit fees, the results can conflict. As audit fees are the main source of income for auditors, the level of relevance of a client can determine the incentive that auditors have to compromise their independence. In fact, the auditor’s decision to disclose a KAM can be a choice between maintaining his or her reputation and maintaining a certain level of income. DeAngelo (1981) points out that auditors are more likely to question their independence from important clients. McKeown, Mutchler, and Hopwood (1991) conclude that larger clients benefit from their bargaining power and consequently are less likely to receive a qualified opinion. Reynolds and Francis (2000) investigate the influence of large clients on auditors’ reporting decisions and conclude that economic factors can incentivize auditors to agree with the clients’ decisions in terms of financial reporting so as to retain them as clients. Chung and Kallapur (2003) study the relationships among the importance of customers, nonaudit services, and abnormal accruals and find that the auditors’ independence is compromised by the importance of clients as the amount of corporate governance and the number of industry specialists increase. Cenker and Nagy (2008) also find that auditors are less likely to give up customers who pay high audit fees than they are to give up other customers.

Nevertheless, the literature gives evidence that audit fees may be positively associated with higher perceived risk (Lyon & Maher, 2005). Yang, Yu, Liu, and Wu (2018) finds that audit fees are positively related to firm-specific financial, strategic, and operational risks. In this context, the association between the disclosure of a KAM and the audit fee may be positive.

Based on the arguments for auditors’ independence, we state the following hypothesis:

H2b: There is a negative association between audit fees and the number of disclosed KAMs.

2.3 Precision of accounting standards

We also predict that auditors tend to disclose more KAMs because of more precise (or more rule-based) accounting standards. In fact, we expect that if an accounting standard is less precise (more principle-based), the auditor’s willingness to disclose a KAM decreases. The auditor tends to avoid raising a potential KAM because it could lead to unknown outcomes. So, the auditor may prefer to not disclose a KAM related to a principle-based accounting standard because he or she can argue that KAM may not be worth disclosing. Dugan (2009) concludes that auditors delay loss recognition until concrete information is available due to a strict interpretation of the incurred loss model and earnings management concerns.

Hackenbrack and Nelson (1996) find that auditors use the imprecision in accounting standards to justify an accounting treatment consistent with their incentives. The results show that flexibility in accounting standards can allow auditors to adopt the client’s preferred positions, given the presence of incentives to please the client (Hackenbrack & Nelson, 1996; Mayhew, Schatzberg, & Sevcik, 2001) that therefore reduces the number of disclosed KAM.

Previous studies also show that auditors are more likely to allow aggressive reporting by management under less precise accounting standards (Cohen, Krishnamoorthy, Peytcheva, & Wright, 2013; Jamal & Tan, 2010; Nelson, Elliot, & Tarpley, 2002; Salterio & Koonce, 1997; Segovia, Arnold, & Sutton, 2009; Trompeter, 1994). Trompeter (1994) uses audit partners and varies the precision of accounting standards in a marketable security valuation case. He shows that audit partners allow for more income-increasing interpretations in cases with less precise standards. Lin and Fraser (2008) also argue that the specificity of an accounting standard affects the auditor’s ability to resist pressure from the client. They find that UK auditors perceive that clients tend to obtain preferred treatment when the accounting standard in dispute is less specific. Further, Gimbar et al. (2016a) show that the
 auditor’s liability increases with KAMs when the accounting issue is governed by a precise accounting standard.

Thus, we conclude that under more principle-based accounting standards, auditors tend to disclose fewer KAMs. In fact, facing the subjectivity of the accounting standard, auditors are more willing to accept the client’s preferred accounting treatment.

These arguments lead to the following hypothesis:

\[ H3: \] There is a positive association between the precision of an accounting standard (more rule-based accounting standard) and the number of disclosed KAMs.

2.4 Sector regulation and supervision

The literature identifies some industries as more difficult to audit than others (Hay, Knechel, & Wong, 2006; Simunic, 1980).

Auditors can issue more KAMs for banks than for other firms because of the banks’ greater complexity, opacity, and agency conflicts. They often view banks as opaque due to their complex and interrelated on-balance sheet and off-balance sheet exposures and due to the individual and collective values and risks that are difficult to evaluate by users. This difficulty may enhance the banks’ ability to manage or obscure their financial reporting. The empirical research provides evidence that supports this view. Morgan (2002) shows that banks receive more different bond ratings from different rating agencies than do nonbanks. The increasing length and complexity of their financial reports due to more complex accounting standards leads to the increasing economic complexity of banks. Accounting standard setters have written many complex and lengthy standards for financial instruments and transactions to try to adequately capture their economics (Guay, Samuels, & Taylor, 2016).

However, auditors may find less areas of risk in audits of firms that are more regulated and supervised. Because of the role of regulators and supervisors, auditors need to perform less extensive audit work than do auditors of other firms and, therefore, tend to disclose fewer KAMs. Ghosh, Jarva, and Ryan (2017) show that the regulation and supervision of banks provide auditors with incentives to reduce their effort on the audits of banks.

These arguments lead to the following hypothesis:

\[ H4: \] There is a negative association between the level of regulation and supervision of the entity’s sector and the number of disclosed KAMs.

We use several control variables: size, profitability, proportion of inventories and receivables (inherent risk), and the auditor’s busy season. Studies show that larger firms also have more power to negotiate with auditors in terms of audit fees (Casterella, Francis, Lewis, & Walker, 2004; Huang, Liu, Raghunandan, & Dasaratha, 2007) and that large clients are able to bring more pressure to bear on auditors to disclose fewer KAMs. Therefore, we expect a positive relation between larger firms and KAMs due to the firms’ complexity. We predict a negative association between the firms’ profitability and the number of disclosed KAMs. Profitability is, in general, associated with future viability. Therefore, the firms with higher profitability tend to have less probability of default and tend to receive an unqualified audit opinion (Beasley, Carcello, & Hermanson, 1999; Laitinen & Laitinen, 1998; Loebbecke, Eining, & Willingham, 1989) that decreases the litigation between the auditor and managers. Also, firms with lower profitability tend to use more creative accounting in the preparation of financial statements that increases the probability of a qualified opinion and/or the disclosure of more KAMs. The literature refers to inventory and receivables as two areas that are more difficult to audit and therefore have a higher probability of error. Thus, they require specialized audit procedures (Hay et al., 2006; Simunic, 1980). Because these two parts of the audit process can increase the risk associated with the process, we expect a positive association between the proportion of total assets in
accounts receivable and inventories and the number of KAMs. Further, we also control for the auditor’s busy season. As December 31 is the most common fiscal year-end in Europe (Hay et al., 2006), this busy season may make conducting all the audit procedures difficult that could cause auditors to disclose more KAMs in order to reduce their liability.

3 | RESEARCH DESIGN

Based on the previous literature review, we use the following cross-sectional regression model to examine the association between the entity or the auditors’ characteristics and the number of KAMs in their reports:

\[
\text{KAM} = \beta_0 + \beta_1 \text{LEV} + \beta_2 \text{SEGMENT} + \beta_3 \text{TENURE} + \beta_4 \text{AUDITFEE} \\
+ \beta_5 \text{IRBC} + \beta_6 \text{INDFI} + \beta_7 \text{LNTA} + \beta_8 \text{PROF} + \beta_9 \text{RECVIN} + \beta_{10} \text{FYE} + \epsilon
\]  

(1)

where, KAM is the number of disclosed KAMs at fiscal year-end 2016 divided by the average number of sample KAMs. LEV is computed as the ratio of total debt to total assets. SEGMENT is the natural log of the number of business segments of the firm. TENURE is the natural log of the number of years of the actual duration of the current auditor’s tenure. AUDITFEE is the ratio of audit fees to total assets. The precision of accounting standards is based on the rule-based characteristics (RBC2) score of Mergenthaler (2011), which Donelson, McInnies, and Mergenthaler (2012) have validated, to determine whether an accounting standard is more rule-based or more principle-based.¹ The higher the RBC2 score, the more rule-based characteristics the accounting standard contains.

From the auditor’s report, we identify the accounting standard that is related to each KAM. Based on Mergenthaler (2011), Donelson et al. (2012), and Morais (2016), we attribute RBC2 to each accounting standard applied to the KAM. Then, we compute the IRBC as the ratio between the total RBC2 score obtained for each firm divided by the number of KAMs disclosed. The INDFI is a dummy variable with the value of one for financial institutions and zero otherwise. LNTA is the natural log of the firm’s total assets; RECVIN represents the proportion of total assets in accounts receivable and inventory. PROF is computed as the ratio EBIT to total assets. FYE is a dummy variable that takes the value of one for firms with a fiscal year-end on December 31 and zero otherwise.

We first estimate an OLS. But, as the number of KAMs is a count variable, we also run a Poisson regression to estimate the above model using the number of KAMs (NKAM) as the dependent variable. We also investigate whether the determinants remain the same for firms that have a number of KAMs above the sample average (DAKAM).

4 | SAMPLE AND DATA

We use a sample of firms on the UK’s FTSE 100, France’s CAC 40, or the Netherlands’s AEX 25 that have disclosed KAMs at the 2016 fiscal year-end. We have chosen these three indices because, although the Regulation (EU) No 537/2014 is only effective for financial statements starting on or after June 17, 2016, these three countries were already disclosing KAMs in their audit reports. We hand collect the information about the number of KAMs and the accounting standards associated with these KAMs. Firm-level characteristics such as leverage, total assets, EBIT, audit fees, segments, and tenure are obtained from Datastream for 2015 and 2016.

We collect KAMs for 142 firms. The mean number of KAMs for the firms in our sample is 3.8 with a minimum of 0 and a maximum of 9. There are 81 (57%) firms that disclose a number of KAMs
above the sample average. After deleting firms with missing independent variables, 93 firms remain in our sample. Table 1 provides the data on the sample. Our sample includes large firms as it includes only listed firms in the three countries. Firms in the sample are not highly leveraged with debt representing on average 23% of their total assets. Financial institutions represent 20% of our sample.

We collected 577 KAMs for our sample firms. KAMs associated with accounting standards represent 92.7% of the total number of KAMs disclosed. The remainder are related to other risk areas such as IT (38%), judgments (17%), and internal control (12%). With regard to KAMs associated with accounting standard IAS 36, the impairment of assets is the main risk area with 102 KAMs that are disclosed (19%). The major concern of auditors is related to the impairment of goodwill (14% of accounting standard KAMs). For other accounting, the relevant weights are IAS 18, revenue recognition (14%); IAS 37, provisions, contingent liabilities, and contingent assets (12%); and IAS 12, income taxes. The RBC2 for these accounting standards is 3.87, 3.01, 3.25, and −2.37, respectively. It varies between −3.49 (IAS 7—Statement of Cash Flows) and 11.98 (IAS 39—Financial Instruments: Recognition and Measurement) with a median of −0.31.

5 | EMPIRICAL RESULTS

Table 2 provides the results of our model to determine the factors that influence the number of KAMs that auditors disclose.

With regard to our first hypothesis that relates the firm’s risk to the number of KAMs, we only find that this association is marginally positive when using the number of segments as a proxy for complexity and risk. In fact, the coefficient for the firms’ leverage is not statistically significant, and the coefficient for the number of segments ($\beta_2$) is positive and statistically significant at the 10% level.

The number of business segments is a proxy for the firms’ complexity (Hay et al., 2006). The more complex a client, the riskier auditing the firm is. With the aim to reduce his or her liability and maintain their reputation, the auditor tends to disclose more KAMs in firms with a higher number of business segments. Contrary to our expectation, the firms’ leverage does not influence the number of KAMs. This result can be related to the fact that our sample only includes large listed firms that are not highly leveraged.

Considering the auditor–client relationship, we find that the auditor’s tenure does not influence his or her behavior regarding the number of disclosed KAMs as the coefficient for the variable TENURE ($\beta_3$) is not statistically significant.

However, and contrary to our hypothesis H2b, we conclude that the higher the audit fees the greater the number of KAMs received by the firms. The coefficient for AUDITFEES is positive and statistically significant at the 1% level. As some authors argue, this result may be because higher audit fees are associated with the client’s higher risk and complexity (Lyon & Maher, 2005; Simunic & Stein, 1996). Therefore, we conclude that the litigation risk overlaps the effect of the auditor–client dependence that indicates a negative association between audit fees and the number of KAMs.

In line with our third hypothesis, we find that auditors tend to disclose more KAMs under rule-based accounting standards. The coefficient for IRBC is positive ($\beta_5 = 0.043$) and statistically significant at the 10% level. In line with Dugan (2009), this result indicates that under a less precise accounting standard, auditors might find it easier to justify not disclosing a KAM. On the other hand, the literature shows that the auditor’s liability increases with the level of precision in the accounting standards (Gimbar et al., 2016a) that might incentivize auditors to disclose more KAMs because of more rule-based accounting standards.
### Panel A: Descriptive statistics for continuous variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAM</td>
<td>0.94</td>
<td>1.04</td>
<td>0.56</td>
<td>0.00</td>
<td>2.34</td>
</tr>
<tr>
<td>NKAM</td>
<td>3.84</td>
<td>4.00</td>
<td>2.03</td>
<td>0.00</td>
<td>9.00</td>
</tr>
<tr>
<td>LEV</td>
<td>0.23</td>
<td>0.22</td>
<td>0.15</td>
<td>0.00</td>
<td>0.69</td>
</tr>
<tr>
<td>SEG</td>
<td>4.53</td>
<td>5.00</td>
<td>2.72</td>
<td>0.00</td>
<td>10.00</td>
</tr>
<tr>
<td>TENURE</td>
<td>5.01</td>
<td>3.00</td>
<td>4.03</td>
<td>0.00</td>
<td>15.00</td>
</tr>
<tr>
<td>AUDITFEE (%)</td>
<td>0.03</td>
<td>0.02</td>
<td>0.03</td>
<td>0.00</td>
<td>0.20</td>
</tr>
<tr>
<td>IRBC</td>
<td>2.81</td>
<td>2.56</td>
<td>1.66</td>
<td>−2.26</td>
<td>7.46</td>
</tr>
<tr>
<td>LNTA</td>
<td>16.91</td>
<td>16.73</td>
<td>1.91</td>
<td>4.24</td>
<td>21.46</td>
</tr>
<tr>
<td>RECINV</td>
<td>0.21</td>
<td>0.17</td>
<td>0.17</td>
<td>0.00</td>
<td>0.92</td>
</tr>
<tr>
<td>LNTA</td>
<td>16.91</td>
<td>16.73</td>
<td>1.91</td>
<td>4.24</td>
<td>21.46</td>
</tr>
<tr>
<td>PROF</td>
<td>0.063</td>
<td>0.061</td>
<td>0.07</td>
<td>−0.26</td>
<td>0.37</td>
</tr>
</tbody>
</table>

### Panel B: Mean, median, and frequencies for dichotomous variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>No. Firms coded = 1</th>
<th>No. Firms coded = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAKAM</td>
<td>0.57</td>
<td>1</td>
<td>81</td>
<td>61</td>
</tr>
<tr>
<td>FYE</td>
<td>0.82</td>
<td>1</td>
<td>117</td>
<td>25</td>
</tr>
<tr>
<td>INDFI</td>
<td>0.20</td>
<td>0</td>
<td>28</td>
<td>114</td>
</tr>
</tbody>
</table>

### Panel C: KAMs by Accounting Standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Mean (%)</th>
<th>Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAS 1—Presentation of Financial Statements</td>
<td>3.0</td>
<td>16</td>
</tr>
<tr>
<td>IAS 2—Inventories</td>
<td>3.2</td>
<td>17</td>
</tr>
<tr>
<td>IAS 12—Income Taxes</td>
<td>11.0</td>
<td>59</td>
</tr>
<tr>
<td>IAS 16—Property, Plant and Equipment</td>
<td>4.1</td>
<td>22</td>
</tr>
<tr>
<td>IAS 17—Leases</td>
<td>0.4</td>
<td>2</td>
</tr>
<tr>
<td>IAS 18—Revenue</td>
<td>14.2</td>
<td>76</td>
</tr>
<tr>
<td>IAS 19—Employee Benefits</td>
<td>7.5</td>
<td>40</td>
</tr>
<tr>
<td>IAS 23—Borrowing Costs</td>
<td>0.6</td>
<td>3</td>
</tr>
<tr>
<td>IAS 36—Impairment of Assets</td>
<td>19.1</td>
<td>102</td>
</tr>
<tr>
<td>IAS 37—Provisions, Contingent Liabilities and Contingent Assets</td>
<td>12.1</td>
<td>65</td>
</tr>
<tr>
<td>IAS 38—Intangible Assets</td>
<td>3.9</td>
<td>21</td>
</tr>
<tr>
<td>IAS 39—Financial Instruments: Recognition and Measurement</td>
<td>9.2</td>
<td>49</td>
</tr>
<tr>
<td>IAS 40—Investment Property</td>
<td>0.7</td>
<td>4</td>
</tr>
<tr>
<td>IFRS 3—Business Combinations</td>
<td>6.4</td>
<td>34</td>
</tr>
<tr>
<td>IFRS 4—Insurance Contracts</td>
<td>2.8</td>
<td>15</td>
</tr>
</tbody>
</table>

(continues)
Finally, in line with our last hypothesis, the results show that auditors disclose less KAMs for financial institutions. Although auditors may disclose more KAMs in banks due to the complexity and opacity of this industry, the fact that the industry is very well regulated and supervised may lead them to find less areas of risk. In regulated industries, the high level of required disclosure and monitoring can lead auditors to have lower incentives to disclose KAMs (Dunn & Mayhew, 2004).

Regarding the control variables, auditors of large firms disclose more KAMs as the coefficient for LNTA is positive ($\beta_7 = 0.136$) and statistically significant at the 1% level. This finding relates to large firms being more complex, requiring more work from the auditors, and posing a greater risk to the auditors’ liability. This finding is robust using the natural log of sales as an explanatory variable to measure firm size.

The results also provide evidence of a negative relation between profitability and the number of disclosed KAMs. Firms with lower profitability present a higher risk of failure and therefore auditors may need to extend the scope of their work and disclose more KAMs.

In contrast, the fiscal year-end (“busy season”) does not have an effect on the number of disclosed KAMs (Hay et al., 2006). The fact that December 31 is the most common fiscal year-end and therefore is considered the auditors’ busy season does not seem to influence auditors regarding the disclosure of KAMs.

Firms with extensive inventory and receivables, which are areas viewed as being difficult to audit, increase the client’s inherent risk (Simunic, 1980; Stice, 1991) but do not seem to influence the disclosure of KAMs.

We also observe that the UK and the Netherlands disclose more KAMs than France, which suggests that auditors’ judgments and decisions on disclosing KAMs might be a function of culture and institutional factors (Nolder & Riley, 2014).

As some firms have the fiscal year-ends before December 31, 2016, we estimate the above regression using the simple average of 2015 and 2016 for all independent variables. All results remain similar.

As sensitive analyses, we also perform additional tests in order to investigate the influence of the different determinants presented above on the number of KAMs disclosed in the audit report.
First, as the number of KAMs is a count variable, we estimate the model using a Poisson regression. Table 3 provides the results from this regression.

All the conclusions remain unchanged. The coefficient for LNTA is 0.133, which means that an increase of 1% in the firm size is associated with 13% in the number of KAMs disclosed in the audit report. We assess the fit of the model through the goodness-of-fit chi-squared test and find the test is not statistically significant, which indicates the model has good fit.

We also use a dummy (DAKAM) as the dependent variable in a logit regression that equals one for firms with a number of KAMs above the sample average and zero otherwise. The findings are presented in Table 4.

We also conclude that the number of business segments, size, audit fees, and the industry are all factors that influence the probability of the number of KAMs being higher than the sample average.

### Table 2: Determinants of the number of KAMs—regression results

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Predicted Sign</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>$\beta_0$</td>
<td>?</td>
<td>$-1.935^{**}$</td>
<td>0.021</td>
</tr>
<tr>
<td>LEV</td>
<td>$\beta_1$</td>
<td>+</td>
<td>$-0.257$</td>
<td>0.254</td>
</tr>
<tr>
<td>SEG</td>
<td>$\beta_2$</td>
<td>+</td>
<td>0.086*</td>
<td>0.087</td>
</tr>
<tr>
<td>TENURE</td>
<td>$\beta_3$</td>
<td>-</td>
<td>$-0.016$</td>
<td>0.718</td>
</tr>
<tr>
<td>AUDITFEE</td>
<td>$\beta_4$</td>
<td>-</td>
<td>$4.768^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>IRBC</td>
<td>$\beta_5$</td>
<td>+</td>
<td>0.043*</td>
<td>0.075</td>
</tr>
<tr>
<td>INDFI</td>
<td>$\beta_6$</td>
<td>-</td>
<td>$-0.382^{***}$</td>
<td>0.003</td>
</tr>
<tr>
<td>LNTA</td>
<td>$\beta_7$</td>
<td>+</td>
<td>$0.136^{***}$</td>
<td>0.003</td>
</tr>
<tr>
<td>RECVN</td>
<td>$\beta_8$</td>
<td>+</td>
<td>0.534**</td>
<td>0.036</td>
</tr>
<tr>
<td>PROF</td>
<td>$\beta_9$</td>
<td>-</td>
<td>$-2.052^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>FYE</td>
<td>$\beta_{10}$</td>
<td>?</td>
<td>$-0.074$</td>
<td>0.445</td>
</tr>
<tr>
<td>DUK</td>
<td>$\beta_{11}$</td>
<td>?</td>
<td>0.619***</td>
<td>0.000</td>
</tr>
<tr>
<td>DNTHL</td>
<td>$\beta_{12}$</td>
<td>?</td>
<td>0.502***</td>
<td>0.001</td>
</tr>
</tbody>
</table>

No. of Observations: 93

Adj-$R^2$: 57.67%

This table presents estimates of the coefficients for the following OLS: $KAM = \beta_0 + \beta_1LEV + \beta_2SEGMENT + \beta_3TENURE + \beta_4AUDITFEE + \beta_5IRBC + \beta_6LNTA + \beta_7PROF + \beta_8RECVN + \beta_9FYE + \beta_{10}INDFI + \varepsilon$

$KAM =$ number of KAMs disclosed at fiscal year-end 2016/average of sample KAMs; $LEV =$ ratio of total debt to total assets; $SEGMENT =$ natural log of the number of business segments; $TENURE =$ natural log of the number of years of the actual duration of the current auditor tenure; $AUDITFEE =$ ratio of audit fee to total assets; $IRBC =$ ratio between the total RBC2 score obtained for each firm divided by the number of KAMs disclosed. We define precision of accounting standards based on the rule-based characteristics (RBC2) score of Mergenthaler (2011) and Donelson et al. (2012); $LNTA =$ natural log of firm’s total assets; $RECVN =$ proportion of total assets in accounts receivable and inventory; $PROF =$ EBIT divided by total assets; $FYE =$ one for firms with fiscal year-end on December 31 and zero otherwise; $INDFI =$ one for financial institutions and zero otherwise; $DUK =$ one if the firm is from the UK and zero otherwise; $DNTHL =$ one if the firm is from the Netherland and zero otherwise. Significance at ***1%, **5%, and *10% level.

First, as the number of KAMs is a count variable, we estimate the model using a Poisson regression. Table 3 provides the results from this regression.

All the conclusions remain unchanged. The coefficient for LNTA is 0.133, which means that an increase of 1% in the firm size is associated with 13% in the number of KAMs disclosed in the audit report. We assess the fit of the model through the goodness-of-fit chi-squared test and find the test is not statistically significant, which indicates the model has good fit.

We also use a dummy (DAKAM) as the dependent variable in a logit regression that equals one for firms with a number of KAMs above the sample average and zero otherwise. The findings are presented in Table 4.

We also conclude that the number of business segments, size, audit fees, and the industry are all factors that influence the probability of the number of KAMs being higher than the sample average.

### 6 CONCLUSIONS

A change in the way auditors report their opinions about financial statements creates an opportunity to investigate what factors move auditors to disclose more or less KAMs. KAMs are areas that the
auditor considers are significant risks or require significant judgment and must be identified in the new model of the audit report. We expect that auditors of firms with higher risk disclose more KAMs. We also anticipate that the auditor–client relationship and the precision of the accounting standards can influence the number of disclosed KAMs. To test our hypotheses, we use a sample of firms on the FTSE 100, CAC 40, or AEX 25 that disclosed KAMs at the 2016 fiscal year-end. Our results show that there is a positive association between the number of business segments, audit fees, precision of accounting standards, and size; while the association is negative for financial institutions and profitability. There is also evidence that culture and institutional factors may influence auditors’ judgments and decisions on disclosing KAMs.

This study contributes to the audit literature in several ways. First, it is the first, as far as we know, to provide an analysis of the determinants of the KAMs’ disclosure. Previous studies about KAMs identify the potential consequences of their disclosure. Second, the findings are useful to standard setters and regulators by highlighting the factors that influence the identification of a KAM. Further, for financial managers, it gives a better understanding of the factors that influence the processes behind the auditors’ decisions to disclose KAMs.

Our study is subject to limitations. In our sample, we include firms that in prior years adopted an audit report that included a description of the KAMs. So, our sample does not include first-time

TABLE 3  Determinants of the number of KAMs—Poisson regression results

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Coefficient</th>
<th>Predicted Sign</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>$\beta_0$</td>
<td>$\times$</td>
<td>$-1.606^{**}$</td>
<td>0.015</td>
</tr>
<tr>
<td>LEV</td>
<td>$\beta_1$</td>
<td>$\times$</td>
<td>$-0.322$</td>
<td>0.155</td>
</tr>
<tr>
<td>SEG</td>
<td>$\beta_2$</td>
<td>$\times$</td>
<td>$0.091^{**}$</td>
<td>0.032</td>
</tr>
<tr>
<td>TENURE</td>
<td>$\beta_3$</td>
<td>$\times$</td>
<td>$-0.210$</td>
<td>0.586</td>
</tr>
<tr>
<td>AUDITFEE</td>
<td>$\beta_4$</td>
<td>$\times$</td>
<td>$4.761^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>IRBC</td>
<td>$\beta_5$</td>
<td>$\times$</td>
<td>$0.041^{*}$</td>
<td>0.093</td>
</tr>
<tr>
<td>INDFI</td>
<td>$\beta_6$</td>
<td>$\times$</td>
<td>$-0.471^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>LNTA</td>
<td>$\beta_7$</td>
<td>$\times$</td>
<td>$0.133^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>RECEINV</td>
<td>$\beta_8$</td>
<td>$\times$</td>
<td>$0.478^{*}$</td>
<td>0.063</td>
</tr>
<tr>
<td>PROF</td>
<td>$\beta_9$</td>
<td>$\times$</td>
<td>$-1.683^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>FYE</td>
<td>$\beta_{10}$</td>
<td>$\times$</td>
<td>$-0.077$</td>
<td>0.353</td>
</tr>
<tr>
<td>DUK</td>
<td>$\beta_{11}$</td>
<td>$\times$</td>
<td>$0.643^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>DNTHL</td>
<td>$\beta_{12}$</td>
<td>$\times$</td>
<td>$0.572^{***}$</td>
<td>0.000</td>
</tr>
<tr>
<td>No. of Observations</td>
<td></td>
<td></td>
<td></td>
<td>93</td>
</tr>
<tr>
<td>Pseudo-$R^2$</td>
<td></td>
<td></td>
<td></td>
<td>11.38%</td>
</tr>
</tbody>
</table>

This table presents estimates of coefficients for the following OLS: $NKAM = \beta_0 + \beta_1LEV + \beta_2SEGMENT + \beta_3TENURE + \beta_4AUDITFEE + \beta_5IRBC + \beta_6LNTA + \beta_7PROF + \beta_8RECEINV + \beta_9FYE + \beta_{10}INDFI + \varepsilon$

$NKAM=$ number of KAMs disclosed at fiscal year-end 2016; $LEV=$ ratio of total debt to total assets; $SEGMENT=$ natural log of the number of business segments; $TENURE=$ natural log of the number of years of the actual duration of the current auditor tenure; $AUDITFEE=$ ratio of audit fee to total assets; $IRBC=$ ratio between the total RBC2 score obtained for each firm divided by the number of KAMs disclosed. We define precision of accounting standards based on the rule-based characteristics (RBC2) score of Mergenthaler (2011) and Donelson et al. (2012); $LNTA=$ natural log of firm’s total assets; $RECEINV=$ proportion of total assets in accounts receivable and inventory; $PROF=$ EBIT divided by total assets; $FYE=$ one for firms with fiscal year-end on December 31 and zero otherwise; $INDFI=$ one for financial institutions and zero otherwise; $DUK=$ one if the firm is from the UK and zero otherwise; $DNTHL=$ one if the firm is from the Netherlands and zero otherwise. Significance at ***1%, **5%, and *10% level.
adopters. The effect of culture and institutional factors on auditors’ behavior regarding the disclosure of KAMs is a topic of interest for future research.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the helpful comments and suggestions provided by the editors, two anonymous reviewers, and the participants of EARNet Symposium (Louvain) and 21st Annual Financial Reporting and Business Communication Conference, British Accounting & Finance Association (BAFA), and University of Durham. Financial support from FCT—Fundação para a Ciencia e Tecnologia (Portugal), national funding through research grant UID/SOC/04521/2013, is gratefully acknowledged.

ENDNOTE

1 RBC2 is a continuous metric that considers the following factors in order to determine the precision of each accounting standard: high level of detail as the total number of words in each accounting standard; large volumes of implementation guidance as the total number of SIC/IFRIC and application guidance for each accounting standard;
bright-line thresholds as the total number of bright-line thresholds in each accounting standard; and exceptions as the total number of exceptions in each accounting standard (Donelson et al., 2012; Mergenthaler, 2011; Morais, 2016).

REFERENCES


