



# Real effects of reporting key audit matters on auditors' judgment and choice of action

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This experimental study analyzes whether reporting an accounting estimate as a key audit matter (KAM) can influence auditor judgment about the accounting estimate and the corresponding action. We find that skeptical action in the form of proposed adjustment amounts is significantly lower when the accounting estimate is reported as a KAM. Thus, the disclosure of a KAM can serve as a moral license to waive an adjustment. Taking into account that the KAM disclosure does not affect auditors' skeptical judgments in the form of a reasonableness assessment of the accounting estimate, our results indicate the existence of a judgment–action gap. Furthermore, implicit client pressure does not enlarge the moral licensing effect of the KAM disclosure. We also find evidence that audit effort is not affected by reporting a KAM. Overall, our study contributes to the current debate about the audit reporting model by showing that reporting a KAM might have unintended “real effects” on auditors' actions.

## KEYWORDS

accountability, accounting estimates, audit reporting, auditor judgment, client pressure, key audit matters, moral licensing, real effects

## JEL CLASSIFICATION

M40; M41; M42

## 1 | INTRODUCTION

Reports from several enforcement institutions repeatedly show that the audit of accounting estimates is especially error prone (Financial Reporting Council, 2015; International Forum of Independent Audit Regulators, 2015; Public Company Accounting Oversight Board [PCAOB], 2013, 2016). While current exploratory interview and survey studies have tried to identify the underlying problems on an institutional and task level (Cannon & Bédard, 2017; Christensen, Glover, & Wood, 2012; Glover, Taylor, & Wu, 2017a, b; Griffith, 2016; Griffith, Hammersley, & Kadous, 2015), the uncertain nature of accounting estimates can also lead to biases on the psychological level of the individual auditor (e.g., Bratten, Gaynor, McDaniel, Montague, & Sierra, 2013; Martin, Rich, & Wilks, 2006). To mitigate these cognitive or motivational biases and enhance the professional skepticism when

auditing accounting estimates, recent studies have examined the use of various debiasing strategies. In addition to the efforts targeted at changing auditors' ways of thinking (e.g., Backof, Bamber, & Carpenter, 2016; Griffith, Hammersley, Kadous, & Young, 2015; Plumlee, Rixom, & Rosman, 2015; Rasso, 2015), another strategy aims to change auditors' motivations. In this latter line of research, a central area of interest is the creation of accountability (e.g., Kennedy, 1993, 1995), such as through different forms of disclosure or justification requirements. In a similar vein, we examine whether the reporting on key audit matters (KAMs) can influence auditors' judgments and decision-making (JDM) when auditing accounting estimates.

Primarily, the reporting of KAMs aims to provide more information relevant to users based on the audit that was performed. Additionally, “real effects” may occur. We define real effects as situations in which the disclosing person or reporting entity changes the allocation of

resources and judgment as a result of the disclosure requirement (Leuz & Wysocki, 2016). When reporting KAMs, real effects could arise if auditors anticipate that certain accounting matters will be disclosed as a KAM while making judgments about financial statement assertions. Thus, this additional disclosure can influence auditors' JDM of the respective financial matters to be reported as a KAM. The International Auditing and Assurance Standards Board (IAASB, 2015b, p. 2) itself states that the new auditor reporting model should lead to a "renewed focus of the auditor on matters to be communicated in the auditor's report, which could indirectly result in an increase in professional skepticism."

Whereas some archival and survey studies have investigated the impact of KAMs on the information content of expanded audit reports (BooLaky & Quick, 2016; Guttierrez, Minutti-Meza, Tatum, & Vulcheva, 2018; Lennox, Schmidt, & Thompson, 2018; Reid, Carcello, Li, & Neal, 2018) and on auditor liability (for a review, see Gimbar, Hansen, & Ozlanski, 2016), only a few studies have analyzed the impact of the new auditor reporting requirement on the process of the audit itself—for exceptions, see Fuller (2015) and Cade and Hodge (2014); and for a comprehensive review of the current research, see Bédard, Coram, Espahbodi, and Mock (2016).

With regard to auditors' JDM, some studies have showed unintended consequences of the KAM reporting requirement. Gay and Ng (2015) indicated that auditors are less likely to communicate an aggressive accounting estimate to the audit committee if the KAM standard is to be applied. Compared with a situation where the KAM reporting requirement is absent, an auditor's propensity to accept the aggressive estimate also increases. A working paper by Ratzinger-Sakel and Theis (2018) focused on possible effects of the new auditor reporting model on auditors' judgment performances. Our conceptual setting is quite different, because we differentiate between auditors' skeptical judgments and corresponding skeptical actions in order to investigate the potential existence of a judgment-action gap. Whereas Ratzinger-Sakel and Theis (2018) solely examined the likelihood to require an adjustment, we also focus on the adjustment amount to get a more precise measure for auditors' skeptical actions and consider audit effort as another dimension of skeptical action.<sup>1</sup>

We further examine whether client pressure moderates the effect of the KAM reporting requirement. The manipulation of implicit client pressure is intended to dissect two possible different ways of how the KAM reporting requirement can affect auditors' JDM. We argue that the KAM reporting requirement will either work as an accountability mechanism and stimulate a more balanced and exhaustive processing of information or will unconsciously serve as a justification template to justify one's own decision. There is plenty of evidence that client pressure can lead auditors to conform more strongly to clients' preferences, and thus can increase the need to legitimate their judgments

(e.g., Hatfield, Jackson, & Vandervelde, 2011). Thus, in the case of client pressure, KAM reporting is expected to function even more strongly as a means to legitimize auditors' judgments instead of enhancing auditors' accountabilities.

We employed a 2 × 2 between-subject design that manipulates the auditors' reporting regime (reporting KAM vs. no reporting KAM) and client pressure (implicit client pressure vs. no client pressure). The participants in both KAM manipulations were instructed that the respective accounting estimate qualifies as a KAM due to its inherent uncertainty. Whereas the treatment group was informed that the accounting estimate will be disclosed as a KAM, the control group was informed that the reporting of KAMs is not yet obligatory and thus not applicable. We manipulated implicit client pressure by stating that the client prefers no further adjustments and instead relies on his or her long-lasting experience in the case of matters with high uncertainty. Other factors, like the client's economic importance, were held at a constant level in order to minimize confounding effects of multiple manipulations.

The experiment was conducted as a warranty provision case study. The final sample consists of 122 highly experienced German auditors. Participants evaluated the reasonableness of a client-biased estimate, the probability of insisting on an adjustment, and the amount of a potential adjustment after having received information regarding two main assumptions of the estimate. Participants also indicated the total amount of additional audit hours needed to reach a final conclusion on the KAM subject and decided on how to allocate these additional audit hours on three different audit procedures: test of details, analytical procedures, and documentation.

In this paper, we directly refer to International Standards on Auditing (ISAs) and not to German audit standards. In Germany, the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer in Deutschland e.V. [IDW]) outlines auditing standards.<sup>2</sup> As of today, only minor differences exist between both sets of audit standards (see IDW, 2017; Köhler, Marten, Quick, & Ruhnke, 2007). The national audit standard IDW PS 401, which mainly corresponds to ISA 701 (see IDW PS 401.6), has to be applied for periods ending on or after December 15, 2017.

In line with our expectations, we do not find a main effect of the KAM manipulation on the assessment of the reasonableness of the accounting estimate (skeptical judgment). However, we find that skeptical action in the form of the (probability-weighted) adjustment amount of participants in the KAM manipulation is significantly *lower* than for participants without a KAM requirement. This result is consistent with the theory of moral licensing, indicating that auditors can unconsciously perceive the reporting of KAMs as a substitute for requiring adjustments in the financial statements. Taking these two results together, we find support for the existence of a judgment-action gap. Furthermore, we are unable to show that the implicit client pressure fosters a stronger moral licensing effect. Finally, the KAM

<sup>1</sup>Another distinction is that our setting removes potential uncertainties with regard to the decision as to whether a matter should be regarded as a KAM or not. By this, we wanted to exclude possible effects of the KAM selection process. Otherwise, the additional importance that is signaled by stating that a case will be reported as a KAM (compared with the same case not being reported as a KAM) could have led to confounding effects.

<sup>2</sup>The EU demands the application of ISAs for statutory audits. A prerequisite is a formal endorsement (adoption) of ISAs at the EU level. This endorsement is still open. However, all of the requirements mentioned in the ISAs are currently covered by the German national auditing standards (IDW auditing standards).

reporting requirement has no significant influence on the amount and distribution of additional audit effort to finalize the audit. These results do not support reservations formulated against the KAM reporting requirement to lead to a refocus on audit documentation.

Our study contributes to the current literature in several ways. First, prior research has identified negative effects of additional information on the JDM of auditors; for instance, in the form of information overload or dilution effects that distract auditors from diagnostic informational cues (Hackenbrack, 1992; Shelton, 1999). However, only very limited research has investigated the influence of information provided by auditors themselves. We locate such “real effects” of the KAM reporting requirement on auditors' JDM of accounting estimates. The context of accounting estimates is especially pertinent as ISA 701.9(b) requests the consideration of accounting estimates with high uncertainty when deciding on which KAM to report. By isolating the disclosure requirement, our unique experimental setting allows statements on how the reporting of KAMs can be anticipated by auditors while evaluating the respective accounting estimate and thus influence auditors' JDM on the preparers' side.

Second, our results show that implicit client pressure does not have a main effect on auditors' JDM, and nor does it moderate the effect of the KAM reporting requirement. In this regard, our findings are consistent with other studies that do not show severe impediments to auditors' JDM by forms of stronger client pressure (Braun, 2001; Chang & Hwang, 2003).

Finally, our findings are important for standard setters. While similar reporting requirements are obligatory in the EU for public interest entities, the PCAOB also introduced the reporting on critical audit matters (PCAOB, 2017). Our results show that the KAM requirement can have unintended consequences not only in the form of a “disclaimer effect” on the side of the financial statement users or in the form of a liability protection (Brasel, Doxey, Grenier, & Reffett, 2016), but also in the form of a moral licensing effect on the auditors' JDM as well. That is, auditors showed a lower probability of insisting on an adjustment and also assessed a smaller adjustment amount as necessary when the accounting estimate evaluated was also determined to be reported as a KAM. Auditors thus exhibited a more imprudent JDM concerning estimates subject to a KAM compared with the scenario without a KAM reporting requirement. Although the moral licensing effect is well known and has been reported for other forms of disclosures (Griffin, 2014; Koch & Schmidt, 2010; Loewenstein, Cain, & Sah, 2011), it is rarely explored in the context of the KAM reporting requirement (Ratzinger-Sakel & Theis, 2018).

## 2 | PRIOR RESEARCH AND HYPOTHESES DEVELOPMENT

### 2.1 | Effects of KAM disclosure on the JDM of accounting estimates

KAMs have to be reported for listed companies and contain those matters that “in the auditor's professional judgment, were of most

significance in the audit of the financial statements of the current period” (ISA 701.8). Besides providing information for financial statement users, the IAASB states that reporting of KAMs could also increase auditors' professional skepticism (IAASB, 2015a). This effect on auditors' JDM can unfold in two distinct ways. First, the requirement to report KAMs implies a three-step process: The auditor (1) decides on important audit issues, (2) communicates these matters to those charged with governance, and (3) selects the respective KAM. This three-step selection process can indirectly lead to an increased focus on audit risks when conducting the audit.

Second, by highlighting matters of most significance during the audit, the auditor also pinpoints issues of higher risk and uncertainty. Specifically, the auditor has to state (1) why the matter was considered to be one of utmost significance in the audit and (2) the audit procedures conducted to address these issues (ISA 701.13). In this sense, the KAM reporting requirement can also function as an incentive-based accountability mechanism (Koonce, Anderson, & Marchant, 1995). It is reasonable to assume that the auditor exercises special diligence in these particular cases because of the public salience of the matter, possible negative reputational effects in case of ex post detected misstatements, and a more visible accountability towards the public as a whole. Knowing that KAMs draw public attention to the disclosed matters, it can be expected that auditors will process information in a more balanced way and consider evidence that disapproves management's estimate more thoroughly.

For other forms of additional disclosure, however, unintended negative effects on the JDM have also been reported (Jamal, 2012; Loewenstein, Sunstein, & Golmann, 2014), especially for the disclosure of conflicts of interests (Cain, Loewenstein, & Moore, 2005; Cain, Loewenstein, & Moore, 2011; Jamal, Marshall, & Tan, 2016; Koch & Schmidt, 2010). Notably, one experimental study by Griffin (2014) showed that supplemental disclosure in the notes concerning the uncertainty of accounting estimates can provide auditors with a moral license to accept material misstatements by the client. In this case, the additional disclosure in the notes did not work as an accountability mechanism, but rather provided the auditors with a tool or “license” to unconsciously justify their decision to waive an adjustment (Monin & Miller, 2001). Psychologically, this can be explained as a mental trade-off: By disclosing the riskiness of the underlying accounting estimate in the notes, further adjustments were deemed less necessary in the actual account balance. This practice is especially worrisome, as recognized amounts are more salient and thus judged to be more important by users of financial statements than disclosed information (Hirst & Hopkins, 1998; Hirst, Hopkins, & Wahlen, 2004; Maines & McDaniel, 2000).

Compared with the notes disclosure, the KAM disclosure differs in important ways. First, whereas notes provide additional descriptive information on specific accounting matters, KAMs rather guide the intended users towards those matters that were of most significance in the audit. Second, KAMs are provided by an independent party and therefore have a higher potential to reduce the informational risk for the financial statement users. In contrast to the notes, KAMs focus more strongly on adding credibility to the financial reports. Third, the

two disclosure requirements differ in their location inside the financial statements. Owing to its prominent location and its conciseness, it is reasonable to assume that the information presented in the KAM section is also more salient to financial readers (Ernst, Gassen, & Pellens, 2014).

Taking these differences into account, we argue that reporting KAMs favor a moral licensing effect even more strongly than the notes disclosure. By justifying why an audit matter was significant in the audit and by describing the audit procedures performed, the auditor could perceive the corresponding adjustments in the financial statements as being less necessary. The specific content of KAMs can also foster a tendency known as “confidence bolstering” (Boiney, Kennedy, & Nye, 1997). While preparing KAMs, this effect suggests that the enumeration of audit actions can reinforce the impression of the rightness of one's own judgment. Finally, with regard to the users of the KAM, Kachelmeier, Schmidt, and Valentine (2017) found that users do perceive KAMs as a disclaimer. Participants in this study judged the underlying accounting matter about which the KAM provided information as less reliable and the auditor as being less responsible for a possible misstatement.

In order to locate a moral licensing effect more precisely, we differentiate between auditors' skeptical judgments and auditors' skeptical actions. Professional skepticism relates to an attitude of the auditor as the basis for the exercise of professional judgment (e.g., ISA 200.13(l), 200.A22).<sup>3</sup> Skeptical judgment comprises both the professional judgment and the skeptical attitude requirement. We measure skeptical judgment by the auditor's reasonableness assessment and skeptical action by the auditor's suggested adjustments. In the warranty provision case at hand, a moral licensing effect would lead auditors to judge the provision as more reasonable and to propose smaller adjustments to the provision as estimated by the client.

**H1a.** *Reporting an accounting estimate as a KAM increases auditors' reasonableness assessments of the accounting estimate.*

**H1b.** *Reporting an accounting estimate as a KAM decreases the extent to which auditors propose an adjustment to the account.*

The distinction between skeptical judgment and skeptical action is also motivated by psychological research. In this field, studies have shown a weak and inconsistent relationship between the development of moral judgment and moral behavior, often referred to as the “judgment–action gap” (Jennings, Mitchell, & Hannah, 2014; Walker, 2004). A similar gap may exist in our research setting. Whereas the auditors' cognitive reasonableness assessments correspond to the moral judgment, the proposed audit adjustment can be compared to the resulting moral behavior.

The adjustment decision can be seen as the visible result of the reasonableness assessment that influences the further interaction

with the client. As such, the adjustment decision is not solely the result of this reasonableness assessment, as it may also be driven by KAMs and other contextual factors. Other contextual factors can be strategic considerations such as the intention to retain a client. In contrast, the reasonableness assessment is primarily determined by the auditor's judgment based on subject matter information and less by contextual factors. In line with this argumentation, we expect that KAM reporting as a contextual factor has a smaller impact on auditors' judgments (reasonableness of the accounting estimate) than on the resulting courses of action (audit adjustment).

**H1c.** *The effect of reporting an accounting estimate as a KAM is more pronounced on a proposed adjustment than on a reasonableness assessment.*

## 2.2 | Effects of the interaction between client pressure and KAMs on the JDM of accounting estimates

Among the various forms of pressure that auditors face, client pressure refers to “the pressure to yield, or the perceived pressure to yield, to a client's wishes or influence, whether appropriate or not” (DeZoort & Lord, 1997, p. 47). Whereas explicit client pressure directly connects the means of pressure with the preferences by way of threat, implicit client pressure involves influence through stressing mutual interests and benefits to reach a preferred conclusion—on this distinction, see Koch and Salterio (2017).

There is considerable evidence that auditors adopt and conform to clients' directional goals if client pressure is present. When auditors experience pressure or incentives to reach an ex ante preferred (or adopted) conclusion, they are often subject to a biased information-processing behavior known as “motivated reasoning” (Brownstein, 2003; Kunda, 1990). Empirically, motivated reasoning has been shown for multiple tasks with auditors (Blay, 2005; Farmer, Rittenberg, & Trompeter, 1987; Jenkins & Haynes, 2003), tax accountants (Kadous, Magro, & Spilker, 2008), and investors (Hales, 2007; Thayer, 2011). This tendency, however, is also constrained by an auditor's ability to reach a reasonable conclusion (Boiney et al., 1997; Kunda, 1990; Pyszczynski & Greenberg, 1987). When evaluating the conformity of a financial statement assertion, auditors do not agree with the clients' conclusions if the respective conclusion is unequivocally false.

In situations where auditors face high incentives or conflicts of interest, research shows that auditors do resort to different means for legitimizing their judgments besides being subject to forms of motivated reasoning. For example, Hackenbrack and Nelson (1996) demonstrated that auditors use the ambiguity of accounting standards for justifying aggressive accounting policies by the client. A similar use of discretion has been shown for tax accountants (Cuccia, Hackenbrack, & Nelson, 1995) and student subjects in the role of auditors (Piercey, 2009) when interpreting verbal versus numerical thresholds. Finally, Kadous, Kennedy, and Peecher (2003) showed that additional quality assessments of a client-preferred accounting method enhance its acceptance instead of mitigating the effects of directional goals.

<sup>3</sup>The academic literature is somewhat inconsistent in defining professional skepticism (e.g., Shaub, 1996; Nelson, 2009).

In line with this argumentation, we assume that increased client pressure generally lowers auditors' skeptical actions through forms of motivated reasoning. We have already argued herein that KAMs can function as a moral license and also lower auditors' skeptical actions (H1a, H1b). However, the moral licensing effect is not a one-size-for-all effect (Hertzmänn & Stolle, 2013). The literature suggests that moral licensing and motivated reasoning are somewhat mutually dependent. Thus, we further expect that the effects of both contextual factors reinforce each other. For our setting, we argue that a moral licensing effect of reporting KAMs will be higher if implicit client pressure is also present, because a corresponding lower skeptical action will likewise increase the need for justification. In the case of reporting on KAMs, we expect KAMs to be seen to an even greater extent as a substitute for an adjustment. In sum, we expect that the negative effect of KAMs compared with a no-KAM setting is larger in the client pressure situation. As we assume that KAMs have a stronger effect on auditors' adjustment decisions than on their reasonableness assessments, we limit H2 to this construct.

In the case of reporting on KAMs, we expect KAMs to be seen to an even greater extent as a substitute for an adjustment.

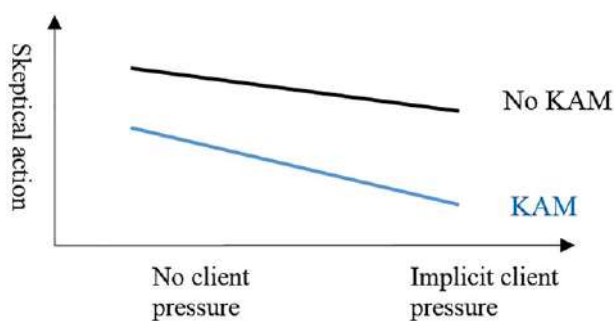
**H2.** *The decrease in auditors' proposed adjustment amounts between the group with and without a KAM reporting requirement is larger in the case of implicit client pressure than in a situation without client pressure.*

Figure 1 gives an overview of the hypothesized interaction effect. The gap between the lines is consistent with H1b; and with implicit client pressure, the size of the gap is greater than without client pressure, which is consistent with H2.

### 3 | RESEARCH METHOD

#### 3.1 | Research design and participants

We employed a  $2 \times 2$  between-subject factorial design. We developed original case materials for a company named X-AG to capture critical features of the valuation of a warranty provision. We verified the external validity of the information presented and the whole



**FIGURE 1** Expected interaction effect between implicit client pressure and key audit matter (KAM) reporting requirement [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

research design during our pre-test based on the responses of six audit experts (professors in the field of accounting and auditing) and eight representatives of audit firms. Our pre-test resulted in some minor alterations.

Participants were asked to conduct an accounting estimate task that covers the valuation of a warranty provision according to IAS 37. Participants first read general information about X-AG that develops, assembles, and sells electric cars. The information included basic financial information on X-AG, normative requirements from IAS 37 for the evaluation of provisions, and the unaudited amount of warranty provisions for the electric cars from the management (€3,450,000). Participants then received information about the evaluation task to be performed. At this stage, the KAM as well as the client-pressure manipulation took place. In this section, participants also received information about a range of possible outcomes calculated by the internal valuation department (€3,650,000 to €4,650,000; see Figure 2.<sup>4</sup> Those values and the materiality threshold for the audit as a whole (€1,000,000) were (in a modified version) adopted from Griffin (2014). Additionally, participants received a performance materiality level of €500,000 (see ISA 320.9).

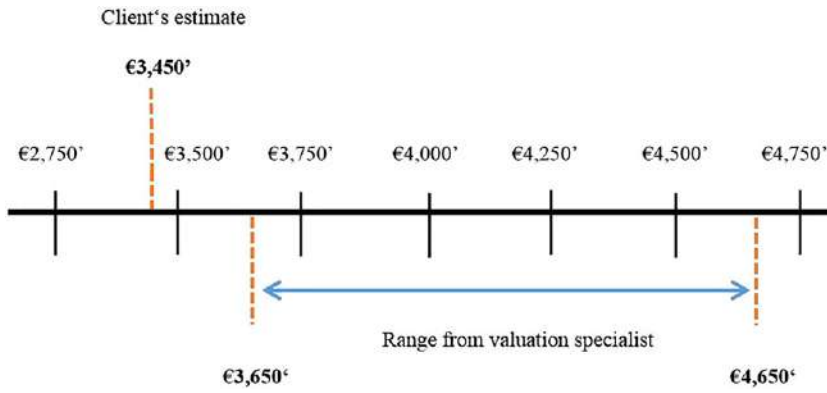
Next, participants received four pieces of evidence: two that approve and two that contradict management's estimate. After reviewing the case without time constraint, participants answered several questions concerning the accounting estimate and demographic data. Figure 3A shows the timeline of the experiment. The manipulation of client pressure is shown in Figure 3B.

The reporting of KAMs is only compulsory for listed companies. Because the Big 4 audit firms mainly audit these companies and thus tend to be better informed about the newly introduced KAM reporting requirements, we focused on auditors of Big 4 firms. One hundred and sixty-four German auditors participated in the study (from a total population of approximately 2,800 Big 4 auditors in Germany). These participants were recruited via two channels. First, 119 subjects from one of the Big 4 firms conducted the study during internal training sessions. Second, 1,000 paper versions of the study were mailed to a sample drawn from the population of the other three Big 4 firms (approximately 2,300 auditors). We obtained 45 responses through this survey. We excluded 19 participants because of incomplete responses with regard to key dependent variables, leaving us with 145 participants. Except for the variable measuring auditors' skeptical judgments, which was slightly lower in the group participating in the survey, there is no obvious evidence that the responses varied across the two channels.

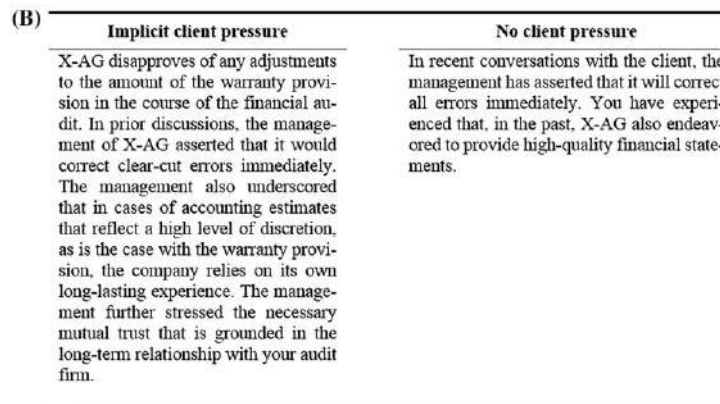
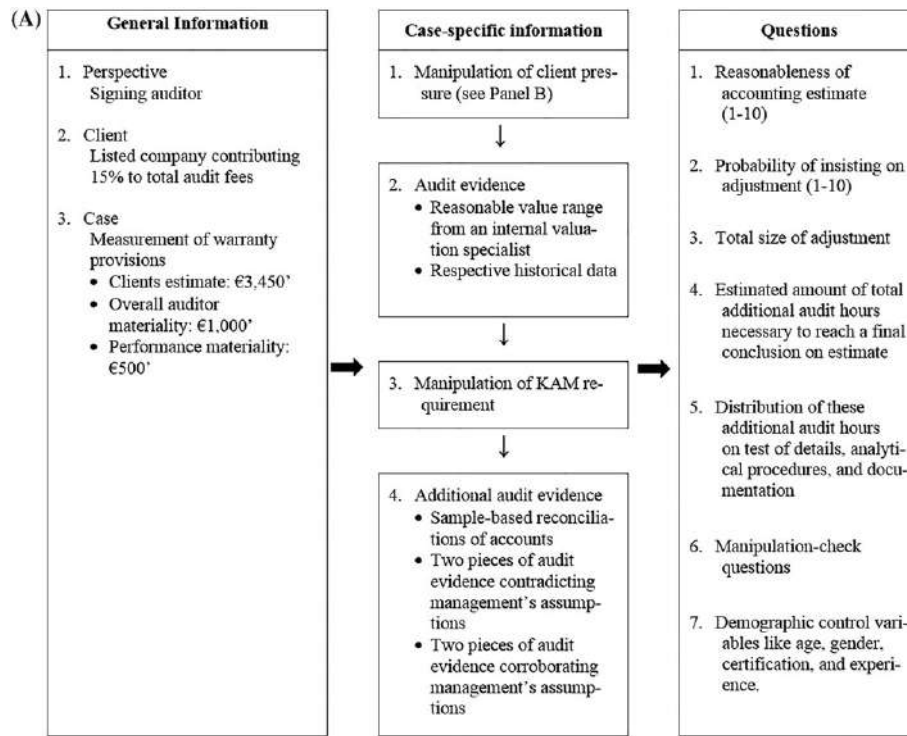
We included a manipulation check to test whether the participants had understood the meaning of KAM. Three subjects were excluded due to incorrect evaluation of these questions. Finally, we excluded one response due to extreme outlier values and another response of an associate because of doubtful experience. Out of the remaining 140 participants, 18 subjects did not respond to one or more questions regarding demographic data, leaving 122 subjects for the main analysis.

<sup>4</sup>In Figures 2, 3A and 4, ' stands for ,000.





**FIGURE 2** Client's point estimate and reasonable value range from valuation specialist [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]



**FIGURE 3** Experimental procedures and manipulation of client pressure: (A) experimental procedures; (B) manipulation of client pressure. KAM: key audit matter

Our participants are highly experienced, with an average audit experience of 13.6 years ( $SD = 7.6$  years). The average age is 40.4 years ( $SD = 8.4$  years) and 29.5% of the subjects are female. Whereas 32% (39) of the subjects hold the position of manager, 45% (55) are senior managers and 23% are in the position of partner or director (20 and 8 respectively). Of the subjects, 75% are certified public accountants. Further, subjects rated the case on a scale from 1 ("not at all understandable/realistic") to 10 ("very understandable/realistic"). Mean values of 7.98 (understandable) suggest that the case is, on average, understandable and 7.57 (realistic) (similar values are found in other experimental studies; e.g., Koch & Salterio, 2017, p. 122).

### 3.2 | Independent variables

We aimed to identify the possible effects of an additional KAM disclosure on auditors' JDM with respect to the matter reported and thus compared two different normative regimes: one with and one without the requirement to report KAM. Participants were put in a position where it had been decided that the estimate would be reported as a KAM due to its inherent uncertainty (excluding effects from the selection process), but a final conclusion about the reasonableness of the value and a potential adjustment was still pending. The control group without KAM reporting requirement was instructed that no KAM reporting takes place, as the respective norms are not yet binding. In order to exclude the effects from the KAM selection process, the control group was also informed that the warranty provision does qualify and would have been reported as a KAM. In addition, both groups were informed about the aim of the KAM reporting requirement, its content, and its influence on the audit judgment. The group with KAM manipulation received information that the evaluation of the warranty provision had been selected as a KAM. In order to make the manipulation more salient and to level different notions about the form and content of the KAM, this group also received a corresponding KAM regarding the audit of warranty provisions, which was worded as follows:

**Key Audit Matter–Warranty Provisions:**

*The measurement of the warranty provisions of X-AG reflects the best estimate according to IAS 37. The annual measurement was significant to our audit because this balance as of December 31, 2015 is material to the financial statement. In addition, management's assessment process is complex and is highly judgmental. As a result, the actual amount of warranties to materialize may be significantly different to that recognized on the balance sheet.*

*Our audit procedures to address the risk of material misstatements relating to warranty provisions included, among others, using valuation experts to assist in evaluating the assumptions and methodologies used by X-AG and critically evaluating evidence regarding the management's assumptions of the estimate.*

This wording of the KAM manipulation is closely based on the illustrative examples made by the IAASB (2015b) in form and content. In order to isolate the effects of the KAM disclosure requirement and to minimize possible confounding effects from the specific formulations in the KAM, special care was taken to ensure that the control group received the same information regarding the uncertainty of the warranty provision as communicated in the illustrative KAM (i.e., by stating that the evaluation made depends significantly on the client's assumptions).

Whereas prior studies operationalized client pressure strongly by varying multiple factors, including the degree of economic importance of the client and explicitly stated preferences (e.g., Brown & Johnstone, 2009; Hatfield et al., 2011; Messier & Schmidt, 2018), this study examines a more moderate form of implicit client pressure. We opted for a moderate manipulation of client pressure (as in Koch & Salterio, 2017) for several reasons. First, implicit client pressure seems to be more appropriate to mirror actual efforts to exercise pressure in the auditor–client relationship (Gibbins, Salterio, & Webb, 2001; Moreno & Bhattacharjee, 2003). Second, by emphasizing mutual goals between the auditor and the client and by claiming the benefit of doubt in cases of high estimation uncertainty, implicit client pressure seems to be more suitable to initiate a rationale from the perspective and in favor of the client. Third, this kind of one-dimensional manipulation avoids the risk of manipulating various constructs that can inhibit causal inference (Kadous & Zhou, 2016).

Following Koch and Salterio (2017), implicit client pressure is manipulated by using certain items that we placed in our case study: (1) the client does not favor any adjustment regarding the warranty provision; (2) whereas clear misstatements are corrected immediately, the client predominantly relies on his or her extensive experience in making accounting estimates with high uncertainty; and (3) in this regard, a basis of mutual trust is reflected in a long-lasting relationship (see Figure 3B for wording used). These items reflect implicit client pressure in a multifaceted construct. On the contrary, we informed the participants in the control group that the client focuses on high-quality financial reports and that all misstatements detected had been corrected in the past.

### 3.3 | Dependent variables

To measure the degree of skeptical judgment, participants had to evaluate the reasonableness (on a scale from 1 = "not at all reasonable" to 10 = "totally reasonable") of the accounting estimate provided by the client. To measure the degree of skeptical action, subjects rated the probability of insisting on an adjustment (on a scale from 1 = "not at all probable" to 10 = "highly probable") and the amount of the potential adjustment in euros. Finally, subjects answered manipulation check questions, rated how realistic and understandable the case was, and provided demographic and experience-related information.

### 3.4 | Manipulation checks and control variables

In order to check for the client-pressure manipulation, we followed Brown and Johnstone (2009) and asked participants to rate how strongly they would have to convince the client to disclose a higher accounting estimate in the financial statements (on a scale from 1 = "not at all strongly" to 10 = "very strongly"). This question approximates whether participants felt pressure without unmasking the manipulation of client pressure at hand. Whereas subjects in the client pressure manipulation have an average value of 8.15, subjects in the control group have an average value of 6.68 ( $t = -4.137, p = 0.000$ ). These values indicate that our manipulation was partially successful.

With regard to the KAM manipulation, it is important that participants have the necessary KAM-related knowledge in order to judge how the KAM reporting requirement may or may not affect their judgment. Thus, we asked subjects to indicate if the reporting on KAM always leads to a qualified opinion (no) and if KAM should highlight cases that have proved specifically important during the audit of the financial statements (yes).

To control for demographic data in our multivariate analyses, we also asked subjects to provide information regarding gender, age, work position, professional qualifications, and general audit experience in years. Finally, subjects also self-evaluated their knowledge with regard to International Financial Reporting Standards accounting and the audit of accounting estimates and provisions (on a scale from 1 = "none" to 9 = "very big"). Table 1 explains the definition and computation of all variables used.

## 4 | RESULTS

### 4.1 | Test of hypotheses

Table 2 sets out the results for the reasonableness assessment (H1a). The ANOVA for the assessment of the reasonableness of the accounting estimate shows no main effect for the KAM variable ( $F = 1.91, p = 0.170$ ). Thus, reporting of KAMs does not influence auditors' skeptical judgments and H1a is not supported.

**TABLE 2** Results for reasonableness assessment (REL); mean and SD (in parentheses)

A. Descriptives					
	KAM	No KAM	Total		
REL	4.91 (2.23) <i>n</i> = 54	4.38 (2.10) <i>n</i> = 68	4.61 (2.16) <i>n</i> = 122		
B. ANOVA					
	Source	df	MS	F-value	p-value
REL	KAM	1	8.83	1.91	0.170
$R^2 = 0.0317$ ; adj. $R^2 = 0.0071$ ; <i>n</i> = 122					

KAM: key audit matter.

Table 3 presents information on the effect of KAM on skeptical action. In the KAM setting the probability of adjustment declines; the adjustment amount drops by €117,528 on average and the probability-weighted adjustment amount decreases by €94,894 (a decline of about 33%). Whereas the ANOVA for the probability of adjustment shows a marginally significant effect ( $F = 3.16, p = 0.078$ ), the effects on the adjustment amount and the probability-weighted adjustment amount are highly significant ( $F = 7.54, p = 0.007$ ;  $F = 7.20, p = 0.0084$ ). Our results provide strong support for H1b stating that KAM disclosure affects auditors' skeptical actions. More specifically, the direction of the effect indicates a moral licensing effect.

The significant effect of KAM on skeptical action taken together with the insignificant effect on auditors' reasonableness assessments also provides indirect support for H1c. Although the direction of the KAM effect on both auditors' skeptical judgments and skeptical actions aligns with theory of moral licensing, the effect is only significant for auditors' skeptical actions. These results suggest a judgment-action gap between auditors' skeptical judgments and actions. Since REL and PROB use the same scale, the fact that KAM reporting has on average a positive impact of 0.53 on REL and a negative impact of 0.67 on PROB compared with the group without KAM reporting

**TABLE 1** Overview of variables

Variable	Definition and coding of variables
BIN_SIZE	0, if SIZE ≤€200,000; 1 otherwise
EXA	0, if no qualification; 1 if certified tax accountant; 2 if German certified public accountant
EXP	Total general financial statement audit experience in years
GEN	0, if female; 1 otherwise
KAM	0, if no key audit matter reporting requirement; 1 otherwise (first manipulation)
PRES	0, if no client pressure; 1 if implicit client pressure (second manipulation)
REL	Reasonableness of estimate on a scale from 1 = "not at all reasonable" to 10 = "totally reasonable"
PROB	Probability of insisting on an adjustment on a scale from 1 = "not at all probable" to 10 = "totally probable"
PROB_SIZE	Probability-weighted adjustment amount (composite measure of PROB and SIZE)
SIZE	Amount of adjustment in Euros



**TABLE 3** Results for probability of adjustment (*PROB*), adjustment amount (*SIZE*) and probability-weighted adjustment amount (*PROB\_SIZE*); mean and *SD* (in parentheses)

A. Descriptives					
	KAM	No KAM	Total		
<i>PROB</i>	6.31 (2.27) <i>n</i> = 54	6.99 (1.97) <i>n</i> = 68	6.69 (2.13) <i>n</i> = 122		
<i>SIZE</i>	270,030 (208,483) <i>n</i> = 54	387,558 (267,513) <i>n</i> = 68	335,538 (249,199) <i>n</i> = 122		
<i>PROB_SIZE</i>	190,561 (176,543) <i>n</i> = 54	285,455 (219,292) <i>n</i> = 68	243,453 (206,203) <i>n</i> = 122		
B. ANOVA					
	Source	<i>df</i>	<i>MS</i>	<i>F</i> -value	<i>p</i> -value
<i>PROB</i>	KAM	1	14.21	3.16	0.078
<i>R</i> <sup>2</sup> = 0.0328; adj. <i>R</i> <sup>2</sup> = 0.0082; <i>n</i> = 122.					
<i>SIZE</i>	KAM	1	445.80	7.54	0.007
<i>R</i> <sup>2</sup> = 0.0709; adj. <i>R</i> <sup>2</sup> = 0.0473; <i>n</i> = 122, <i>MS</i> and <i>SS</i> in '000,000,000.					
<i>PROB_SIZE</i>	KAM	1	291.90	7.20	0.008
<i>R</i> <sup>2</sup> = 0.0696; adj. <i>R</i> <sup>2</sup> = 0.0460; <i>n</i> = 122					

KAM: key audit matter.

also suggests that KAM has a stronger impact on auditor's skeptical actions. Additionally, the eta squared effect size of the KAM manipulation is higher for *PROB* than for the *REL* variable ( $\eta^2 = 0.026$  and 0.016 respectively). However, it should be noted that the auditor's action is also expressed in the adjustment amount (*SIZE*).

Table 4, panel A, provides descriptive statistics for the variables relevant for testing the hypothesized interaction effect (H2). The results of testing this effect are shown in panel B. The simple effects analysis shows that the difference in the measures for auditors' skeptical actions is only significant when client pressure is absent and turns insignificant when implicit client pressure is present. As the simple effects are less appropriate for the analysis of interaction effects and as ANOVAs can be less effective in detecting ordinal interactions (Buckless & Ravenscroft, 1990), we also performed planned contrast analysis (Guggenmos, Piercey, & Agoglia, 2018). A plausible planned contrast derived from the hypothesized interaction would contrast group 4 (implicit client pressure/KAM reporting) with the three remaining groups. However, the planned contrasts did also not show any significant interaction effects. Thus, our moderate client pressure manipulation does not lead to the hypothesized interaction effect and H2 is not supported.

Surprisingly, the negative effect of reporting KAM on skeptical action is lower when client pressure is present, and thus runs counter to our hypothesis stating that client pressure amplifies a moral licensing effect. One explanation for this result might be that, instead of evoking motivated reasoning, our client pressure manipulation rather triggered a mode of acting defensively and prudently. In this regard, our results are in line with studies stating that a general lack of professional skepticism itself is not the most pertinent problem in the audit of accounting estimates (Cannon & Bédard, 2017; Griffith, Hammersley, & Kadous, 2015).

## 4.2 | Additional analyses and robustness checks

In order to better interpret the differences in the adjustment amount economically, we dichotomized the variable adjustment amount (*SIZE*) into a binary variable (*BIN\_SIZE*). Whereas group 1 contains all subjects who provided an adjustment between €0 and €200,000, group 2 contains all subjects who determined the adjustment to be greater than €200,000. We selected €200,000 as a border value because it reflects the amount necessary for the estimate to reach the lower limit of the reasonable range of values provided by the internal valuation specialist (see Figure 2). We assume that the assessment of the internal expert in most cases provides an appropriate indication for a reasonable adjustment and that any deviation is somewhat imprudent.<sup>5</sup> Figure 4 shows the respective number of subjects in group 1 (imprudent adjustment) and group 2 (reasonable adjustment) for both KAM manipulations.

It can be shown that the proportion of auditors with and without KAM manipulation within group 1 almost reverts in group 2. Therefore, it seems to be the case that an imprudent adjustment is more likely in the KAM reporting scenario. To analyze this pattern in detail and to control for potential differences in demographic data, we estimate a logistic regression model. The model is given by the following equation, where  $F\{\cdot\}$  represents the logistic distribution function:

$$\Pr(\text{BIN\_SIZE} = 1) = F\{\beta_0 + \beta_1 \times \text{KAM} + \beta_2 \times \text{PRES} + \beta_3 \times \text{REL} + \beta_4 \times \text{GEN} + \beta_5 \times \text{EXA} + \beta_6 \times \text{EXP} + \varepsilon\}$$

The dependent variable *BIN\_SIZE* takes the value 1 if the subject provides an adjustment value less than or equal to €200,000 (group 1)

<sup>5</sup>We are aware that other significant audit evidence contradicting that of the internal specialist might lead to an auditor's final conclusion that deviates from the specialist's opinion.

**TABLE 4** Results for interaction effect on skeptical action variables; mean and SD (in parentheses)

A. Descriptives					
	KAM	No KAM	Total		
<i>PROB</i>					
Implicit client pressure	6.53 (2.19) n = 30	6.84 (1.76) n = 32	6.70 (1.97) n = 62		
No client pressure	6.04 (2.39) n = 24	7.11 (2.16) n = 36	6.68 (2.30) n = 60		
<i>SIZE</i>					
Implicit client pressure	311,055 (218,222) n = 30	379,687 (272,047) n = 32	346,478 (247,884) n = 62		
No client pressure	218,750 (187,554) n = 24	394,555 (267,085) n = 36	324,233 (252,138) n = 60		
<i>PROB_SIZE</i>					
Implicit client pressure	225,844 (193,562) n = 30	278,125 (225,330) n = 32	252,827 (210,496) n = 62		
No client pressure	146,458 (144,662) n = 24	291,972 (216,777) n = 36	233,766 (202,984) n = 60		
B. ANOVA, simple effects and planned contrasts					
ANOVA					
Variable	Source	df	MS	F-value	p-value
<i>PROB</i>	KAM × PRES	1	4.29	0.96	0.330
<i>SIZE</i>	KAM × PRES	1	85.70	1.45	0.231
<i>PROB_SIZE</i>	KAM × PRES	1	64.86	1.60	0.209
Simple effects of KAM vs. no KAM					
Constant factor	Variable	Difference	t-value	p-value	
Implicit client pressure	<i>PROB</i>	-0.310	-0.58	0.566	
	<i>SIZE</i>	-68.632	-1.11	0.269	
	<i>PROB_SIZE</i>	-52.281	-1.02	0.309	
No client pressure	<i>PROB</i>	-1.069	-1.91	0.058*	
	<i>SIZE</i>	-175.805	-2.74	0.007***	
	<i>PROB_SIZE</i>	-145.513	-2.74	0.007***	
Planned contrasts					
Variable	Contrast	df	F-statistic	p-value	
<i>PROB</i>	0.397	1	0.01	0.768	
<i>SIZE</i>	59.828	1	0.15	0.698	
<i>PROB_SIZE</i>	39.023	1	0.09	0.760	

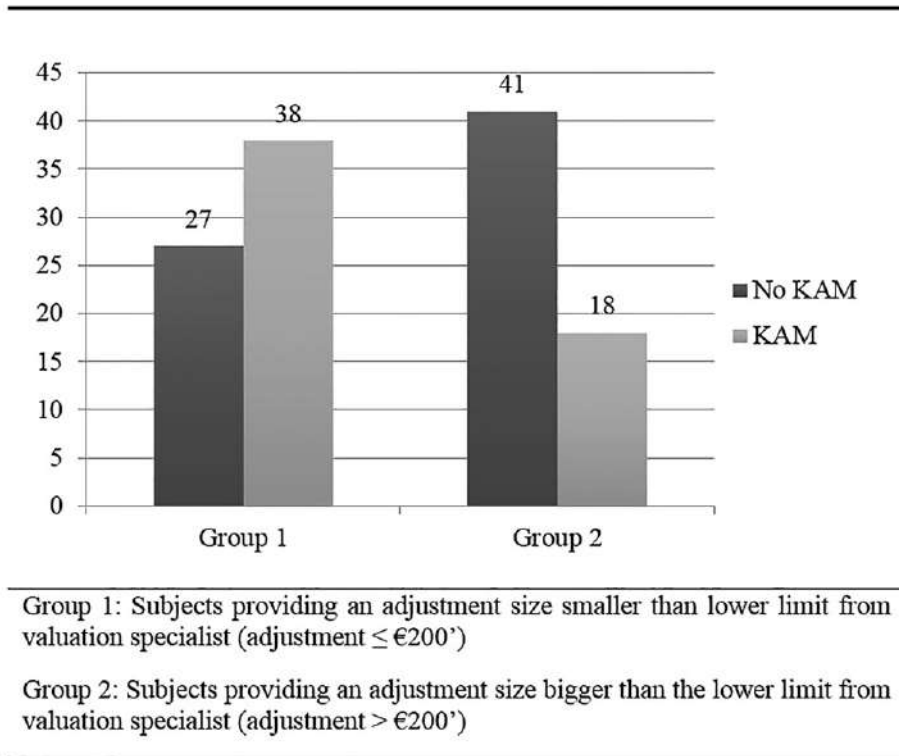
Except for the group client pressure/key audit matter (KAM) reporting with a weight of -3, we used a weight of 1 for all other groups.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

and the value 0 for an adjustment >€200,000 (group 2). In addition to the manipulated variables of the KAM reporting requirement (KAM) and implicit client pressure (PRES), the model also controls for gender (GEN), whether subjects are certified public accountants or certified tax accountants (EXA) and the total general auditing experience in years (EXP). As prior analysis indicates that skeptical judgment is not significantly affected by either manipulated variable, we also include the subject's reasonableness assessment (REL) as an explanatory variable (see Table 1 for a description of the variables). Owing to prior results, we also exclude the interaction term between the manipulated

variables KAM and PRES. The variance inflation factors for the independent variables are all below 1.87, indicating no multicollinearity. The results for the regression model are illustrated in Table 5.

With regard to the KAM variable, the odds of being in group 2 (SIZE > €200,000) decrease by a factor of 0.1496 if the KAM reporting requirement is present. Thus, the negative effect of the KAM variable on the adjustment size shown in the prior analysis remains highly significant ( $z = -3.59$ ,  $p = 0.000$ ) while controlling for demographic- and experience-related differences. The pressure manipulation also shows no significant influence. Two additional results are noteworthy.



**FIGURE 4** Proportion of subjects in group 1 and 2 by key audit matter (KAM) manipulation

**TABLE 5** Results of logistic regression

Variable	Coefficient (log Odds)	Coefficient (Odds ratio)	SE (robust)	z-statistic	p-value	VIF
KAM	-1.8998	0.1496	0.5298	-3.59	0.000***	1.19
PRES	0.3368	1.4005	0.4270	0.79	0.430	1.02
REL	-0.3674	0.6925	0.1113	-3.30	0.001***	1.11
GEN	1.4260	4.1620	0.4802	2.97	0.003***	1.05
EXA						
Tax-acc.	-3.4939	0.0303	1.0339	-3.38	0.001***	1.57
CPA	-2.2254	0.1080	0.7326	-3.04	0.002***	1.87
EXP	0.0214	1.0216	0.0390	0.55	0.586	1.52
Constant	2.9407	18.9306	0.9897	2.97	0.003	

$n = 122$ , Wald  $\chi^2 = 27.93$  ( $p = 0.0002$ ).

Pseudo  $R^2$  (McFadden) = 0.2294.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

The model has been calculated with robust SEs.

First, if the subject is male, the logged odds of being in group 2 increase significantly ( $z = 2.97$ ;  $p = 0.003$ ). Therefore, female subjects have a tendency to propose relatively smaller adjustments than male subjects do. This result contrasts with research showing that female auditors generally perform better in ethical and moral reasoning (Bailey, Scott, & Thoma, 2010; Hottegindre, Loison, & Farjaudon, 2017), as well as current research presenting the positive effects of female auditors on measures of audit quality (Al-Dhamari & Chandren, 2017; Cameran, Dittillo, & Pettinicchio, 2018; Hardies, Breesch, &

Branson, 2016; Ittonen, Vähämä, & Vähämä, 2013; Lee, Nagy, & Zimmermann, 2018).

Second, if the subject is a certified tax accountant or a German certified public accountant, the logged odds of belonging to group 2 decrease significantly, by  $-3.4949$  and  $-2.2254$  respectively. Thus, participants with certified tax or accounting qualifications propose significantly smaller adjustment amounts than the control group with no certified qualification. One explanation for this result is that public accountants with certification are more strongly socialized with the

economic goals of their company. Irrespective of the presence of client pressure, persons with certification might have a relatively stronger tendency to incorporate more strategic, business-related goals, like the retention of the client, into their judgment. The difference between certified tax accountants and certified auditors can further be explained by tax professionals pursuing the role of client advocate (Pinsker, Pennington, & Schafer, 2009) rather than a role that focuses on independence of judgment and professional skepticism. This argument is in line with current research showing that auditors with higher client identification are more likely to make concessions to clients' preferences (Bamber & Iyer, 2007; Herda & Lavelle, 2015; Svanberg & Öhman, 2015). Finally, Bobek, Hageman, and Radtke (2015) showed that the influence of the professional role on the evaluation of a contentious issue is greater for male participants than for female participants. Following this line of argumentation, our gender effect may also be explained by the male participants reacting more defensively than their female counterparts when confronted with ambiguity and possible impediments to auditor independence.

Besides these findings, it can be assumed that KAM reporting may impact the amount and distribution of audit effort as an additional closely related dimension of auditors' actions as well. We asked subjects to state the total amount of additional audit hours necessary to reach a final conclusion on the accounting estimate.<sup>6</sup> We anchored the amount of audit hours already spent on the issue to 40 hours (see also Jenkins & Haynes, 2003). Afterwards, subjects had to distribute the additional audit hours on three preselected audit procedures: analytical procedures, test of details, and documentation. It may be assumed that, in the face of making public the most important audit matters, a risk-averse auditor may develop a greater safety awareness related to the matters communicated as a KAM and subsequently perform relatively more audit procedures.

On average, subjects rated 19.18 additional audit hours necessary to reach a final conclusion on the estimate and on average allocated 29.21% of this additional effort to documentation. The ANOVAs and simple effects analysis (not tabulated) show that none of the manipulated variables (*KAM*, *PRES*, *KAM* × *PRES*) had a significant effect on one of the two measures (additional audit hours, percentage of additional audit hours allocated to analytical procedures, test of details and documentation). Getting deeper insights into the drivers of the distribution of additional audit hours might be a promising field for further research.

As a robustness check, we computed a variety of alternative ANOVAs. First, we ran an analysis with all subjects irrespective of whether complete demographic data were provided (enlarged sample with  $n = 140$ ). Apart from deviations in the significance of the *KAM* main effect regarding the probability to insist on an adjustment (significant at the 5% level compared with 10% in the main analysis) and the size of the adjustment amount (significant at the 5% level compared with 1% in the main analysis), all results remained the same when

using the enlarged sample. We also ran ANOVAs for the dependent variables with the date of data collection as an explanatory variable. For all variables, the date of data collection had no significant influence. Finally, we construed a binary variable reflecting client pressure (as in Koch & Salterio, 2017) as perceived by the experimental subjects. For this, we used the manipulation check question, asking participants to rate how much they would have to convince the client to disclose a higher accounting estimate in the financial statements (from 1 = "not at all strongly" to 10 = "very strongly"). Using a median split, we divided participants into one group reflecting lower perceived client pressure (all participants with ratings <8) and one group with higher perceived client pressure (participants with ratings >7). When we employed this measured variable of perceived client pressure and reran the ANOVAs with the enlarged sample, the results only changed with respect to the *KAM* main effect on the reasonableness of the accounting estimate, which then turned out to be moderately significant ( $F = 3.26, p = 0.073$ ).

## 5 | CONCLUSIONS

In line with the intended objective of the *KAM* reporting requirement, recent research has focused on the informational value of reporting *KAMs* on a market and individual level. Although it is sometimes claimed that the reporting on *KAMs* can also enhance auditors' judgments, only a very few studies have analyzed how the new reporting requirement can influence auditors' *JDM* and the audit process itself. Given the decision that an accounting estimate will be subject to a *KAM*, we investigated whether this knowledge would be anticipated by the auditor and influence his or her final conclusions on the accounting estimate and the additional amount and distribution of audit effort.

We conducted an experiment in which highly experienced German Big 4 auditors evaluated an aggressively pro-client biased accounting estimate. We manipulated the *KAM* reporting requirement (no reporting *KAM* vs. reporting *KAM*) and client pressure (no client pressure vs. implicit client pressure). Participants were asked to rate the reasonableness of the estimate (measure of skeptical judgment), to assess how likely they would insist on an adjustment, and to provide the amount of the adjustment (measures of skeptical action).

Our results are as follows. First, we do not show a significant influence of the *KAM* reporting requirement on auditors' skeptical judgment in the form of the assessment of the reasonableness of the accounting estimate (H1a). Second, with regard to H1b, we find a significant effect of the *KAM* manipulation on our measures of skeptical action: Both the probability of insisting on an adjustment and the amount of an adjustment are significantly *lower* for subjects with a *KAM* reporting requirement. Therefore, rather than enhancing skeptical action by inducing a perception of heightened accountability, the *KAM* reporting requirement seems to provide auditors with leeway to acquiesce to the clients' preferences. These results indicate a moral licensing effect by which auditors, due to the additional reference to matters of higher uncertainty in the *KAM* paragraph, can feel more

<sup>6</sup>In the case study it is stated that for obtaining audit evidence so far, 40 audit hours have been used. The participants were asked about the total additional number of audit hours needed for the collection of audit evidence in order to reach a final conclusion on the accounting estimate.

"morally licensed" to circumvent adjustments in the financial statements. Although such behavior has been documented in prior studies focusing on other disclosure requirements (Griffin, 2014; Koch & Schmidt, 2010; Loewenstein et al., 2011), we provide preliminary evidence that KAM reporting can have the same unintended consequences in the field of judging accounting estimates (Ratzinger-Sakel & Theis, 2018). Taking into account that the KAM disclosure does not affect auditors' skeptical judgments, these combined results further corroborate the existence of a judgment-action gap (H1c).

Third, we do not find supportive evidence that implicit client pressure enlarges the moral licensing effect of the KAM disclosure (H2). The analysis of these interactions turned out to be insignificant for both variables of skeptical judgment and action. Additional analysis showed that both manipulated variables had no significant influence on the amount and distribution of additional audit effort. Taking audit effort as another dimension of skeptical action, these results support the notion that action which does not become visible for the client is not affected by KAM reporting. More precisely, on the one hand, we find support that externally not visible action (reasonableness assessment and additional audit effort) is not affected by the KAM reporting requirement. On the other hand, the KAM reporting requirement influences the choice of external visible action in the form of significantly smaller adjustment amounts. Overall, KAMs have unintended "real effects" on auditor's externally visible action.

This study is subject to several limitations. First, KAMs only apply to listed companies under the IAASB regime or to public interest entities under the EU regime. Second, we did not investigate the factors that determine what kind of accounting issues will be discussed with those charged with governance and eventually disclosed as a KAM. Thus, our study does not examine if the selection process leads to a more focused risk orientation of auditors. Third, every experimental study is subject to external validity threats. In our study, it is especially questionable how the mere depiction of an illustrative KAM and the manipulation of implicit client pressure via statements in the case can imitate a real-life audit setting. Fourth, our case illustrates the reasoning of individual auditors. Audit judgments and judgment biases in groups or in teams might be different. With regard to the sample selection, a further limitation lies in the focus on Big 4 auditors.

Our results and limitations represent excellent opportunities for future research. With regard to the KAM selection process, future research can provide evidence for whether the KAM selection process is connected to the auditor's risk orientation, which in turn could foster a more efficient and effective audit. On the preparer's side, it can be assumed that the reporting on KAMs also influences the amount and quality of information disclosed in the notes concerning the respective accounting issue. Future research could also address the role of other corporate governance bodies, like audit committees, and how their composition and strength may affect the KAM reporting process. There is also a lack of evidence about the role of KAMs in the process of negotiating adjustments between the auditor and the client. Of particular interest is the importance of KAMs as an instrument to cope with client pressure.

Further to these open questions related to the reporting on KAMs, our results warrant further research with regard to the influence of gender and auditors' qualifications. Another area of future research relates to auditor moral and ethical reasoning. Our study supports the notion that KAMs can serve as a moral license to waive an adjustment. Recent research shows that the strength of this effect depends on individual beliefs about moral values, which in turn are shaped by an individual's socio-cultural background (Simbrunner & Schlegelmilch, 2017; Ward, 2015). Therefore, it may be fruitful to conduct this experiment in different cultural settings (Nolder & Riley, 2014).

Our results are important for financial statement users, preparers, and standard-setting bodies alike. For users of financial statements, our results give preliminary evidence that KAMs are rightly perceived as a disclaimer. For the standard-setting bodies, it is noteworthy that the analysis of disclosure requirements cannot be constrained to an informational perspective of financial-statement users, but should also include a behavioral perspective on auditors' JDM. In the realm of the financial audit, our results and the results of prior studies together specifically highlight that creating accountability by public disclosure is demanding. The intended addressee of the KAM could be perceived as too distant or diffuse to create a psychologically effective sense of accountability during auditors' JDM. In contrast, other instruments, such as internal documentation requirements, have shown positive accountability effects, especially when the addressee had a personal or professional relationship with the person held accountable.

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