

# Associations between the financial and industry expertise of audit committee members and key audit matters within related audit reports

Financial and  
industry  
expertise

185

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## Abstract

**Purpose** – The purpose of this paper is to focus on audit committees' financial and industry expertise (FIE) and their impact on the readability of key audit matters (KAMs).

**Design/methodology/approach** – Based on an agency-theoretical framework, analyses are conducted of data from a sample of UK premium listed companies for the fiscal years 2014–2017 (i.e. 1,319 firm-year observations). Correlation and regression analyses are conducted to evaluate possible associations between FIE in audit committees and KAM readability. The author relies on popular readability measures (Flesch Reading Ease and Fog Index).

**Findings** – Audit committees' FIE and KAM readability are positively connected. Combined FIE also has a stronger effect than either financial or industry expertise alone.

**Research limitations/implications** – Companies, regulators and researchers could be significantly affected by the finding that audit committees' FIE can have a considerable impact on KAM readability.

**Originality/value** – The analysis of the link between audit committees' FIE and KAM readability makes a contribution to prior empirical research on KAM.

**Keywords** Audit committees, External audit, Industry expertise, Financial expertise, Key audit matters, Auditor reporting

**Paper type** Research paper

## Introduction

After the 2008–2009 financial crisis, stakeholders widely criticised public interest entities' (PIEs') financial reporting and external auditors' reporting. An increased length and complexity of annual reports and audit reports implies a high risk of information overload and impaired decision usefulness for the capital market. Information asymmetries and conflicts of interests among the board of directors, auditors and capital market lead to an expectation gap (Bédard *et al.*, 2016).

As a reaction to this huge stakeholder concern, the UK Financial Reporting Council (FRC) implemented new disclosure rules of key audit matters (KAMs) to the audit report for companies with a premium listing of equity shares on the London Stock Exchange (LSE)[1] main market with fiscal years beginning on or after 1 October 2012 (FRC, 2013). Since that moment, audit reports must contain company-specific information about: the most significant risks of material misstatement; an explanation of how the auditor applied materiality when planning and performing the audit, including explicitly stating the materiality level used; and an overview of the audit scope and, in particular, how the scope selected was responsive to the risks included in the audit report (ICAEW, 2017)[2]. This study relates to the impact of audit committees' financial and industry expertise on KAM readability and finds positive results.



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Given the complexity of modern business transactions and their possible legal bases, we expect that the language employed in order to explain KAM might itself be complex and not easy to communicate or easily convey. On that basis, “the language used to describe KAMs may be difficult to understand, particularly for unsophisticated users” (Smith, 2016). Thus, the readability of KAM disclosures is a basic requirement for the decision usefulness of financial accounting and external audits in view of different stakeholder groups.

In line with this increased regulation and practical relevance, empirical research on KAM disclosures is growing (Bédard *et al.*, 2016). But only a few countries, like the UK, have had longer experience with this new piece of information in the audit report. With regard to the UK setting, recent archival studies only concentrate on the consequences of KAM disclosures (e.g. accounting quality), with heterogeneous results (e.g. Gutierrez *et al.*, 2018; Lennox *et al.*, 2017). With one exception (Velte, 2018a; gender diversity), no study analyses the impact of selected board composition variables as determinants of KAM disclosures. Former audit committees’ financial and industry expertise (FIE) studies include a variety of variables of financial reporting quality and audit quality (e.g. Lary and Taylor, 2012) and also include readability measures (e.g. Velte, 2018b). We rely on an agency-theoretical framework and assume that audit committees’ responsibility for an appropriate audit quality also includes auditor reporting behaviour.

We argue that FIE reflects increased audit committee effectiveness and better cooperation with the external auditor. Since the audit committee is responsible for the audit engagement, audit committee effectiveness should lead to more readable KAM disclosures in the audit report in line with shareholders’ interests. We find that audit committees’ FIE positively contributes to KAM readability. The link between FIE and KAM readability is also more pronounced with a combined FIE. In our robustness checks, we modify our dependent and independent variables in our regression models and come to similar results.

Our study contributes to the call for more empirical research on KAM disclosures (Bédard *et al.*, 2016) and readability measures in financial accounting and auditing (Li, 2008). We chose the UK setting in view of their longer experience with KAM disclosures and their reliance on audit committee expertise in the UK Corporate Governance Code. We have made several contributions to previous research (Velte, 2018a, b). First, the paper provides new evidence of a positive effect of audit committees’ FIE on KAM readability. Second, our results can be highly relevant for standard setters and market regulators because KAM can be influenced by audit committees. Third, our research fits well into the recent empirical corporate governance research in other countries by increasing the measures and determinants of KAM disclosures. We are aware of the fact that audit committees may only indirectly influence the KAM disclosures in the audit report, as the external auditor is responsible for it. This circumstance is also related to prior empirical studies on the impact of audit committees on audit quality measures (e.g. audit report lag). Thus, external auditor variables (e.g. Big Four) might be more useful in explaining a direct impact on KAM[3].

The rest of the paper is organised as follows. In the following section, we review the literature on FIE and KAM disclosure, introduce the UK institutional setting and develop our main hypotheses. Then, we explain our research design, the descriptive statistics and the results of correlation and regression analyses. We also run sensitivity tests to check the robustness of our study. A summary of our paper, a description of the limitations of our study and further research development follows.

#### *Agency theory, literature review and hypotheses*

With regard to different theoretical approaches, the link between audit committee composition and audit quality can be either positive or negative (Beasley *et al.*, 2009; Velte, 2018a). It depends on the decision to rely on economic aspects (e.g. principal-agency theory) which assume a positive relationship, or on sociopolitical aspects (e.g. legitimacy theory)

which assume a negative connection. As the principal-agent theory (Jensen and Meckling, 1976) is the most important theory in our related studies, we concentrate on this theory. KAM disclosures decrease information asymmetries and conflicts of interests between management and shareholders. In order to guarantee appropriate audit reporting, audit committees are classified as one of the key monitoring elements of internal corporate governance (DeFond and Zhang, 2014). According to principal-agent theory, FIE contributes to audit committee effectiveness and motivates the external auditor to increase the readability of the audit report. In this context, shareholders assume a positive impact on audit quality through increased KAM readability.

Literature reviews on empirical audit committee research (e.g. Brennan and Kirwan, 2015; Velte, 2017) and intensive database selection indicate that determinants of KAM disclosure are neglected so far. As KAM disclosure is closely connected with audit quality, we portray the results on related audit quality studies. Financial expertise on the audit committee represents one of the key determinants of audit committee effectiveness in empirical research during the last two decades (Cohen *et al.*, 2014). Industry expertise on the audit committee has gained more importance only in recent years (Cohen *et al.*, 2014).

According to agency theory, shareholders demand careful monitoring of the financial reporting by the audit committee and the auditor. Not only the shareholders, but also the audit committee demand a careful external audit because the external auditor supports the audit committee in their monitoring duties. FIE can be classified as a complementary composition variable, as it strengthens the knowledge of the audit committee in supervising the financial reporting process and the external auditor. Thus, we assume that possible agency conflicts between management and shareholders which arise from conflicts of interests and material information asymmetries may be decreased by implementing financial and industry experts on the audit committees on the one hand and a readable KAM section in the audit report on the other hand.

As audit quality represents a trust-based good and cannot be measured directly, a variety of proxies are commonly used in empirical research (DeFond and Zhang, 2014). A first part of the empirical research analyses the impact of audit committee composition on (non) audit fees. In this context, Hoitash and Hoitash (2009) find a positive significant relationship between audit committees' financial expertise and audit quality.

A second subcategory that measures external audit quality deals with the auditor-client negotiation through the audit committee. Agency theory assumes that management always demands an unmodified opinion, even if the firm is in financial distress or the earnings quality is poor, and that management will prevent the reappointment of the existing audit firm and prefer the appointment of an external auditor of lower quality (opinion shopping). Cassell *et al.* (2012) state that the FIE on the audit committee positively contributes to external auditor support with regard to accounting conflicts with management.

More recently, Velte (2018b) analyses the impact of financial and sustainability expertise on the audit committee and the readability of integrated reporting and finds a positive relationship. The duty of the audit committee is to supervise the integrated reporting process and demand a clear focus on the materiality principle. The materiality principle is also of utmost importance in the KAM disclosure process.

In the context of KAM disclosures, FIE as a possible determinant has not been included in previous empirical-quantitative research. Instead, current studies focus on the consequences of KAM disclosures, for example users' decision-making when evaluating financial statements (Christensen *et al.*, 2014; Kachelmeier *et al.*, 2017) or auditor liability (Backof *et al.*, 2017) with mixed results. Three archival studies also showed mixed findings on the value of additional disclosures in the UK (Lennox *et al.*, 2017; Gutierrez *et al.*, 2018). Velte (2018a) is the only study that addresses audit committee composition and KAM readability for the UK. The study found that firms with a higher percentage of women on

audit committees as an indicator of audit committee effectiveness have higher readability of KAM disclosures.

In line with agency theory, we assume that the possibility of decreasing agency conflicts between management and shareholders is dependent on strict monitoring by the audit committee in the UK one-tier system. In line with former empirical results (Cassell *et al.*, 2012; Hoitash and Hoitash, 2009; Velte, 2018a, b), we assume that audit committees' financial expertise will contribute to better cooperation with the external auditor and an increased motivation for decision useful auditor reporting. According to the UK Corporate Governance Code (FRC, 2018), the audit committee should have at least one member with financial expertise. Financial expertise means that the audit committee member is familiar with financial accounting and auditing standards. As shareholders demand a readable KAM section in the audit report, the audit committee's financial expertise will lead to lower information asymmetry and fewer conflicts of interest. We state the following:

*H1.* Audit committees' financial expertise and KAM readability are positively connected.

A close cooperation between audit committee and external auditor does not only require financial experts, but also industry experts on the audit committee. The UK Corporate Governance Code (FRC, 2018) states that the audit committee "as a whole" shall have competence relevant to the sector in which the company operates. The term "as a whole" does not request a special minimum of members, but ensures that the overall audit committee must have an adequate knowledge about the branch of industry of their company. Many audit committees in PIEs also choose an industry specialist as audit firm. Without any industry expertise on the audit committee, the audit committee would not be able to discuss industry-specific KAM disclosure "at eye level". Thus, we assume the following link:

*H2.* Audit committees' industry expertise and KAM readability are positively connected.

As the audit committee and the external auditor have to discuss the audit focal points, which can be extracted for KAM disclosure, we assume that a combined FIE on the audit committee are more useful in comparison to single expertise in one area. FIE represent complementary composition variables of the audit committee and lead to better audit committee knowledge and effectiveness. With reference to stricter monitoring of financial reporting and external audits as well as decision useful auditor disclosure due to FIE on the audit committee, the following hypothesis is proposed:

*H3.* The association between audit committees' combined FIE and KAM readability is stronger in comparison to single financial or industry expertise.

## Data and methodology

### *Sample selection*

Our sample covers firms in the premium listing on the LSE main market from 2014 to 2017. As significant changes to auditor reporting were effective for fiscal years beginning on or after 1 October 2012 (i.e. fiscal years ending on or after September 2013), we chose this time period. We start with our analysis one year after the first implementation of the new regulation to include the first learning effects of the external auditors. The companies included in our sample are linked with the highest standards of transparent disclosure within the LSE in the UK. Researching board composition as the FIE of premium-listed companies could have a signalling effect for other companies listed on the LSE, since these companies are covered most intensely by investors. We exclude financial firms from our sample, due to the additional auditing and corporate governance requirements. The final sample of 1,319 firm-year observations is shown in Table I. The initial sample for the

business years and the reductions regarding financial institutions and missing data led to the final sample.

*Main variables*

To conduct our multiple regression analysis as a cross-sectional study (2014 to 2017), we provide our relevant data both on the content analysis and on an archival basis. Financial and industry experts on the audit committee represented our independent variables, and the readability of KAM disclosures represented our dependent variable. Data on corporate governance were hand collected from status, annual, integrated, sustainability and corporate governance reports. Information on KAM disclosures was collected from audit reports. Most of our control variables were chosen according to archival database (Thomson Reuters Datastream or AssetFour).

$KAM_i$  was our dependent variable and represented the readability of KAM disclosures in the audit report. We analysed the readability of the KAM section of the auditor’s report, which includes a clear and concise wording and contributes to the stakeholders’ needs. We used the Flesch reading ease formula, which analyses how easy or difficult an English text is to read. The formula for the Flesch reading ease score is as follows (Li, 2008):

$$206.835 - 1.015 \left( \frac{\text{Total words}}{\text{Total sentences}} \right) - 84.6 \left( \frac{\text{Total syllables}}{\text{Total words}} \right).$$

We transformed the Flesch reading ease score into our KAM disclosure score as shown in Table II. Seven scores, from one to seven, were linked to specific limits of the index from 0 to 100. The range goes from very difficult to very easy to read. Higher Flesch reading ease scores indicate that the KAM disclosures were easier to read.

The independent variables were the percentage of financial experts (*FE*) and industry experts (*IE*) and the combination of financial and industry experts (*FE\_IE*) in audit committees. Information on FIE was generated by content analysis of committee members’ curricula vitae (CVs) published on firms’ websites, including both academic and practical experience. As the disclosure of committee members’ CVs is not mandatory for the companies under study, the level of FIE could not be analysed in the case of missing CVs. Thus, an unknown background was coded as zero. Table III presents the included criteria of audit committees’ expertise.

We included several control variables that have frequently been used in recent corporate governance and audit research. With regard to firm-specific variables, *SIZE* was measured as

	2014	2015	2016	2017
UK companies on the LSE main market with premium listing	694	690	689	693
Financial institutions and missing data	-361	-363	-364	-359
Final sample	333	327	325	334

**Table I.**  
Survey sample

Flesch reading ease	Notes	Score
0.0–30.0	Very difficult to read	1
30.0–50.0	Difficult to read	2
50.0–60.0	Fairly difficult to read	3
60.0–70.0	Plain English	4
70.0–80.0	Fairly easy to read	5
80.0–90.0	Easy to read	6
90.0–100.0	Very easy to read	7

**Table II.**  
Flesch reading ease score

the natural logarithm of total assets. Like former studies (Lennox *et al.*, 2017; Velte, 2018a), we expected a positive link in KAM disclosures because firm size and audit firm size are often positively linked and suggest increased audit resources. We also included the variable *ROA* (return on assets) as the net income before extraordinary items relative to total assets, as an accounting-based performance measure. We also assumed that firm performance had a positive relationship with KAM disclosures. *LEV* as the relation between long-term debt and total assets was included as a control variable in our model. We assumed a positive impact of leverage on firm risks, leading to an increased degree of KAM disclosures. The variable *CURR* represented the relationship between current assets and total assets and was linked with earnings management. As earnings management was connected to greater audit risk, we assumed a positive impact on KAM. Other risk factors that may be positively related to KAM disclosures are *NSEG* (natural logarithm of the number of business segments) and *FORSALES* (sales outside the UK relative to total sales). We also integrated auditor characteristics that may have influenced their KAM disclosures. The first variable in this context was *BIG*, a dummy variable if the company was audited by a Big Four audit firm (Deloitte, *EY*, *KPMG* or *PwC*). Because Big Four audit firms have more resources and industry-specific knowledge compared to small and medium-sized audit firms, we assumed a positive impact on KAM. The variable *ROT* indicated whether the firm had changed their audit firm in the current fiscal year. Regarding learning effects of longer audit tenure, we expected a negative relationship between *ROT* and KAM. The variable *GCO* indicated whether the audit report included a modified going-concern opinion (*GCO*). We assumed a positive relationship between *GCO* and KAM, as *GCO* may lead to an increased firm risk and audit risk. Finally, we controlled for a cross-listing of the company on the US-American capital market (NYSE, AMEX or NASDAQ) as *USLIST*, because shareholder pressure on the US-American capital market in reliable financial accounting and audit is higher in comparison to that of the UK. We also controlled for industry (*IND*) and assumed that the branch of industry would influence auditor reporting.

We further included other corporate governance controls commonly used in this research field (see Haji and Anifowose, 2016). *ACMEET* represented the annual number of audit committee meetings. *ACSIZE* was classified by the logarithm of the size of audit committees. *INDP* represented the percentage of independent members on audit committees. Audit committee size, independence and meeting frequency can be both positively or negatively linked to the audit quality. The relationship's direction depends on the research model's reliance on economics-related (positive) or sociopolitical theories (negative). In line with our main hypotheses, we focussed on economics-related theories (agency theory) and assumed a positive link between these corporate governance variables and the readability of KAM disclosures, because of the increased effectiveness of audit committees. A summary is presented in Table IV. We distinguished between the dependent variable, the independent variable and the control variables. The variables and their explanations are also described.

**Table III.**  
Audit committees'  
FIE measures

Coding	Financial expertise	Industry expertise
2	CEO/CFO in other companies, former CPA, PhD or Professor of Finance/Accounting or Previously worked for big four audit firms or former CEO or CFO or Finance or accounting related accounting experience	At least five years prior work experience in company's operating industry or At least ten years' experience in current company
1	Other qualifications	Prior work experience in another industry
0	Unknown background	Unknown background

Table IV.  
Variables of the study

	Explanation
<i>Dependent variables</i>	
<i>KAM</i>	Degree of KAM disclosures measured by the readability of the KAM disclosure section in the audit report ( <i>Flesch Reading Ease index</i> ) ( <i>sensitivity analysis: Fog index</i> )
<i>Independent variables</i>	
<i>FE</i>	Percentage of financial experts in the audit committee relative to total members (analysis of the CV's; see Table III for further details)
<i>IE</i>	Percentage of industry experts in the audit committee relative to total members (analysis of the CV's; see Table III for further details)
<i>FE_IE</i>	Percentage of financial and industry experts in the audit committee relative to total members (analysis of the CV's: see Table III for further details)
<i>Control variables</i>	
Corporate governance specific	
<i>ACMEET</i>	annual audit committee meetings (as reported)
<i>ACSIZE</i>	audit committee size (as reported)
<i>BIG</i>	appointment of one of the four top-selling audit firms (Big Four; Deloitte Touche Tohmatsu; EY; PricewaterhouseCoopers; KPMG) (dummy variable; yes = 1, no = 0) (as reported)
<i>GCO</i>	Existence of a modified going concern audit opinion (dummy variable; yes = 1, no = 0) (as reported)
<i>INDP</i>	Percentage of independent members in the audit committee (as reported)
<i>ROT</i>	Audit firm rotation in the current fiscal year (dummy variable; yes = 1, no = 0) (as reported)
Firm specific	
<i>CURR</i>	Current assets/total assets
<i>FORSALES</i>	Sales outside the UK/total sales
<i>IND</i>	dummy variable for (1) manufacturing and (2) services (branch of industry)
<i>LEV</i>	Long-term debt/total assets
<i>NSEG</i>	Natural logarithm of the number of business segments
<i>ROA</i>	Return on Assets = Net income before preferred dividends + ((interest expense on debt – interest capitalised) × (1 – tax rate)) average of last year's and current year's total assets
<i>SIZE</i>	Natural logarithm of total assets (firm size)
<i>USLIST</i>	Cross-Listing on the NYSE, AMEX or NASDAQ stock exchanges (dummy variable; yes = 1, no = 0) (as reported)

### Regression models

The present study focussed on whether financial expertise (*FE*), industry expertise (*IE*) and the interaction of FIE (*FE\_IE*) in audit committees have a positive impact on the readability of KAM disclosures (*KAM*). The assumptions of regression analysis (i.e. linear relationship, homoscedasticity, multivariate normality and little or no multicollinearity) were tested based on Hair *et al.*'s (2009) guidelines. Regression model formulas (1) and (2) were considered relevant to the present analysis:

$$\begin{aligned}
 KAM_{it} = & \beta_0 + \beta_1 FE_{it} + \beta_2 IE_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 LEV_{it} + \beta_6 CURR_{it} \\
 & + \beta_7 NSEG_{it} + \beta_8 FORSALES_{it} + \beta_9 BIG_{it} + \beta_{10} ROT_{it} + \beta_{11} GCO_{it} \\
 & + \beta_{12} USLIST_{it} + \beta_{13} INDP_{it} + \beta_{14} ACMEET_{it} + \beta_{15} ACSIZE_{it} + \beta_{16} IND_{it} + \varepsilon_{it}, \quad (1)
 \end{aligned}$$

$$\begin{aligned}
 KAM_{it} = & \beta_0 + \beta_1 FE\_IE_{it} + \beta_2 SIZE_{it} + \beta_3 ROA_{it} + \beta_4 LEV_{it} + \beta_5 CURR_{it} + \beta_6 NSEG_{it} \\
 & + \beta_7 FORSALES_{it} + \beta_8 BIG_{it} + \beta_9 ROT_{it} + \beta_{10} GCO_{it} + \beta_{11} USLIST_{it} \\
 & + \beta_{12} INDP_{it} + \beta_{13} ACMEET_{it} + \beta_{14} ACSIZE_{it} + \beta_{15} IND_{it} + \varepsilon_{it}. \quad (2)
 \end{aligned}$$

We then proceeded to conduct panel data regression analyses. In most empirical corporate governance research, endogeneity concerns can limit the validity of quantitative studies

(Wintoki *et al.*, 2012). The readability of KAM disclosures can also contribute to better audit committee expertise and not the other way around, as assumed in the current study. The Durbin-Wu-Hausman test is the model most commonly used to check for endogeneity. We thus conducted this test to choose either the random effects or fixed-effects model for the various regression analyses[4]. In most cases, however, the results were largely similar regardless of the test used, and we did not find any hint of endogeneity in our regression model. If this had not been the case, the use of instrumental variables and the generalised method of moments would have been useful (Wintoki *et al.*, 2012).

#### *Robustness checks*

The sensitivity of our results was tested by several robustness checks. To confirm that the combination of FIE on the audit committee has a more significant impact on the readability of KAM disclosures compared with financial or industry expertise separately, we used an alternative measure of the dependent variable. For the robustness check, we did not rely on the Flesch Reading Ease, but chose the Gunning Fog index as another readability index (Loughran and McDonald, 2014, 2016; Li, 2008).

The Gunning Fog index captures text complexity as a function of syllables per word and words per sentence (Li, 2008). Scores were calculated using the following formula:

$$\text{Fog} = 0.4 \times (\text{words per sentence} + \text{percentage of complex words}). \quad (3)$$

Complex words are defined as words with three syllables or more. The link between Fog and KAM readability was established as follows. A Fog index of at least 18 means KAM disclosures are unreadable, 14–18 indicates “difficult disclosures”, 12–14 is “ideal”, 10–12 is considered “acceptable” and 8–10 is “childlike”. Thus, in contrast to the Flesch Reading Ease, a negative link between the Fog index and audit committees’ FIE indicates that the readability of KAM disclosures are increased by board expertise.

### **Research results**

#### *Descriptive statistics*

Table V provides an overview of how KAM readability evolved between 2014 and 2017. While the KAM mean scores for the four-year research period slightly increased from 26.0 (2014) to 26.8 (2016) and to 27.5 (2017), these information were still very difficult to read. Thus, KAM disclosures might not have been decision-useful for shareholders and other stakeholder groups in our sample. Information overload and technical terms may be a relevant risk for auditor reporting and may be linked to an increased expectation gap.

The mean, median, maximum and minimum values and standard deviation are presented in Table VI for all variables. On average, about 33.6 per cent (38.2 per cent) of the audit committee members were financial experts (industry experts), indicating a moderate amount of expertise in our sample. Interestingly, the extent of audit committees’ FIE also increased over time. The percentage of financial experts in audit committees changed from 32.1 per cent (2014) to 33.4 per cent (2015), 34.2 per cent (2016) and 34.9 per cent (2017). Thus, even UK premium listing firms are not very successful in including FIE on their audit committees. Industry experts on audit committees were slightly higher at 37.9 per cent (2014), 37.8 per cent (2015), 38.9 per cent (2016) and 38.3 per cent (2017). The same

**Table V.**  
Development of  
KAM readability

Readability index	2014	2015	2016	2017
Flesch reading ease score	26.0	26.3	26.8	27.5



Table VI.  
Descriptive statistics

Variable	Mean	Median	Max.	Min.	SD
<i>KAM</i>	26.5	28.4	50.3	20.3	2.212
<i>FE</i>	0.336	0.342	0.800	0.000	0.231
<i>IE</i>	0.382	0.379	0.700	0.000	0.219
<i>IE_SE</i>	0.341	0.335	0.720	0.061	0.241
<i>ACMEET</i>	4.809	4.752	7.000	3.000	1.567
<i>ACSIZE</i>	5.029	5.323	9.000	3.000	2.387
<i>BIG</i>	0.894	1.000	1.000	0.000	0.220
<i>GCO</i>	0.029	0.000	1.000	0.000	0.191
<i>INDP</i>	0.320	0.351	0.400	0.200	0.296
<i>ROT</i>	0.079	0.000	1.000	0.000	0.234
<i>CURR</i>	0.402	0.396	0.503	0.235	0.194
<i>FORSALES</i>	0.412	0.378	0.491	0.121	0.498
<i>IND</i>	0	0	1	0	0.5
<i>LEV</i>	0.528	0.498	0.679	0.218	0.248
<i>NSEG</i>	0.898	0.912	1.323	0.089	0.526
<i>ROA</i>	0.049	0.051	0.378	-0.146	0.180
<i>SIZE</i>	12.978	12.798	15.698	10.279	2.218
<i>USLIST</i>	0.051	0.000	1.000	0.000	0.196

development was true for the combination of financial and industry experts, which was 33.6 per cent (2014), 33.1 per cent (2015), 34.5 per cent (2016) and 35.2 per cent (2017). Our analysis shows that a personal union of both kinds of expertise was also moderate in our sample.

With regard to our control variables, the average was around five members for audit committees. The percentage of independent members on audit committees was rather moderate and comparable to the percentage of financial and industry experts (around 30 per cent). The meeting frequency of the audit committee was five on average. Most of the companies were audited by a Big Four firm (0.894). There were few cases of an audit firm rotation (0.079). Most of the companies did not get a modified going-concern opinion (0.029). Interestingly, only a few firms had a cross-listing on the US stock exchanges (0.051).

### Correlation results

Table VII presents the Pearson correlation matrix for the dependent, independent and control variables. First, we find a correlation between *FE*, and *KAM* that supports *H1*. Second, *IE* and *KAM* are positively related in line with *H2*. Third, also *FE\_IE* and *KAM* are positively correlated in line with *H3*. As a high correlation exists between *FE*, *IE* and *FE\_IE*, we conducted two separate regression models. We separated between a 0.05 (\*) and a 0.01 (\*\*) level of significance (two-tailed). Most of the other variables correlated positively but non-significantly with *KAM*. Consistent with prior research, *KAM* also correlated positively with the appointment of a Big Four audit company (*BIG*) and the issuance of a modified going-concern opinion (*GCO*) and negatively with *ROT*.

Besides the use of other variables, we examined collinearity issues through the correlation matrix. The correlation coefficient is thought to be problematic if it exceeds 0.8 (Hair *et al.*, 2009), but the correlation coefficients found in our study are below the stated value. A more indicative and accurate technique that is commonly used is the variance inflation factor (VIF) for each of the independent variables. If the VIF exceeds 10, collinearity is considered to be a problem. The VIF (not tabulated) for this study of the model was 4.68 as a maximum. Thus, according to the correlation matrix and VIF of the variables of the study, it is unlikely that multicollinearity manipulated the regression results, since the maximum VIF is less than the threshold of 10.

Table VII.  
Pearson  
correlation matrix

Variables	KAM	FE	IE	FE IE	ACMEET	ACSIZE	INDP	BIG	SIZE	ROA	LEV	CURR	NSEG	FORSALES	ROT	GCO	US LIST	IND
KAM	1																	
FE	0.314*	1																
IE	0.298*	0.225*	1															
FE IE	0.309*	0.423*	0.487*	1														
ACMEET	0.155	0.237*	0.274*	0.196*	1													
ACSIZE	0.236	0.178	0.243	0.217*	0.202*	1												
INDP	0.196	0.111	0.214	0.267	0.159	0.217*	1											
BIG	0.309**	0.221	0.171	0.251*	0.241**	0.201	0.120	1										
SIZE	0.142	0.201	-0.089	0.121	-0.154	0.142	0.196	-0.092	1									
ROA	0.236	0.214	0.221**	0.174*	0.198	0.214	-0.196	0.204	0.186	1								
LEV	0.234	0.249*	0.231	0.168	0.029	0.197	0.157	0.198	0.286	0.251	1							
CURR	0.154	0.232*	0.296	0.217	0.271*	0.267	0.094	0.012	0.121	0.294	0.201	1						
NSEG	0.266	0.214	0.174	0.067	0.114	0.191	0.121	0.203**	0.121	0.214	0.094	0.112	1					
FORSALES	0.137	0.211	0.096	0.121	0.211	0.174	0.136	0.096	0.127	0.219	0.147	0.210	0.218*	1				
ROT	-0.198*	0.121	0.219	0.221	0.139	0.174	0.214	0.216*	0.210	0.134	0.094	0.239	0.124	0.131	1			
GCO	0.319**	0.121	0.214	0.219	0.096	0.094	0.216*	0.111	0.074	0.234	0.210	0.132	0.155	0.194	0.210	1		
US LIST	0.083	0.101	0.111	0.212*	0.147	0.177	0.219	0.314	0.171	0.012	0.912	0.331	0.174	0.139	0.265*	0.102	1	
IND	0.137	0.155	0.326	0.261	0.153	0.241	0.152	0.154*	0.189	0.098	0.140	0.221	0.099	0.124	0.296*	0.124	0.121	1

Notes: Table VII represents the correlation coefficients between the independent, dependent and control variables for the whole sample. The variables are defined in Table IV. \*\*Significant at 0.05 and 0.01 levels, respectively (two-tailed)

*Regression and robustness check results*

Table VIII lists the results of the multivariate regression analyses for our two models. Model I dealt solely with FIE, and model II with combined FIE (*FE\_IE*) on audit committees. The results of model I indicate that *FE* and *KAM* are positively and significantly linked. Thus, financial experts on the audit committees are connected with an increased readability of *KAM* disclosure (support of *H1*). Furthermore, *IE* and *KAM* are positively and significantly related. Industry experts on the audit committee lead to better *KAM* readability in the audit report (support of *H2*). With regard to model II, *FE\_IE* and *KAM* are also positively and significantly linked. In comparison to model I, the link between *FE\_IE* and *KAM* is stronger than solely *FE* or *IE* (Table VIII). Thus, in line with agency theory, financial experts, industry experts and the combination of financial and industry experts on the audit committee increase readability of *KAM* disclosure. As FIE on the audit committee leads to better monitoring of the financial reporting and the external auditor, this reflects shareholders' interests in decision useful *KAM* disclosure in line with *H1* and *H2*. Our findings are in line with Velte's (2018a) conclusion that gender diversity on the audit committee positively contributes to *KAM* readability. Furthermore, in line with *H3*, our results indicate that combined FIE (*FE\_IE*) on the audit committee has a stronger impact on the readability of *KAM* disclosure as solely *FE* or *IE*. *FE* and *IE* can be classified as complementary composition variables of the audit committee.

With regard to our firm-specific controls, we found that *ROA* has a positive, significant impact on *KAM*. Furthermore, with regard to our corporate governance variables as controls, *ACMEET*, *BIG* and *GCO* are positively related to *KAM* in both regression models. These results support the conclusion that audit committees and external auditors have a

Variables	Model I: financial and industry expertise in the audit committee (separately)	Model II: combined financial and industry expertise in the audit committee (FE_IE)
<i>Intercept</i>	-1.231	-1.435
<i>FE</i>	0.089* (0.083)	-
<i>IE</i>	0.073* (0.072)	-
<i>FE_IE</i>	-	0.052** (0.024)
<i>Control variables</i>		
<i>ACMEET</i>	2.545*** (0.003)	3.563*** (0.002)
<i>ACSIZE</i>	0.043 (0.549)	0.052 (0.532)
<i>INDP</i>	0.048 (0.557)	0.039 (0.569)
<i>BIG</i>	0.177* (0.087)	0.174* (0.089)
<i>SIZE</i>	0.032 (0.472)	0.075 (0.456)
<i>ROA</i>	0.232** (0.006)	0.245** (0.005)
<i>LEV</i>	0.045 (0.498)	0.054 (0.482)
<i>CURR</i>	0.011 (0.398)	0.021 (0.396)
<i>NSEG</i>	0.058 (0.491)	0.053 (0.493)
<i>FORSALES</i>	0.016 (0.395)	0.021 (0.391)
<i>ROT</i>	-0.212** (0.005)	-2.234** (0.004)
<i>GCO</i>	0.239** (0.004)	0.236** (0.004)
<i>USLIST</i>	0.021 (0.392)	0.032 (0.389)
<i>IND</i>	3.016* (0.061)	3.132* (0.060)
<i>R</i> <sup>2</sup> (adj.)	0.273	0.289
<i>F</i> stat.	2.182**	2.321**
Observations	1,319	1,319

**Notes:** Table VIII presents results from panel regressions of the audit committee expertise (*FE*, *IE*, *FE\_IE*) on *KAM* readability (*KAM*) and controls over the period 2014–2017 for the whole sample. The variables are defined in Table IV. Robust and clustered (by firm) standard errors are reported in parentheses. The *p*-values are two-tailed. \*, \*\*, \*\*\* Significant at 10, 5 and 1 per cent levels, respectively

**Table VIII.** Regression analysis (Flesch reading ease index)

complementary relationship rather than a substitutive one. Audit committees' effectiveness – reflected in the higher FIE of their members – is positively linked to commonly used audit quality measures, such as Big Four selection or higher audit fees.

With regard to our robustness checks, our main regression results were found to be robust. Thus, the results' robustness was confirmed for the modified dependent variable *KAM*. The regression results are shown in Table IX.

### Summary and limitations

Capital market trust in financial reporting and external audit quality has decreased after the financial crisis of 2008/2009. As a reaction, audit committee expertise and auditor reporting (e.g. *KAM* disclosures) have been extended. Based on an agency-theoretical framework, this paper analyses the cooperation between audit committees and external auditors. As both parties have to discuss the audit focal points, we investigate whether audit committees' FIE affected the readability of *KAM* disclosures in a sample of UK premium listing firms from 2014 to 2017 (1,319 firm-year observations). The UK FRC introduced *KAM* disclosures as a new content of the audit report for companies with a premium listing of equity shares on the LSE main market with fiscal years beginning on or after 1 October 2012. *KAM* disclosure can only be decision useful for the capital market if the information is readable. According to our hypotheses, financial experts (*H1*) and industry experts (*H2*) should contribute to stricter monitoring activities by the audit committee and better cooperation with the external auditor. Furthermore, we assume that combined FIE will strengthen the positive

Variables	Model I: financial and industry expertise in the audit committee (separately)	Model II: combined financial and industry expertise in the audit committee (FI_IE)
<i>Intercept</i>	-1.386	-1.591
<i>FE</i>	0.124** (0.032)	-
<i>IE</i>	0.103* (0.072)	-
<i>FE_IE</i>	-	0.212** (0.006)
<i>Control variables</i>		
<i>ACMEET</i>	2.286*** (0.004)	2.316** (0.003)
<i>ACSIZE</i>	0.098 (0.576)	0.074 (0.598)
<i>INDP</i>	0.126 (0.528)	0.073 (0.559)
<i>BIG</i>	0.127* (0.090)	0.143* (0.089)
<i>SIZE</i>	0.078 (0.454)	0.069 (0.458)
<i>ROA</i>	0.156* (0.075)	0.132* (0.083)
<i>LEV</i>	0.028 (0.598)	0.074 (0.538)
<i>CURR</i>	0.093 (0.486)	0.090 (0.489)
<i>NSEG</i>	0.121 (0.428)	0.137 (0.412)
<i>FORSALES</i>	0.132 (0.415)	0.128 (0.421)
<i>ROT</i>	-0.242** (0.004)	-2.331** (0.003)
<i>GCO</i>	0.254** (0.003)	0.243** (0.004)
<i>USLIST</i>	0.099 (0.432)	0.081 (0.437)
<i>IND</i>	2.816** (0.004)	3.132** (0.03)
<i>R<sup>2</sup> (adj.)</i>	0.254	0.278
<i>F stat.</i>	2.053**	2.104**
Observations	1,319	1,319

**Notes:** Table IX presents results from panel regressions of the audit committee expertise (*FE*, *IE*, *FE\_IE*) on *KAM* readability (*KAM*) and controls over the period 2014–2017 for the whole sample. *KAM* is the dependent variable as *KAM* readability (based on Fog index). Please note that the Fog index is an inverse measurement of *KAM*, thus multiplied by (-1). The variables are defined in Table IV. Robust and clustered (by firm) standard errors are reported in parentheses. The *p*-values are two-tailed. \*\*\*, \*\*\*, \*\* Significant at 10, 5 and 1 per cent levels, respectively

**Table IX.**  
Sensitivity analysis  
(Fog index)

impact of audit committees on readability in KAM disclosure (*H3*). As audit committees and external auditors represent agents of the shareholders, a close interaction between these parties is most relevant for KAM readability, in line with our agency-theoretical framework. Our regression analyses indicate that FIE on the audit committee positively contributes to KAM readability, measured by the Flesch reading ease, and the link is stronger with combined financial and industry experts. Thus, our three hypotheses are supported. Sensitivity tests conducted by modifying our KAM readability score (Fog index) support our results. These results are in line with our agency model and related studies on that topic (Cassell *et al.*, 2012; Hoitash and Hoitash, 2009; Velte, 2018a, b).

This study contributes to the recent literature in different ways. First, our study introduces FIE as one of the key audit committee composition variables and their relationship with the cooperation process with the external auditor, which leads to increased KAM readability. Second, our evidence of a positive relationship between FIE and KAM readability for UK premium listed companies sheds light on current research activities in other countries or regions with KAM regulations, such as the EU or USA.

Our results are relevant to researchers, regulators and practitioners seeking to strengthen the incentives for KAM readability. Although our results indicate that financial experts on the audit committee increase KAM readability in the audit report (*H1*), we stress the need for implementing industry experts in the audit committee (*H2*). Financial experts and industry experts can be classified as complementary composition variables of the audit committee, as our interaction variable (*H3*) and their increased impact on the positive relationship between audit committee composition and KAM readability indicates. In view of our results, first, boards of directors should ensure an adequate mixture of financial and industrial experts on audit committees. Second, external audit committee reporting should be strengthened as many firms stress audit committees' FE and neglect information on IE. There is a tendency of "boiler plate" information in current practice as the exact criteria for industry expertise are not published often. As the audit committee represents the agent of the shareholders, at least the financial and industrial experts on the audit committee should care about a readable KAM disclosure in the audit report.

With regard to the present results, regulators should encourage a broad range of expertise in audit committees – especially a combination of financial and industry experts. Up to now, both FE and IE criteria in current corporate governance laws and codes are rather vague and subject to audit committee discretion. Future regulations or modifications of the UK corporate governance code should be more precise in describing the criteria of FE and IE in audit committees. In view of auditor reporting, the International Auditing and Assurance Standards Board, as the global standard setter of auditing, should also guarantee a readable audit report without "boilerplates". The precision of ISA 701 "Communicating Key Audit Matters in the Independent Auditor's Report" should also be extended in future. Otherwise, KAM disclosures can increase the expectation gap between management and shareholders and impair the audit firm's reputation.

We predict increased empirical research activity on this issue for the US and European capital markets in the coming years. As empirical research on the audit committee has been focussed on the impact of FE on earnings quality and audit quality during the last decade, we know very little about the influence of combined FIE on audit quality, as *H3* indicates. Thus, diversity of audit committee expertise seems to be more useful than concentrating on one special expertise item in many prior studies.

Finally, the limitations of the present study should be stressed. As this research only covered a short period (i.e. 2014–2017), the results offer limited insights, since the effects of regulatory changes that increased audit committee and external auditor incentives after the 2008–2009 financial crisis are only likely to become clear in long-term studies. The current research was also limited to analyses of audit committees' FIE. Other board

composition variables (e.g. social ties, compensation) may also have an impact on KAM disclosure. Moreover, the board of directors may only indirectly influence the KAM disclosures in the audit report, as the external auditor is responsible for it. Thus, external auditor variables (e.g. Big Four) might be more useful in explaining the impact on KAM. We did at least include external auditor variables as controls in our model to cover these aspects. Moreover, reports of audit committees' effectiveness, the CVs of the competence of their members and also KAM disclosure can be only "symbolic", to reinforce organisational legitimacy. The use of readability scores is also subject to some limitations that could decrease the validity of the present results (see Loughran and McDonald, 2014, 2016).

### Notes

1. A premium listing is only available to equity shares issued by trading companies and to closed and open-ended investment entities. Issuers with a premium listing are required to meet the UK's super-equivalent rules, which are higher than the EU minimum requirements. A premium listing means the company is expected to meet the UK's highest standards of regulation and corporate governance – and, as a consequence, may enjoy a lower cost of capital through greater transparency and through building investor confidence.
2. In the words of British Airways Plc (2018, pp. 18-19), that company's 2017 Annual Report and Accounts, KAMs are declared, by Ernst & Young LLP as the audit firm, to be those matters that "in our professional judgement are of most significance in our audit of the financial statements of the current period, and include the most significant risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in our opinion thereon, and we do not provide a separate opinion on these matters". Ernst & Young LLPs audit report then goes on to identify only three "most significant risks", that firm's response (i.e. how they have taken regard for the risk within the audit engagement) and their related "key observations communicated to the Board of Directors".
3. We did at least include external auditor variables as controls in our model to cover these aspects.
4. The null hypothesis of the Hausman test implies that the difference in coefficients is not systematic. Further, this study selects 5 per cent as the level of significance for each regression model. The Hausman test shows that fixed effects are present for all regression equations ( $p$ -values: 0.0254 ( $H1$ ); 0.0353 ( $H2$ ); 0.0273 ( $H3$ )).

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