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Weik, Andreas; Eierle, Brigitte; Ojala, Hannu

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# What drives voluntary audit adoption in small German companies?

Andreas Weik<sup>1</sup>  | Brigitte Eierle<sup>1</sup> | Hannu Ojala<sup>2,3</sup>

<sup>1</sup>University of Bamberg, Bamberg, Germany

<sup>2</sup>Aalto University School of Economics, Helsinki, Finland

<sup>3</sup>University of Tampere, Tampere, Finland

## Correspondence

Andreas Weik, University of Bamberg, Feldkirchenstraße 21, Bamberg 96047, Germany.

Email: andreas.weik@uni-bamberg.de

The purpose of this study is to validate the drivers of voluntary audit in small companies identified in previous research and uncover additional determinants related to agency conflicts with owners. For our research we use the German institutional setting, documented in the literature as being very different from its Anglo-Saxon equivalent. Based on a random sample of 405 small companies responding to a postal questionnaire survey, we find that the proportion of owners not involved in management, the subsidiary status of a company, a company's legal form, and the importance of financial statements' information to management activities all increase the likelihood of voluntary audit. In contrast, firms that outsource accounting tasks to an external expert are less likely to opt for voluntary audit, suggesting that an external expert's involvement substitutes for an external audit. In addition, owing to the absence of a statutory audit history for small companies in Germany, we find that voluntary audits are less common compared with findings from previous studies.

## KEYWORDS

Agency theory, auditor choice, external audit

## 1 | INTRODUCTION

In this study based on small German companies, we examine factors affecting the owner-manager's decision to hire an auditor. This study advances our understanding of voluntary auditing for small companies in an economically important bank-dominated code law country, Germany, where voluntary audit drivers have not previously been examined. Because of its exceptionally high exemption thresholds, Germany makes possible the broadest examination of voluntary auditing choices in Europe. Indeed, because most governance research has examined US firms, Carcello, Hermanson, and Ye (2011) call for more focus on non-US firms, particularly firms in Continental Europe. Those papers that have examined non-US firms have tended to study other countries that follow Anglo-Saxon traditions of governance (e.g., Australia, Canada, the UK).

The European Commission has recently adopted a “think small first” approach, which attempts to reduce the administrative requirements for small companies. This approach assumes that small entities carry a disproportionately high burden of administrative costs, covering, for instance, the preparation of full financial statements and auditing. Despite the need for research data to support political positions concerning costs and benefits or underlying reasons behind small firms' economic decisions, the evidence regarding private companies' financial accounting and auditing decisions remains very limited.

Although 99% of all businesses are small and medium sized (European Union [EU], 2014), possibly because it is more complex to access private companies' data, their voluntary audit drivers have been examined far less often than the factors for audit quality in the case of publicly listed companies. This lack of research evidence may, therefore, lead to inappropriate generalization as a result of findings from

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previous research studies having been gathered primarily from data based on publicly listed companies or Anglo-Saxon accounting settings. According to the synthesis of prior auditing research on private companies, Langli and Svanström (2014) argue that:

*The differences that exist between private and public companies are so large and fundamental that without careful consideration we cannot rely on findings for public companies when we want to understand the role of auditing in private companies.*

Responding to this call for additional evidence on voluntary audit drivers and accounting processes in private companies, we gathered survey questionnaire data from 405 usable responses by small private companies in Germany regarding financial statements' information for the financial year ending 2011. The data centered around questions examining voluntary audit drivers that relate to: (i) agency conflicts with owners; (ii) agency conflicts with lenders; (iii) the importance of financial statements for management activities; and (iv) the outsourcing of accounting tasks.

Our data show that voluntary audits are considerably less common among German firms than they are with firms in other countries. While previous studies have found voluntary audit ranging between 26% and 80% (see Table 5) of businesses, we find that only 12% of our sample companies opt for a voluntary audit. Our results indicate that managers from countries where they have been subject to mandatory audit regimes value the cost and benefits resulting from a voluntary audit very differently from those who have not, demonstrating that the voluntary audit decision is likely to be influenced by previous habits (Niemi, Kinnunen, Ojala, & Troberg, 2012; Oliver, 1991).

Regarding the drivers of voluntary audit, in line with previous research, we find that the proportion of company owners who are not involved in management (e.g., Collis, 2010, 2012; Seow, 2001; Tauringana & Clarke, 2000) and the importance that managers place on accounting information for management accounting purposes (Collis, 2010, 2012; Collis, Jarvis, & Skerratt, 2004; Niemi et al., 2012) increase the likelihood of an auditor being hired voluntarily. In contrast with previous studies on voluntary audit, we cannot find support for the status as a family firm (e.g., Collis, 2010; Collis et al., 2004), ownership dispersion (Dedman, Kausar, & Lennox, 2014), or leverage (Carey, Simnett, & Tanewski, 2000; Dedman et al., 2014; Tauringana & Clarke, 2000) impacting on a firm's voluntary audit decision. However, extending previous research, we do find evidence that the legal form in which a company operates, the status as a subsidiary, and outsourcing are further factors impacting on a manager's voluntary audit decision. By further examining the professional qualifications of those to whom accounting tasks are outsourced, we provide evidence that outsourcing accounting tasks to an external tax advisor decreases the likelihood of a voluntary audit, whereas outsourcing accounting tasks to an external auditor increases the likelihood of a voluntary audit. Subject to the professional qualifications of those to whom financial accounting tasks are outsourced, this result suggests that auditing can play a substitutive or a complementary role.

Our study contributes to the literature as follows. First, it validates earlier research findings from other jurisdictions in an institutional setting that has been documented in the literature as being

very different from the Anglo-Saxon regime (Alexander, Britton, Jorissen, Hoogendoorn, & van Mourik, 2014) and which lacks a statutory audit history for small companies. Second, our study takes a more profound approach than earlier studies (e.g., Niemi et al., 2012) in examining the link between the voluntary audit decision and outsourcing accounting tasks. Considering the different professional qualifications of those to whom accounting tasks are outsourced, our study is the first to discuss the complementary versus substitutive role of auditing in a small company setting. Third, our study contributes by examining drivers of voluntary audit related to agency conflicts with owners (the legal form of the company, the existence of a supervisory board, and the status as a subsidiary) that have not yet been documented in prior research. By investigating the impact of nonmandated supervisory boards on voluntary audit decisions in small companies, we also add to the literature (on listed firms) discussing the complementary/substitutive relationship between governance mechanisms and external auditing.

The remainder of our paper is organized as follows. In Section 2 we provide a brief description of the institutional and regulatory setting (Germany). We discuss relevant prior literature and develop our hypotheses in Section 3, followed in Section 4 by a description of the data and models used in our empirical tests. Results from these tests are reported in Section 5. Thereafter, our paper concludes with a brief summary of the main findings and implications in Section 6.

## 2 | INSTITUTIONAL AND REGULATORY SETTING

Auditing regulation in the member states of the European Community (EC) or the EU has to comply with EC/EU directives. The Fourth Directive 78/660/EEC according to Article 51.1(a) in conjunction with Article 1 required limited liability companies to have their accounts audited by one or more persons authorized to carry out such audits. However, according to Article 51.2, member states of the EC were permitted to provide an option enabling qualifying companies to forego the statutory audit. According to Article 11 in conjunction with Article 12, such qualifying companies were those that did not exceed two out of three size thresholds—only the maximum thresholds that member states could set were specified—regarding total assets, turnover, and the average number of employees in two consecutive financial years. In 2013 the Fourth Directive was replaced by Directive 2013/34/EU. This new directive according to Article 34.1 in conjunction with Article 1 requires limited liability companies that are medium-sized, large, or of public interest to have their accounts audited. As with requirements from the Fourth Directive, there could also be companies that do not need to have their accounts audited, therefore, unless they are of public interest or, according to Article 3.2 in conjunction with Article 3.10, exceed two out of three size thresholds regarding total assets, turnover, and the average number of employees in two consecutive financial years. As can be seen, depending on member states' interpretations of the directives, different settings can exist within the EU, first due to various definitions of the size criteria for small companies and second due to a possible option for qualifying companies to forego a statutory audit.

Currently, according to § 267 (1) of the German Commercial Code (HGB) companies are classified as small if they do not exceed two out of three size thresholds in two consecutive years (total assets: €6,000,000; turnover: €12,000,000; average number of employees: 50).<sup>1</sup> In Germany the financial statements of limited liability companies (e.g., *Aktiengesellschaften* [AG], *Kommanditgesellschaften auf Aktien* [KGaA], *Gesellschaften mit beschränkter Haftung* [GmbH]), and certain commercial partnerships with limited liability (e.g., *Gesellschaft mit beschränkter Haftung & Co. Kommanditgesellschaft* [GmbH & Co. KG]) that do not qualify as small have to be audited (§ 316 (1) HGB and § 264a HGB). So, Germany uses the EU option to exempt small companies from statutory audits and thereby sets the thresholds at the EU maximum. Since small companies in Germany account for about 89% of all firms (Collis, 2010) and a statutory audit requirement may be associated with significant costs as well as limited benefits for small companies (Directive 2013/34/EU), the audit exemption regime is of great economic importance.

Literature states that, owing to a higher demand for control mechanisms, the accounting profession developed earlier in countries where equity financing plays a major role, as opposed to countries where banks are the major providers of finance for business activities, and that the accounting profession's impact on local financial reporting practices is accordingly larger in countries where the accounting profession is well organized than in countries with smaller and later developed professional organizations (Alexander et al., 2014). Owing to its traditional emphasis on the importance of banks for business financing, Germany's accounting profession is not comparable with that in the UK (Haller, 2003; Nobes & Parker, 2016).<sup>2</sup> As opposed to the UK, the German auditing profession has a rather short tradition (Alexander et al., 2014; Haller, 2003) and is comparably weak (Nobes & Parker, 2016). In Germany, a statutory annual audit was first introduced for AGs and KGaAs only in 1931, whereas GmbHs have been subject to a mandatory audit regime only since 1985, when EU requirements were implemented in German law (Eierle, 2005). For GmbH & Co. KGs a statutory audit requirement was implemented only as late as 2000 (Eierle, 2005). Moreover, audit exemptions have always been very generous in Germany. Small companies in the legal form of the GmbH or the GmbH & Co. KG (the major legal forms for small and medium-sized firms with limited liability in Germany; see Table 1) have never been subject to a mandatory audit regime, and small AGs/KGaAs have been exempted from a mandatory audit for over 30 years (Eierle, 2005; Haller, 2003). Regarding the exemption criteria for small companies, Germany has always implemented the maximum size criteria possible under the EU accounting directives.

Accordingly, the audit exemption regime in Germany is very different from those covered by previous studies on voluntary audit, such as in the UK (e.g. Collis, 2012; Dedman et al., 2014) or Finland

**TABLE 1** Legal form choices of small companies with limited liability in Germany

Legal form	Proportion (%)
AG/KGaA	1.05
GmbH/GmbH & Co. KG	98.95

Analysis based on the population of 733,949 companies used for our sample selection; see Section 4.1 for further details.

(Niemi et al., 2012; Ojala, Collis, Niemi, Kinnunen, & Troberg, 2016), where many small companies have only recently been relieved from the onus of a mandatory audit regime after an increase in size criteria. As institutional theory emphasizes the role of habit on organizations' attempts to obtain stability and legitimacy (Oliver, 1991), firms' decisions to opt for voluntary audit may be driven by previous practices and resulting expectations from their stakeholders (Niemi et al., 2012). Furthermore, unlike the UK, Germany has always implemented the maximum size criteria possible under the EU accounting directives and has, compared with Finland (total assets: €100,000; turnover: €200,000; average number of employees: 3 [Ojala et al., 2016]), still considerably higher thresholds for small companies' audit exemptions. In this respect, Germany provides a very different setting from that in the UK and Finland, for example, and is, moreover, free from the customary statutory audit history present in other countries.

Furthermore, unlike the UK's financial environment, accounting and taxation in Germany have traditionally been very strongly linked (Alexander et al., 2014; Schildbach, 2009), and consequently smaller companies usually prepare only one set of financial statements for financial accounting and tax purposes (Haller, 2003; Loitz, 2014). Owing to this strong linkage, tax advisors play a crucial role in providing accounting services (Loitz, 2014). Accordingly, it is important to note that the audit and tax professions are strongly regulated in Germany, and to provide tax advisory services one must first pass a special state examination, § 35 StBerG (tax advisory act). In addition, financial statements prepared for tax purposes are subject to the tax enforcement regime, which is the case even if companies prepare only one set of financial statements for financial accounting and tax purposes. Since these factors might impact on a company's demand for voluntary audit, this is a further reason why Germany provides an important setting for studying voluntary audit.

### 3 | PREVIOUS LITERATURE AND HYPOTHESES DEVELOPMENT

The role of financial reporting differs between public and private companies. While public companies' financial reports serve the investment decision needs of financial markets, in private companies the main decisions relate to taxation and dividend distribution (Ball & Shivakumar, 2005). According to agency theory, the demand for auditing arises from information asymmetries and conflicts of interest between principals and agents (Jensen & Meckling, 1976; Watts & Zimmerman, 1986). Agency theory (Jensen & Meckling, 1976) suggests that audited financial reports play an important role in supporting relationships with investors as well as other principals who are distant from the actions of management and cannot, therefore, otherwise verify company information. In small companies, those principals include external shareholders, lenders, and suppliers (Power, 1997), who may also require audited accounts.

#### 3.1 | Agency conflicts with owners

Conflicts of interest between owners (principals) and managers (agents), as well as information asymmetries arising from the

separation of ownership and control, will give rise to agency costs (Jensen & Meckling, 1976; Watts & Zimmerman, 1986). Provision of financial reports can reduce these information asymmetries. However, owing to conflicts of interest, it cannot be guaranteed that management will report truthfully, and hence the need for an external audit is established (Gjesdal, 1981). For small businesses it can be argued that owners are often involved in management, thereby suggesting a lower level of agency costs resulting from the separation of ownership and control (Carsberg, Page, Sindall, & Waring, 1985; Collis et al., 2004; Collis & Jarvis, 2000); this in turn limits the need, therefore, for an independent assurance on financial statements (Directive 2013/34/EU). Nevertheless, one must be aware that small companies are heterogeneous in nature, and not all of them are owner-managed. Thus, a complete absence of owner-related agency conflicts in small firms is very unlikely (Coppens & Peek, 2005; Page, 1984), which may, therefore, reveal a need for audited financial accounting information. In line with this argument, previous research analyzing small firms in the UK finds that a voluntary audit is more likely for small companies with shareholders who are not involved in management (Collis, 2010), have a higher number of nondirector shareholders (Seow, 2001), or lower managerial share ownership (Taurigana & Clarke, 2000). However, there are also studies that could not find a significant relationship between the demand for a voluntary audit and the existence of external owners without access to management information (e.g., Collis, 2010, for Danish companies) or which even found a significant negative relationship (e.g., Collis, 2012, for [non-micro] small companies in the UK). Based on our theoretical arguments herein and previous research findings from other countries, therefore, we propose the following hypothesis:

**H1a.** *Voluntary audit is more likely the higher the proportion of owners who are not involved in management.*

Additionally, within the German context, Kaya (2010) argues that varying levels of information asymmetry and resulting agency conflicts between shareholders and management also depend on a company's legal form, which gives rise to differences in owners' information rights. In Germany, shareholders of GmbHs (and similarly GmbH & Co. KGs) have more comprehensive information rights than the shareholders of an AG (Kaya, 2010), which in the latter case may increase the demand for voluntary audit. This leads us to the following hypothesis:

**H1b.** *Voluntary audit is more likely for companies operating in the legal form of an AG.*

Alternatively, discussion in prior literature regarding larger and listed companies looks at whether an external audit plays a complementary or substitutive role to internal corporate governance mechanisms (e.g., Hay, Knechel, & Ling, 2008; Knechel & Willekens, 2006; Zaman, Hudaib, & Haniffa, 2011). Since outside directors and audit committee members will be concerned about their personal exposure and financial loss that could result from litigation in the event of management fraud or some other scandal related to the organization, they may demand external assurance. In line with this argument, research covering listed companies finds a positive relationship between the strength of corporate governance mechanisms (such as the existence

of an audit committee) and audit fees, thereby confirming the complementary role of an external audit (Carcello, Hermanson, Neal, & Riley Jr., 2002; Hay et al., 2008; Knechel & Willekens, 2006; Zaman et al., 2011). However, Knechel and Willekens (2006) argue that controls are complementary only as long as they are voluntary. Since mandated controls do not result from an endogenous demand for control, stakeholders will balance the externally imposed (nonefficient) requirement for internal control mechanisms against the endogenous demand for other forms of control (such as an external audit; Knechel & Willekens, 2006). In line with this argument, Knechel and Willekens (2006) find in the case of Belgian listed companies that audit fees are lower when a company discloses a relatively high level of compliance risk management and interpret this result as suggesting that auditing is complementary only if controls are nonmandated. Although in prior literature the evidence on the substitutive/complementary role of external auditing is discussed only for listed companies, the underlying rationale applies equally to small nonlisted firms and their demands for voluntary audit. In the complementary view, the existence of governance mechanisms (such as a supervisory board) in small companies may lead to higher demands for voluntary audit. However, according to the substitution view, a higher demand for voluntary audit could be expected only if the implementation of a supervisory board is nonmandated (which is the case for GmbHs or GmbH & Co. KGs; AGs are, in contrast, required by law to set up a supervisory board). This discussion on the complementary versus substitutive role of an audit leads us to our next hypotheses:

**H1c.** *Voluntary audit is more likely if the company has a supervisory board.*

**H1d.** *Voluntary audit is more likely if the company has a nonmandated supervisory board.*

Furthermore, the existence of a parent company is predicted to increase the demand for external audit. The arguments for this are twofold. First, minority shareholders may require external assurance to counterbalance the power of the parent company. Second, the demand could also arise from the parent company's need to control internal decisions adequately by using its power to call for external audit. This view is supported by evidence provided by Hay et al. (2008), who find for listed companies in New Zealand that the existence of a major shareholder is positively associated with demands for external auditing services. Applying this rationale to private firms and the voluntary audit setting, it could be concluded, therefore, that small companies controlled by a parent company would be more likely to have voluntary audits. Accordingly, we provide an extension to previous research<sup>3</sup> on small companies regarding the voluntary audit decision, in assuming that subsidiaries controlled by a parent undertaking reveal a higher demand for an external audit,<sup>4</sup> which leads us to the following hypothesis:

**H1e.** *Voluntary audit is more likely if the company is a subsidiary.*

Prior research also suggests and finds for the UK that the number of owners impacts on agency costs and, therefore, increases the

demand for a voluntary audit (Dedman et al., 2014). Companies with a larger number of owners are more likely to suffer problems of communication and coordination. This might lead to disputes among shareholders and result in more severe agency conflicts between the owners and management, which could be mitigated by an audit of financial statements. In contrast, if small companies are family owned, conflicts of interests between family members are assumed to be less pronounced due to a higher level of trust and consequently lower agency conflicts (Collis et al., 2004; Corten, Steijvers, & Lybaert, 2015). However, Corten et al. (2015) also argue that even in small and family-owned companies agency problems can exist because of an entrenchment effect (similar to Carey & Tanewski, 2013). In line with these conflicting arguments, empirical results from previous research are mixed. While Collis and coworkers (Collis, 2010; Collis et al., 2004) find for the UK that small companies that are wholly family owned reveal a lower demand for voluntary audit, this could not be confirmed by Collis (2012). In contrast to these findings, Corten et al. (2015) hypothesize and provide evidence for US private family firms (possibly because of entrenching) that the demand for reviews and compilations increases in the case of second-generation family firms. Based on this discussion, we state the following hypotheses:

**H1f.** *Voluntary audit is more likely the greater the number of owners.*

**H1g.** *Voluntary audit is more/less likely if the company is a family firm.*

### 3.2 | Agency conflicts with lenders

Jensen and Meckling (1976) suggest that agency costs also arise from outside financing. Privately held companies do not have direct access to the capital markets, which makes them turn instead to debt financing (Berger & Udell, 1998). In basic terms, if a firm uses debt capital, managers acting in the interest of the firms' owners will have an incentive to undertake profitable business activities at the expense of outside investors (Jensen & Meckling, 1976). Because lenders anticipate such managerial behavior they price-protect themselves by, for instance, charging higher interest rates. Accordingly, the best solution for both parties (managers and lenders) is to engage an external auditor in order to reduce agency costs. This is especially relevant for small entities that are quoted in the literature as being more likely to suffer from credit rationing (Berger & Udell, 2006), partly because they are "often acutely informationally opaque" (Berger & Udell, 1998). In line with these arguments, previous literature provides evidence that small companies are more likely to demand a voluntary audit: (i) if financial statements are given to the bank (Collis, 2003); (ii) if banks require audited accounts (Collis, 2008, 2012); (iii) if bank debt exists (Collis et al., 2004; Niemi et al., 2012); and (iv) if the company's leverage is high (Carey et al., 2000; Dedman et al., 2014; Tauringana & Clarke, 2000). Furthermore, literature also shows that a voluntary audit reduces the cost of debt (Blackwell, Noland, & Winters, 1998; Kim, Simunic, Stein, & Yi, 2011; Minnis, 2011). Based on the foregoing discussion, we propose the following hypothesis:

**H2.** *Voluntary audit is more likely the higher a company's debt ratio.*

### 3.3 | Importance of financial statements for management activities

Regardless of a company's size, managers have an interest in the integrity of financial information because of its support in facilitating better decisions. To reduce costs resulting from poor decisions, managers establish and maintain internal and external control systems to provide assurance regarding the integrity of financial information not only for external stakeholders but also for themselves (Jensen & Payne, 2003). Since small companies often lack professional accounting competence and control mechanisms (Collis et al., 2004), engaging an external auditor may reduce the risk of misstatements and thus ensure the correctness of financial statement information (Abdelkhalik, 1993). Thus, an external audit is expected to substitute for poor internal controls (Wallace, 1984). The more important managers perceive financial information to be in operating and controlling the activities of their companies, the more they might value an audit. Consistent with this argument, Collis et al. (2004) find for small companies in the UK that higher levels of agreement on an audit's ability to provide both a beneficial check on internal books/records and improvement to the quality of information are positively associated with the demand for a voluntary audit. These results are confirmed by Niemi et al. (2012) for small companies in Finland and a follow up study by Collis (2010) for Denmark and the UK (albeit that in the UK agreement exists only for an audit's ability to improve the quality of information). In a further study, Collis (2012) found weak support in the case of micro companies (but not nonmicro companies) for the hypothesis that demand for a voluntary audit is positively associated with the reported agreement that auditing acts as a check on accounting systems and records. Nevertheless, Collis (2012) could not confirm the hypothesis either for micro or for nonmicro small companies that voluntary audit is positively associated with the claim that audit improves the quality of financial information. This discussion of the literature leads us to our next hypothesis:

**H3.** *Voluntary audit is more likely if financial statement information is considered very important for management activities.*

### 3.4 | Outsourcing

It is well known that the smallest companies cannot afford in-house accounting expertise and typically outsource their accounting function (Berry, Sweeting, & Goto, 2006; Everaert, Sarens, & Rommel, 2007; Kirby & King, 1997). Owing to limited resources and lack of competence regarding financial accounting tasks (e.g., bookkeeping, preparation of financial statements, or preparation of tax returns) in small companies (Gooderham, Tobiassen, Døving, & Nordhaug, 2004), these services are often outsourced to external experts (Niemi et al., 2012). Germany's accounting profession is not comparable to that in the UK or the USA (Haller, 2003), with accounting tasks therefore being outsourced to those qualified either as auditors or tax advisors. Both professions are strongly regulated in Germany, implying, for instance,

that every auditor/tax advisor has to pass a professional state examination (§ 1 WPO [Public Accountant Act]; § 35 StBerG). However, compared with tax advisors, auditors have broader levels of competence covering both tax advice and auditing. Thus, while auditors are also qualified to provide tax advice, tax advisors are not allowed to provide an audit. Owing to the strong alignment between financial accounting and taxation in Germany, accounting tasks (such as book-keeping, the preparation of financial statements, and preparation of tax declaration) are often outsourced to tax advisors (Loitz, 2014). Previous studies investigating the association between outsourcing accounting activities and the demand for voluntary audit suggest that the use of an external accountant leads to problems of moral hazard. This could in turn necessitate hiring an auditor to provide assurance that the external accountant has not behaved opportunistically (Niemi et al., 2012). Accordingly, Niemi et al. (2012) find for a sample of Finnish small companies that owner-managers, who reveal a higher level of agreement for the importance of financial accounting services provided by an external accountant, are more likely to demand a voluntary audit. However, if tax advisory services provided by the external accountant to the company are perceived as important, Niemi et al. (2012) find that the demand for a voluntary audit decreases. An explanation supporting this negative association suggests that the involvement of external experts with the necessary resources and professional qualifications provides managers as well as the company's stakeholders with additional assurances regarding the integrity of financial information, thus decreasing demand for a voluntary audit. Accordingly, Ojala, Niskanen, Collis, and Pajunen (2014) find that, if there is high trust in the external accountant, the benefits of having an audit decrease. Thus, if external experts are perceived as reliable and competent, outsourcing accounting tasks may substitute for an external audit. These arguments, together with the findings of Bennett and Robson (1999) that external accountants are held in positions of high trust by their customers, lead to the following hypothesis:

**H4a.** *Voluntary audit is less likely if accounting tasks are outsourced to an external expert.*

Owing to different levels of professional qualification and inconsistent findings in previous literature, we also examine whether or

not different professional qualification levels of those to whom book-keeping, financial statement preparation, or tax return preparation are outsourced has an effect on the voluntary audit decision. This gives rise to hypotheses H4b and H4c:

**H4b.** *Voluntary audit is less likely if accounting tasks are outsourced to an external tax advisor.*

**H4c.** *Voluntary audit is less likely if accounting tasks are outsourced to an external auditor.*

## 4 | DATA AND MODEL

### 4.1 | Data

Because publicly available information on the voluntary audit of small companies is lacking, our research data have been gathered via a postal questionnaire survey<sup>5</sup> sent to 6,000 managers of small<sup>6</sup> limited liability companies/partnerships asking them for their voluntary audit decisions covering the financial year ending 2011. The firms contacted were chosen from 733,949 small firms on the DAFNE database using a disproportionate stratified random sampling reflecting company sizes.<sup>7</sup> As most small businesses are micro-entities in Germany, we used this sample selection procedure to ensure that enough small companies of different sizes were included in our study, since prior literature shows that the voluntary audit demand increases with company size (e.g., Collis, 2012; Collis et al., 2004; Niemi et al., 2012). Capital market-oriented companies, firms belonging to the accounting, auditing, or tax consultancy industry, and companies serving as general partners in limited liability partnerships were excluded from the sample. We conducted the survey in summer (June and July) 2013. In total, we received back 443 questionnaires, 24 of which had to be rejected since respondents indicated that they were subject to statutory audit. One questionnaire was rejected due to the company's status as a general partner in a limited liability partnership, and a further 13 were excluded from the analysis due to contradictory information. Ultimately, 405 usable responses were received, giving a response rate of 6.75%. The sample development is shown in Table 2. The validity of

**TABLE 2** Sample development

Total population	733,949		
Size class	1	2	3
Stratum defined by total assets (TA)	TA ≤ €350,000	€350,000 < TA ≤ €2,000,000	TA > €2,000,000
Number of companies by stratum	424,391	236,590	72,968
Proportion of total population (%)	57.8	32.2	9.9
Number of companies randomly selected	2,000	2,000	2,000
Questionnaires sent out	6,000		
Questionnaires returned	443		
Rejected questionnaires, due to:			
• a statutory audit	24		
• general partner in a limited liability partnership	1		
• contradictory information	13		
Usable responses	405 (6.75%)		
Usable responses by stratum	112	152	141

responses is supported by the fact that 94.3% of the questionnaires were completed by the manager or the firm's head of accounting.

Owing to the imputation of some missing variables, as is customary in survey research (Allee & Yohn, 2009), all of the 405 usable responses were featured in our analyses.<sup>8</sup> A multiple imputation procedure was applied that provided five data samples. The analyses (i.e., the descriptive statistics, correlations, and binary logistic regressions) were carried out for each of these data samples. The overall estimates are the arithmetic means of estimates for each of these data samples (Equation 1). The corresponding overall variances (Equation 4) are a combination of the average within-imputation variances (Equation 2) and the between-imputation variances (Equation 3), with  $(1 + 1/N)$  as an adjustment for finite  $N$  (Little & Rubin, 2002; Rubin, 1987).

$$\bar{e}_N = \frac{1}{N} \sum_{n=1}^N \hat{e}_n \quad (1)$$

$$\bar{\sigma}^2(\text{within})_N = \frac{1}{N} \sum_{n=1}^N \sigma_n^2 \quad (2)$$

$$\sigma^2(\text{between})_N = \frac{1}{N-1} \sum_{n=1}^N (\hat{e}_n - \bar{e}_N)^2 \quad (3)$$

$$\sigma^2(\text{total})_N = \bar{\sigma}^2(\text{within})_N + 1 + \frac{1}{N} \sigma^2(\text{between})_N \quad (4)$$

## 4.2 | Models

To test our hypothesized relationships between the decision for voluntary audit and agency factors (resulting from agency conflicts with owners and lenders), the importance of financial statements for management activities, and outsourcing, we use the following logistic regression model (model 1):

$$\text{Prob}(VOLAUDIT_i) = \frac{1}{1 + e^{-Z}} \quad (5)$$

where

$$\begin{aligned} Z = & \alpha_0 + \alpha_1 \text{NONOWNERMG}T_i + \alpha_2 \text{LEGAL}_i + \alpha_3 \text{BOARD}_i \\ & + \alpha_4 \text{SUBSIDIARY}_i + \alpha_5 \text{NO\_OF\_OWNERS}_i + \alpha_6 \text{FAMILY}_i \\ & + \alpha_7 \text{DEBT\_RATIO}_i + \alpha_8 \text{IMPORTANCE}_i + \alpha_9 \text{OUTSOURCE}_i \\ & + \alpha_{10} \text{SIZE}_i + \alpha_{11} \text{NEGEQ}_i + \alpha_{12} \text{INDUSTRY\_2}_i + \alpha_{13} \text{INDUSTRY\_3}_i \\ & + \alpha_{14} \text{INDUSTRY\_4}_i \end{aligned}$$

In addition, as the variables *BOARD* and *NONMANDBOARD* are expected to be highly correlated, we run an additional model (model 2) to test H1d where we replace the variable *BOARD* by the variable *NONMANDBOARD* with all other variables remaining the same.

All variables used in the tests are described in Table 3. The dependent variable *VOLAUDIT* is a dummy variable coded 1 if the company's 2011 financial statements were audited and 0 otherwise. To test the relationship between the demand for voluntary audit and agency conflicts with firms' owners (H1), we include six variables in both of our models. The status as a family firm<sup>9</sup> is captured by a dummy variable (*FAMILY*). While the direction for *FAMILY* is uncertain, all the other

**TABLE 3** Description of variables

Variable	Description	Hypothesis	Exp. sign
Dependent variable			
VOLAUDIT	Binary variable receiving the value of 1 if the company chooses to have a voluntary audit and 0 otherwise		
Explanatory variables			
NONOWNERMG	Proportion of the owners of the company who are not involved in the management of the company	H1a	+
LEGAL	Binary variable receiving the value of 1 if the company is a stock company and 0 otherwise	H1b	+
BOARD	Binary variable receiving the value of 1 if there is a supervisory board in the company and 0 otherwise	H1c	+
NONMANDBOARD	Binary variable receiving the value of 1 if there is a nonmandated supervisory board in the company and 0 otherwise	H1d	+
SUBSIDIARY	Binary variable receiving the value of 1 if the company is a subsidiary and 0 otherwise	H1e	+
NO_OF_OWNERS	Natural logarithm of the number of the owners of the company	H1f	+
FAMILY	Binary variable receiving the value of 1 if the company is a family firm and 0 otherwise	H1g	?
DEBT_RATIO	Total debt divided by total assets	H2	+
IMPORTANCE	Binary variable receiving the value of 1 if financial statement information is very important for management activities and 0 otherwise	H3	+
OUTSOURCE			
OUTSOURCE_EXP	Binary variable receiving the value of 1 if financial accounting tasks are outsourced to an external expert (tax advisor or auditor) and 0 otherwise.	H4a	-
OUTSOURCE_TAXADV	Binary variable receiving the value of 1 if financial accounting tasks are outsourced to an external tax advisor and 0 otherwise	H4b	-
OUTSOURCE_AUD	Binary variable receiving the value of 1 if	H4c	-

(Continues)

TABLE 3 (Continued)

Variable	Description	Hypothesis	Exp. sign
	financial accounting tasks are outsourced to an external auditor and 0 otherwise		
Control variables			
SIZE	Natural logarithm of total assets		+
NEGEQ	Binary variable receiving the value of 1 if the equity is negative and 0 otherwise		?
<i>INDUSTRY</i> <sup>a</sup>			
<i>INDUSTRY_1</i> :	Public and private utilities		
<i>INDUSTRY_2</i> :	Wholesale and retail trade		
<i>INDUSTRY_3</i> :	Service		
<i>INDUSTRY_4</i> :	Manufacturing, construction and transportation		?

<sup>a</sup>The four industries are binary variables with public and private utilities used as the base group.

variables related to agency conflicts with owners are hypothesized to be positively associated with the demand for a voluntary audit. These are the proportion of company owners who are not involved in a company's management (*NONOWNERMG*), the company operating in the legal form of an AG, which is coded 1 and 0 otherwise (*LEGAL*), the existence of a supervisory board (only model 1), which is coded 1 if a supervisory board is implemented and 0 otherwise (*BOARD*), the existence of a nonmandated supervisory board (only model 2), which is coded 1 if the company has a nonmandated supervisory board and 0 otherwise (*NONMANDBOARD*), the status of the company as a subsidiary, which is coded 1 and 0 otherwise (*SUBSIDIARY*), and the number of the company's owners measured by the natural logarithm of it (*NO\_OF\_OWNERS*).

The hypothesis regarding agency conflicts with lenders (H2) is tested by the company's debt ratio, measured as total debt divided by total assets (*DEBT\_RATIO*), for which we predict a positive sign of the regression coefficient.

To test H3, we constructed the binary variable *IMPORTANCE* from the original five-point scale response to a question on the importance of financial statement information for managements' own activities (1 = very unimportant, 5 = very important) and predict a positive association between the voluntary audit decision and the perception of management that financial statement information is very important.

Furthermore, we consider the different professional qualifications of those to whom financial accounting tasks are outsourced by specifying three binary variables for which we assume a negative association with the choice for a voluntary audit (H4). These are *OUTSOURCE\_EXP*, coded 1 if accounting tasks are outsourced to an external expert (either a tax advisor or an auditor), *OUTSOURCE\_TAXADV*, coded 1 if accounting tasks are outsourced to an external tax advisor, and *OUTSOURCE\_AUD*, coded 1 if accounting tasks are outsourced to an external auditor.

We augment both logistic regression models (model 1 and model 2) with five control variables. The first represents company size, which in previous literature is often used as a proxy for the separation of ownership and control (Chow, 1982; Taurigana & Clarke, 2000) or a measure of wealth value at risk (Abdel-khalik, 1993; Collis, 2010), measured by the natural logarithm of total assets (*SIZE*). Beyond that, we include one dummy variable that is coded 1 if company equity is negative and 0 otherwise (*NEGEQ*). Finally, we control for industry fixed effects by including binary industry indicators (*INDUSTRY\_2*, *INDUSTRY\_3*, and *INDUSTRY\_4*) for three of the four main industries in our sample.

## 5 | RESULTS

### 5.1 | Descriptive statistics

Descriptive statistics and univariate analyses are reported in Table 4. Means, medians, and standard deviations are shown for the total sample and two subsamples regarding the decision to have a voluntary audit ( $n = 49$ ) or not ( $n = 356$ ). The descriptive analysis shows that our sample covers a wide range of small companies with balance sheet totals ranging from €2,600 to €72,000,000 (with a mean value of €1,893,000 and a median of €1,000,000) and with less than five owners on average (median 2). Nine (2.2%) of the companies included in our analysis operate in the legal form of an AG and 396 (97.8%) in the legal form of a GmbH/GmbH & Co. KG. In our sample, the proportion of AGs is somewhat higher than in the total population of small companies (see Table 1). This can be explained by the stratified sampling technique, since companies choosing the legal form of an AG are usually also larger.

#### 5.1.1 | Voluntary audit ratio

It is worthwhile emphasizing the extremely low proportion of small companies that opt for voluntary audit in our sample compared with voluntary audit ratios documented in studies from other countries. While we find that only 12% of the companies examined (49 from 405) report having a voluntary audit,<sup>10</sup> the voluntary audit ratios found in previous research from other countries ranged from 26% to 80% (see Table 5).<sup>11</sup>

The low audit ratio in Germany is noteworthy for two reasons. First, in other studies (see Table 5) the size criteria of companies selected are considerably lower than those in this study. Taking into account research findings showing that size is one of the main drivers of the voluntary audit decision (e.g., Collis, 2012; Collis et al., 2004; Niemi et al., 2012), one would expect a much higher voluntary audit ratio for the companies in our study. Second, owing to our stratified sampling procedure, larger companies are overrepresented in our sample, which results in the voluntary audit ratio being even lower for the whole population of small companies in Germany. When analyzing the voluntary audit ratios for each stratum in our sample and weighing the results proportionally, we find an average audit ratio of 5.3% (see Table 6).

The considerably different results for Germany regarding the voluntary audit ratio show that findings from other countries regarding

**TABLE 4** Descriptive statistics

Variable	Total (n = 405)			Vol. audit (n = 49)			No vol. audit (n = 356)			Tests of differences p-value
	M	Mdn	SD	M	Mdn	SD	M	Mdn	SD	
NONOWNERMGMT	0.340	0.000	0.388	0.653	0.750	0.371	0.297	0.000	0.371	<.001***
LEGAL	0.022	0.000	0.148	0.102	0.000	0.306	0.011	0.000	0.106	<.001***
BOARD	0.113	0.000	0.316	0.388	0.000	0.492	0.075	0.000	0.263	<.001***
NONMANDBOARD	0.091	0.000	0.288	0.286	0.000	0.456	0.065	0.000	0.246	<.001***
SUBSIDIARY	0.094	0.000	0.292	0.347	0.000	0.481	0.059	0.000	0.236	<.001***
NO_OF_OWNERS	0.656	0.693	0.784	1.002	0.693	1.147	0.608	0.693	0.709	.016**
FAMILY	0.763	1.000	0.426	0.429	0.000	0.500	0.809	1.000	0.394	<.001***
DEBT_RATIO	0.652	0.708	0.289	0.625	0.630	0.300	0.656	0.716	0.288	.762
IMPORTANCE	0.327	0.000	0.470	0.445	0.000	0.501	0.311	0.000	0.463	.078*
OUTSOURCE_EXP	0.921	1.000	0.270	0.857	1.000	0.354	0.930	1.000	0.256	.077*
OUTSOURCE_TAXADV	0.827	1.000	0.379	0.551	1.000	0.503	0.865	1.000	0.342	<.001***
OUTSOURCE_AUD	0.134	0.000	0.341	0.449	0.000	0.503	0.090	0.000	0.287	<.001***
SIZE	6.640	6.914	1.527	8.050	8.038	0.952	6.446	6.576	1.490	<.001***
NEGEQ	0.143	0.000	0.351	0.122	0.000	0.331	0.146	0.000	0.354	.658
INDUSTRY_1	0.067	0.000	0.250	0.143	0.000	0.354	0.056	0.000	0.231	.023**
INDUSTRY_2	0.163	0.000	0.370	0.204	0.000	0.407	0.157	0.000	0.365	.406
INDUSTRY_3	0.462	0.000	0.499	0.429	0.000	0.500	0.466	0.000	0.500	.619
INDUSTRY_4	0.309	0.000	0.463	0.224	0.000	0.422	0.320	0.000	0.467	.174

Statistical (two-tailed) significance (*p*-values) better than .01, .05 and .1 indicated by \*\*\*, \*\*, and \*.

For variable definitions, see Table 3. To examine the independence of the two subsamples (voluntary audit versus no voluntary audit) the chi-square test and the nonparametric Kolmogorov–Smirnov test were respectively performed in terms of the independent dichotomous categorical variables and the independent variables measured at least on an ordinal scale.

the decision to opt for voluntary audit cannot be transferred to Germany without reflection. One reason for the low audit ratio in Germany might be the absence of a mandatory audit history for small German companies. As firms' decisions to opt for voluntary audit are most likely influenced by previous practice (Niemi et al., 2012), studies examining the years following transition to voluntary audit regimes show very high audit ratios in the first year (Dedman et al., 2014). However, it can also be seen that in subsequent years the voluntary audit ratio decreases, revealing a trend away from voluntary audit (Dedman et al., 2014; Ojala et al., 2016). Thus, questionnaire surveys (Collis, 2010; Collis et al., 2004; Niemi et al., 2012) analyzing voluntary audit decisions based on managers' willingness to opt for future voluntary audit while auditing is still mandatory for them may overestimate the benefits of a voluntary audit.

### 5.1.2 | Drivers of voluntary audit

Table 4 reports the chi-square test and the nonparametric (Kolmogorov–Smirnov) test conducted in terms of the independent dichotomous categorical variables (*LEGAL*, *BOARD*, *NONMANDBOARD*, *SUBSIDIARY*, *FAMILY*, *IMPORTANCE*, *OUTSOURCE\_EXP*, *OUTSOURCE\_TAXADV*, *OUTSOURCE\_AUD*, *NEGEQ*, *INDUSTRY*) and the independent variables measured at least on an ordinal scale (*NONOWNERMGMT*, *NO\_OF\_OWNERS*, *DEBT\_RATIO*, *SIZE*) to examine the two subsamples' independence.

Based on our univariate results, we can provide initial evidence that agency conflicts with owners affect the decision on whether or not to have a voluntary audit as all of our agency variables are

statistically significant at the .01 level (*NONOWNERMGMT*, *LEGAL*, *BOARD*, *NONMANDBOARD*, *SUBSIDIARY*, and *FAMILY*) or at least at the .05 level (*NO\_OF\_OWNERS*). From Table 4, we can see that those companies opting for a voluntary audit have a higher proportion of owners who are not involved in management (65.3% versus 29.7%), operate more often in the legal form of an AG (10.2% versus 1.1%), more often have a supervisory board/nonmandated supervisory board (38.8%/28.6% versus 7.5%/6.5%), are more often subsidiaries (34.7% versus 5.9%), are less often family firms (42.9% versus 80.9%), and have a higher number of owners (1.0 versus 0.6). By contrast, agency conflicts with lenders (*DEBT\_RATIO*) do not seem to drive the voluntary audit decision. Regarding the debt ratio, companies that opt for a voluntary audit are not significantly different from those that do not choose to have a voluntary audit (62.5% versus 65.6%). The variable *IMPORTANCE* is significant at the .10 level, indicating that managers who decide to have voluntary audits more often rate financial statement information as very important for their management activities than those who take advantage of the audit exemption (44.5% versus 31.1%). The variable *OUTSOURCE\_EXP* (capturing both outsourcing accounting tasks to a tax advisor and outsourcing accounting tasks to an auditor) is significant at the .10 level, showing that outsourcing of accounting tasks (bookkeeping, preparation of financial statements, preparation of tax returns) is less common among companies that report having had voluntary audits (85.7% versus 93%). Regarding the outsourcing of accounting tasks, the test statistics also provide first univariate evidence that for the voluntary audit decision it matters to whom the accounting tasks are outsourced. While it can be seen that outsourcing to an external tax advisor

**TABLE 5** Proportion of companies that opt for voluntary audit in other major studies

Reference	Country	VAR (%)	Size of companies investigated
Carey et al. (2000)	AUS	46	n/a
Carey and Tanewski (2013)	AUS	26	Farm businesses with estimated value of agricultural operations of 22,500 AUD or more
Senkow, Rennie, Rennie, and Wong (2001)	CAN	74	Revenue > 10,000,000 CAD Total assets > 5,000,000 CAD
Collis (2010)	DNK	41 <sup>a</sup>	Companies that met any two of the following three criteria: turnover ≤ €7,300,000 balance sheet total ≤ €3,650,000 average number of employees ≤ 50
Niemi et al. (2012)	FIN	80 <sup>a</sup>	Number of employees ≤ 10
Ojala et al. (2016)	FIN	27 <sup>b</sup>	Companies that did not exceed any two of the following three size criteria for two consecutive years: annual turnover ≤ €200,000 total assets ≤ €100,000 number of employees ≤ 3
Collis (2010)	UK	43 <sup>a</sup>	Companies that met all of the following three criteria: turnover ≤ €7,300,000 balance sheet total ≤ €3,650,000 average number of employees ≤ 50
Collis (2012)	UK	39	Companies that classified as small based on the respondents' answers regarding the audit exemption in 2006. Thereby, the following criteria were relevant for the audit exemption in 2006: turnover ≤ £5,600,000 balance sheet total ≤ £2,800,000 average number of employees ≤ 50
Collis et al. (2004)	UK	68 <sup>a</sup>	Companies that met the following three size criteria: turnover ≤ £4,200,000 balance sheet total ≤ £2,100,000 average number of employees ≤ 50
Dedman et al. (2014)	UK	62 <sup>c</sup>	Companies with either sales > £1,000,000 or total assets > £1,400,000 in 2003; and sales < £5,600,000 and total assets < £2,800,000 in the years 2003 and 2004
Seow (2001)	UK	53	Companies that potentially met the SSRA turnover and balance sheet limits. These were: turnover ≤ £90,000 balance sheet total ≤ £1,400,000
Tauringana and Clarke (2000)	UK	35	Companies that met the following two size criteria: turnover ≤ £90,000 balance sheet total ≤ £1,400,000

VAR, voluntary audit ratio; SSRA = Statement of Standard for Reporting Accountants.

<sup>a</sup>The proportion is not based on an actual decision, but on the intention of the manager if the company would be exempt from a mandatory audit.

<sup>b</sup>In total, but the proportion declines: 2008, 32%; 2009, 27%; 2010, 23%.

<sup>c</sup>In total, but the proportion declines: 2004, 71%; 2005, 60%; 2006, 52%.

**TABLE 6** Voluntary audit ratio

Total population	733,949		
Size class	1	2	3
Stratum defined by total assets (TA)	TA ≤ €350,000	€350,000 < TA ≤ €2,000,000	TA > €2,000,000
Number of companies by stratum	424,391	236,590	72,968
Proportion of total population (%)	57.8	32.2	9.9
Number of companies randomly selected	2,000	2,000	2,000
Usable responses by stratum	112	152	141
Number of companies opt for a voluntary audit	1	10	38
Voluntary audit ratio by stratum (%)	0.9	6.6	27.0
Voluntary audit ratio by stratum weighted (%)	0.5 (57.8% × 0.9%)	2.1 (32.2% × 6.6%)	2.7 (9.9% × 27%)
Voluntary audit ratio of the total population (%)	5.3		

(*OUTSOURCE\_TAXADV*) is to a significant extent negatively associated with decisions to opt for a voluntary audit (at the .01 level; 55.1% versus 86.5%), outsourcing to an external auditor (*OUTSOURCE\_AUD*) is to a significant extent positively related to the voluntary audit decision (at the .01 level; 44.9% versus 9%). From our control variables, size is significant at the .01 level and one industry variable (public and private utilities) is significant at the .05 level. Thus, companies that choose to have a voluntary audit are on average larger (8.05 versus 6.45) and operate more often in the public and private utilities industry (14.3% versus 5.6%).

## 5.2 | Correlations

Table 7 provides both Pearson and Spearman correlations between the variables tested in the binary logistic regression models.

As predicted, our variables regarding agency conflicts with owners correlate with the voluntary audit decision significantly positively (*NONOWNERMG*, *LEGAL*, *BOARD*, *NONMANDBOARD*, *SUBSIDIARY*, *NO\_OF\_OWNERS*), apart from the status as a family firm (*FAMILY*), for which the coefficients are significantly negative. In terms of agency conflicts with debt providers, the estimated correlation for the debt ratio (*DEBT\_RATIO*) is, in contrast to our prediction, insignificant. The variable related to the importance of financial statement information for management activities (*IMPORTANCE*) correlates significantly positively with voluntary audit, as expected. While the estimated correlations between the voluntary audit choice and outsourcing accounting tasks to an external expert (*OUTSOURCE\_EXP*) as well as the outsourcing of accounting tasks to a tax advisor (*OUTSOURCE\_TAXADV*) are, as predicted, significant and negative, the outsourcing of accounting tasks to an auditor (*OUTSOURCE\_AUD*) is significantly positive and, therefore, inconsistent with our hypothesized direction. Regarding the control variables, firm size (*SIZE*) and one industry variable (*INDUSTRY\_1*) are positively correlated, while the others (*NEGEQ*, *INDUSTRY\_2* to *INDUSTRY\_4*) are insignificant. As all of the correlation coefficients are less than .7 (except for *BOARD* and *NONMANDBOARD*, which are, however, tested in two different models), there is no major overlap indicated in the independent variables' predictive power (multicollinearity) (Kervin, 1992).

## 5.3 | Logistic regression

The results of the two binary logistic regression models are shown in Tables 8 and 9, each presenting three different versions capturing the different professional qualifications of those to whom financial accounting tasks are outsourced (A: *OUTSOURCE\_EXP*; B: *OUTSOURCE\_TAXADV*; and C: *OUTSOURCE\_AUD*). Also reported are the variance inflation factors *VIFs* for the variables included in our binary logistic regression model as a further check for potential multicollinearity. As these *VIFs* are clearly below 10.0, we have no reason to suspect that results were affected by serious multicollinearity (Niemi et al., 2012; Ojala et al., 2016).

### 5.3.1 | Results for model 1

The coefficients of determination measured by pseudo  $R^2$  indicate that the three versions of model 1 explain 52% (model 1A:

*OUTSOURCE\_EXP*), 60% (model 1B: *OUTSOURCE\_TAXADV*), and 58% (model 1C: *OUTSOURCE\_AUD*) of the variance.

Regarding H1, only two (*NONOWNERMG* and *SUBSIDIARY*) of the six variables measuring agency conflicts with owners are significant ( $p < .01$  or  $p < .05$  respectively) in all three versions of model 1, and their coefficients carry the expected positive sign. This suggests that due to information asymmetries the demand for voluntary audit increases, the greater the proportion of company owners who are not involved in management, which is in line with previous literature (Collis, 2010; Seow, 2001; Tauringana & Clarke, 2000). Extending previous research and consistent with findings from listed companies (Hay et al., 2008), we also find that voluntarily audited companies are more likely to be subsidiaries, confirming that the existence of a parent company increases the demand for an external audit. The significant positive coefficient documented for *LEGAL* in two of our regression versions (model 1B and model 1C;  $p < .10$ ) has not been documented in prior research. As predicted, our findings show that a company operating in the legal form of an AG is more likely to opt for a voluntary audit. This is because shareholders of an AG have less comprehensive information rights than shareholders of a GmbH/GmbH & Co. KG. So, there is evidence to support rejection of the null hypotheses for H1a, H1b, and H1e. However, this is not so in the case of the null hypotheses for *BOARD* (H1c), *NO\_OF\_OWNERS* (H1f), and *FAMILY* (H1g); in other words, we do not find evidence that firms opt for a voluntary audit of their financial statements if they have a supervisory board, if they have a larger number of owners, or if they are a family-run business.

Additionally, we do not find support for debt (*DEBT\_RATIO*) being a driver of the voluntary audit decision. So, there is no evidence supporting rejection of the null hypothesis for H2 in any model. This finding differs slightly from Dedman et al. (2014), who, using data from the UK, find weak support for leverage as a voluntary audit driver, but is consistent with Niemi et al. (2012), who do not find support using Finnish data. Put together, these results suggest that within traditional bank-dominated economies such as Germany and Finland, so far as their small and private enterprise customers are concerned, banks have different monitoring mechanisms that substitute for or are more cost efficient than a voluntary audit. For example, in Germany, banks often rely on tax financial statements for their credit decisions, especially for smaller companies (Haller et al., 2008; Oehler, 2006) and may due to the strong alignment between financial accounting and taxation benefit from tax enforcement.

Regarding H3, the results for *IMPORTANCE* are significant in all three versions of our model 1 (model 1A and model 1B  $p < .01$ ; model 1C  $p < .05$ ) with the predicted positive sign, indicating that if financial statement information is important for management activities, then managers opt to have their companies' financial statements voluntarily audited. This finding is in line with previous literature, where an audit is interpreted as a check of information provided (Collis, 2010, 2012; Collis et al., 2004; Niemi et al., 2012).

Regarding H4a, the result for *OUTSOURCE\_EXP* is only weakly significant ( $p < .10$ ) with a negative sign, indicating that firms which outsource financial accounting tasks (such as bookkeeping, financial statement preparation, or tax return preparation) to an external expert (tax advisor and/or auditor) are less likely to opt for voluntary audit.

TABLE 7 Pearson/Spearman<sup>a</sup> correlation matrix (n = 405)

Variable	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19
1 VOLAUDIT	1	.291 (.000)	.201 (.000)	.323 (.000)	.250 (.000)	.322 (.000)	.132 (.008)	-.292 (.000)	-.036 (.475)	.093 (.078)	-.271 (.000)	.343 (.000)	.365 (.000)	-.022 (.659)	.113 (.023)	.041 (.407)	-.025 (.621)	-.068 (.175)
3 LEGAL		.087 (.085)	1	.423 (.000)	-.048 (.337)	.124 (.013)	.052 (.310)	-.192 (.000)	.001 (.991)	-.034 (.500)	.044 (.375)	.039 (.432)	.116 (.020)	-.014 (.782)	-.040 (.419)	.024 (.627)	.062 (.213)	-.064 (.195)
5 NONMANDBOARD		.352 (.000)	-.048 (.337)	.869 (.000)	1	.162 (.001)	.103 (.037)	-.347 (.000)	-.080 (.110)	.079 (.130)	.029 (.556)	.077 (.123)	.155 (.002)	-.056 (.259)	.121 (.015)	-.024 (.632)	.016 (.752)	-.063 (.203)
7 NO_OF_OWNERS		.454 (.000)	.174 (.000)	.285 (.000)	-.108 (.029)	1	-.214 (.000)	-.005 (.924)	-.106 (.041)	.056 (.263)	.059 (.236)	.000 (.932)	.170 (.001)	.035 (.487)	.070 (.160)	.051 (.302)	.023 (.644)	-.104 (.037)
9 DEBT_RATIO		-.451 (.000)	-.004 (.938)	-.076 (.130)	-.347 (.119)	-.053 (.289)	1	.069 (.167)	.022 (.661)	-.025 (.609)	-.016 (.750)	-.010 (.838)	.025 (.000)	.505 (.000)	.025 (.610)	-.013 (.793)	-.034 (.495)	.033 (.503)
11 OUTSOURCE_EXP		-.113 (.023)	.044 (.375)	.046 (.352)	.029 (.556)	-.125 (.011)	.035 (.485)	.138 (.005)	-.007 (.885)	.029 (.407)	.641 (.000)	.115 (.020)	.071 (.154)	-.063 (.205)	-.142 (.004)	.030 (.546)	.051 (.306)	-.002 (.961)
13 OUTSOURCE_AUD		-.144 (.004)	.069 (.166)	.039 (.436)	.009 (.857)	-.122 (.014)	.061 (.219)	.098 (.048)	-.003 (.954)	-.549 (.000)	-.015 (.767)	-.549 (.000)	-.015 (.767)	-.055 (.265)	-.061 (.220)	.007 (.885)	-.009 (.858)	.037 (.460)
15 NEGEQ		.084 (.092)	.039 (.432)	.089 (.073)	.077 (.123)	.122 (.014)	.022 (.657)	-.054 (.281)	-.013 (.802)	.116 (.033)	.115 (.020)	1	.182 (.000)	.026 (.607)	-.018 (.721)	.023 (.646)	.046 (.355)	-.059 (.240)
17 INDUSTRY_2		.115 (.021)	.110 (.027)	.165 (.001)	.133 (.007)	.191 (.000)	.180 (.000)	-.129 (.009)	.050 (.320)	-.003 (.954)	-.013 (.802)	-.013 (.802)	.050 (.320)	-.015 (.769)	-.015 (.769)	-.043 (.096)	-.096 (.114)	.114 (.000)
19 INDUSTRY_4		-.022 (.659)	.110 (.027)	-.014 (.782)	-.056 (.259)	-.059 (.236)	.048 (.338)	-.004 (.933)	.410 (.000)	.016 (.720)	-.063 (.205)	.026 (.607)	-.087 (.081)	1	.004 (.940)	.010 (.834)	.060 (.231)	-.075 (.133)
		.087 (.079)	-.040 (.419)	.093 (.063)	.121 (.015)	.016 (.751)	.104 (.037)	-.154 (.002)	.015 (.769)	-.142 (.000)	-.061 (.231)	-.018 (.769)	.038 (.304)	.004	.004	.010	.060	-.075
		-.017 (.734)	.024 (.627)	-.005 (.876)	-.024 (.632)	.041 (.406)	-.010 (.840)	.057 (.250)	-.003 (.952)	.030 (.546)	.007 (.885)	.023 (.646)	-.051 (.309)	.010 (.834)	-.118 (.018)	1	-.409 (.000)	-.295 (.000)
		.061 (.218)	.062 (.213)	.046 (.357)	.016 (.752)	.008 (.877)	.046 (.359)	-.043 (.390)	-.062 (.211)	.051 (.306)	-.009 (.858)	.046 (.355)	-.108 (.029)	.060 (.231)	-.248 (.000)	-.409 (.000)	-.099 (.055)	-.099 (.047)
		-.100 (.175)	-.064 (.195)	-.096 (.055)	-.063 (.203)	-.050 (.315)	-.097 (.050)	.083 (.094)	.062 (.215)	-.002 (.961)	.037 (.460)	-.059 (.240)	.137 (.006)	-.075 (.133)	-.179 (.000)	-.295 (.000)	-.619 (.000)	1

For variable definitions, see Table 3.

<sup>a</sup>Pearson correlations are below the diagonal and Spearman correlations are above the diagonal.

**TABLE 8** Binary logit regression, model 1 ( $n = 405$ )

Variable	Expected sign	Model 1A			Model 1B			Model 1C		
		Coeff.	p-value	VIF	Coeff.	p-value	VIF	Coeff.	p-value	VIF
Hypotheses H1a–H1g										
NONOWNERMGMT	+	1.841	.003***	1.580	1.619	.016**	1.556	1.857	.005***	1.561
LEGAL	+	1.518	.120	1.341	1.854	.067*	1.381	1.670	.094*	1.409
BOARD	+	0.474	.424	1.717	0.696	.274	1.753	0.155	.802	1.707
SUBSIDIARY	+	1.275	.015**	1.289	1.392	.011**	1.290	1.440	.012**	1.329
NO_OF_OWNERS	+	0.116	.599	1.596	0.320	.184	1.687	0.132	.562	1.671
FAMILY	?	-0.262	.625	1.734	-0.297	.598	1.671	-0.498	.368	1.687
Hypothesis H2										
DEBT_RATIO	+	-0.486	.517	1.238	-0.249	.763	1.273	-0.488	.539	1.271
Hypothesis H3										
IMPORTANCE	+	1.355	.006***	1.435	1.349	.009***	1.420	1.084	.042**	1.436
Hypotheses H4a–H4c										
OUTSOURCE_EXP	-	-1.262	.080*	1.327						
OUTSOURCE_TAXADV	-				-2.585	<.001***	1.465			
OUTSOURCE_AUD	-							2.105	<.001***	1.148
Control variables										
SIZE	+	1.445	<.001***	1.161	1.558	<.001***	1.230	1.371	<.001***	1.152
NEGEQ	?	-0.351	.647	1.362	-1.088	.207	1.523	-0.746	.367	1.385
INDUSTRY_2	?	0.691	.408	2.882	0.937	.300	2.895	0.049	.953	2.330
INDUSTRY_3	?	-0.566	.433	3.195	-0.693	.365	3.119	-1.212	.086*	2.785
INDUSTRY_4	?	-0.684	.354	2.872	-0.744	.347	2.783	-1.225	.097*	2.537
Constant	?	-12.725	<.001***		-13.136	<.001***		-13.027	<.001***	
-2 log-likelihood			171.610			147.585			153.793	
R <sup>2</sup> (Cox and Snell)			.270			.312			.301	
R <sup>2</sup> (Nagelkerke)			.516			.597			.577	

Statistical (two-tailed) significance (p-values) better than .01, .05 and .1 indicated by \*\*\*, \*\*, and \*.

For variable definitions, see Table 3.

This suggests that the involvement of an external expert provides additional assurance for the integrity of financial information and, therefore, substitutes for an external audit. When analyzing this substitution effect with more detailed differentiation between outsourcing to a tax advisor (H4b) or an auditor (H4c), we find for *OUTSOURCE\_TAXADV* a strong significant negative association ( $p < .001$ ) and for *OUTSOURCE\_AUD* a strong significant positive association ( $p < .001$ ). While the result for outsourcing accounting tasks to a tax advisor is in line with our prediction suggesting a substitution effect when an external expert is involved, the result for outsourcing accounting tasks to an auditor is in contradiction with our hypothesis. If companies follow the independence requirements of German company law, auditors or other persons with whom they jointly exercise their profession are not allowed to perform an audit of the companies' financial statements if they are involved in bookkeeping or the preparation of these companies' financial statements (threat of self-review) according to § 319 (3) HGB. However, since we do not have access to the identities of individuals in our sample, we cannot exclude the possibility of this requirement being violated. Our finding for outsourcing accounting tasks to an auditor is in line with that from Niemi et al. (2012), who argue that problems of moral hazard will arise when accounting tasks are outsourced to an external auditor, thus inducing a demand for additional assurance. However, this argument would

hold for outsourcing to a tax advisor as well as an auditor. An alternative explanation is that, for small companies, tax-related services are the most widely used business services provided (Leung, Raar, & Tangey, 2008), and owing to a tax advisor's specialization it is possible that they could have a competitive advantage over the auditor providing tax-related services (Niemi et al., 2012). Accordingly, when the manager of a small business has to decide whether to engage a tax advisor or an auditor, it is more likely that they will choose a tax advisor unless they value an auditor's more comprehensive professional qualification. This will be the case especially if they find financial statement information important for their management activities, as indicated by our descriptive statistics (Table 7). Thus, in line with the argumentation for listed companies on the complementary role of auditing (e.g., Hay et al., 2008; Knechel & Willekens, 2006; Zaman et al., 2011), one could expect that managers who value the additional professional qualification of an auditor when outsourcing accounting tasks also appreciate the additional assurance of an audit. In summary, regarding outsourcing as a driver of voluntary audit, our results support only our hypotheses H4a and H4b but not H4c.

From the control variables in all three versions of our model 1, *SIZE* is highly significant ( $p < .01$ ), with the expected positive sign of the coefficient indicating that larger firms tend to opt more often for voluntary audit. Additionally, two industry variables (*INDUSTRY\_3*

**TABLE 9** Binary logit regression, model 2 ( $n = 405$ )

Variable	Expected sign	Model 2A			Model 2B			Model 2C		
		Coeff.	p-value	VIF	Coeff.	p-value	VIF	Coeff.	p-value	VIF
Hypotheses H1a–H1g										
NONOWNERMGMT	+	1.838	.003***	1.580	1.615	.016**	1.557	1.860	.005***	1.564
LEGAL	+	1.964	.036**	1.220	2.529	.009***	1.253	1.812	.052*	1.233
NONMANDBOARD	+	0.400	.492	1.435	0.638	.310	1.454	0.115	.852	1.400
SUBSIDIARY	+	1.280	.015**	1.288	1.397	.011**	1.291	1.442	.012**	1.328
NO_OF_OWNERS	+	0.119	.590	1.599	0.322	.183	1.691	0.135	.555	1.675
FAMILY	?	-0.292	.581	1.706	-0.321	.565	1.649	-0.511	.353	1.671
Hypothesis H2										
DEBT_RATIO	+	-0.501	.503	1.234	-0.263	.750	1.271	-0.494	.534	1.268
Hypothesis H3										
IMPORTANCE	+	1.357	.006***	1.443	1.348	.009***	1.426	1.087	.042**	1.440
Hypotheses H4a–H4c										
OUTSOURCE_EXP	-	-1.248	.084*	1.324						
OUTSOURCE_TAXADV	-				-2.582	<.001***	1.466			
OUTSOURCE_AUD	-							2.108	<.001***	1.147
Control variables										
SIZE	+	1.448	<.001***	1.163	1.560	<.001***	1.229	1.375	<.001***	1.154
NEGEQ	?	-0.357	.643	1.365	-1.093	.206	1.525	-0.754	.363	1.389
INDUSTRY_2	?	0.688	.408	2.880	0.935	.301	2.897	0.050	.952	2.332
INDUSTRY_3	?	-0.568	.431	3.190	-0.695	.363	3.122	-1.213	.086*	2.786
INDUSTRY_4	?	-0.698	.343	2.862	-0.756	.338	2.788	-1.228	.096*	2.536
Constant	?	-12.720	<.001***		-13.115	<.001***		-13.039	<.001***	
-2 log-likelihood			171.786			147.762			153.822	
R <sup>2</sup> (Cox and Snell)			.269			.311			.301	
R <sup>2</sup> (Nagelkerke)			.516			.597			.577	

Statistical (two-tailed) significance ( $p$ -values) better than .01, .05 and .1 indicated by \*\*\*, \*\*, and \*.

For variable definitions, see Table 3.

and *INDUSTRY\_4* are weakly significant ( $p < .10$ ) in only one of the three versions.

### 5.3.2 | Results for model 2

To test for auditing's possible substitutive role in the case of mandated governance mechanisms, we rerun our regression from model 1 replacing the variable *BOARD* with the variable *NONMANDBOARD*, whilst all other variables remain the same (model 2). From results for the three versions of model 2 (see Table 9), it can be seen that there is no change in pseudo  $R^2$  nor significance of the variables tested in the three versions of model 1, with the exception of *LEGAL*. Compared with model 1, in all three versions of model 2 the variable *LEGAL* shows a higher significance, while *NONMANDBOARD*, as well as *BOARD*, is insignificant in the first model. Thus, there is no evidence to support rejection of the null hypothesis for H1d, implying that we cannot show a complementary role for voluntary audit if a nonmandated board exists.

### 5.4 | Robustness check

Owing to our research method, we have to take into account a potential nonresponse bias. We test in two ways, therefore, to check whether or not the responsiveness of late respondents, as a proxy

for nonrespondents (Lehman, 1963; Niemi et al., 2012; Wallace & Mellor, 1988), differs significantly from early respondents. In the first step we augment our binary logistic regression models with the variable *RESPONSE\_TIME*, which measures the number of days elapsed before respondents returned the survey questionnaire. Results (untabulated) show that the regression coefficient *RESPONSE\_TIME* is not significant in any model; moreover, other results are not qualitatively affected by this inclusion. In the second step, we separate our sample using *RESPONSE\_TIME* from the median into early and late respondents; using a chi-square test (untabulated), we find no significant difference in the distribution of opting for voluntary audit or not. Summarizing, there is no evidence to suggest that our results are significantly affected by a nonresponse bias.

Furthermore, one could argue that the importance of financial accounting information for management activities (*IMPORTANCE*) and the decision to opt for voluntary audit might be different measures of the same attitude, which would imply problems of reverse causality. Since we have data from only one period we cannot perform strong causality tests requiring data from various time points. However, to address the potential effects of managers' attitudes to voluntary audit and the importance of accounting information, we use an approach similar to Niemi et al. (2012) and regress *IMPORTANCE* on the independent variables of our three models. Our results

(untabulated) do not give grounds to suspect the influence of endogeneity to any significant extent as  $R^2$  is considerably lower (.103, .100, and .110) and the regression coefficients that were previously significant are now insignificant (with the exception of *NONOWNERMG*  $p < .10$  and *SIZE*  $p < .10$  or  $p < .05$ ). We can conclude, therefore, that *VOLAUDIT* and *IMPORTANCE* are not driven by the same factors.

## 6 | SUMMARY AND CONCLUSIONS

This study focuses on the drivers of voluntary audit in German private companies. Germany provides a very different institutional setting than exists in other countries, as covered by prior literature, because there is no history of a mandatory audit for small companies. As a consequence, audit decisions are not influenced by a previously mandated audit and the German setting can, consequently, provide answers to the question of what ultimately could happen to those countries where there is a “trend away from the voluntary audit” (Dedman et al., 2014). Additionally, Germany provides a potentially worthwhile setting within which to examine the drivers of voluntary audit because it has the highest criteria for audit exemption in Europe, and thus arguably makes possible the broadest examination of private company voluntary audit choices. Conversely, in countries where a high percentage of private companies are statutorily audited (e.g., Finland and Sweden), they cannot signal their willingness to be voluntarily audited.

To analyze the drivers of the voluntary audit decision, we gathered information from small private companies in Germany regarding their financial statements prepared for the financial year ending 2011 from a questionnaire survey, which provided 405 usable responses.

We find that voluntary audits are performed much less often in Germany than they are in other countries covered by prior studies (e.g., Collis, 2012; Collis et al., 2004; Dedman et al., 2014; Niemi et al., 2012). This may relate to the absence of a mandatory audit history for small companies in Germany and the country's generous audit exemption regime granted to small firms. Since previous habits are most likely to influence the voluntary audit decision in studies from other countries with a previously mandatory audit regime, managers in Germany are expected to value the costs and benefits resulting from a voluntary audit differently. However, it has to be considered that cost–benefit considerations might be different between first-time and ongoing voluntary audits. Because we cannot examine such an effect with our data, we leave this for future research. Furthermore, it is possible that media attention surrounding Directive 2013/34/EU affected the answers to our survey questions. This has to be taken into account when interpreting our results.

Regarding the drivers of voluntary audit, in line with evidence from prior studies covering other countries we find that a higher proportion of company owners who are not involved in management increases the likelihood of an auditor being hired voluntarily. This finding is consistent with an interpretation that agency problems are present between the owners and outside managers of small companies. Extending previous research, we find that voluntarily audited

companies are more likely to be subsidiaries, supporting evidence from listed companies that the existence of a major shareholder increases demand for external auditing services. Furthermore, our finding that companies in the legal form of an AG are more likely to opt for voluntary audit provides evidence that information asymmetries between managers and shareholders depend on a company's legal form. In contrast to prior research (Dedman et al., 2014), we do not find evidence that firms opt for voluntary audit of their financial statements if they have a larger number of owners. Additionally, we cannot corroborate findings that the status as a family firm impacts on a firm's voluntary audit decision. This is in contrast to results from Collis et al. (2004) and Collis (2010), but in line with the later study of Collis (2012). Furthermore, extending prior research on listed firms, we cannot provide support for the argument that the general existence of either a supervisory board or a nonmandated supervisory board having an impact on the voluntary audit decision. Nor can we confirm the claim that leverage could be a voluntary audit driver among small companies in Germany. This finding is significant, in that it differs only slightly from that of Dedman et al. (2014), who from UK data find weak support for leverage as a voluntary audit driver, but is consistent with Niemi et al. (2012), who do not find support using Finnish data. Put together, these results suggest that in traditional bank-dominated economies, such as Germany and Finland, banks have different monitoring mechanisms for their small and private enterprise customers that either substitute for or are more cost efficient than a voluntary audit. However, in this context, the number of lenders might be another factor impacting the need for a voluntary audit. Literature suggests that borrowing from a single lender improves a lender's control (Petersen & Rajan, 1994), which in turn could decrease demand for an audit. As we do not have any data on the number of lenders used by our sample firms, we leave it for future research to examine in more detail the impact of a firm's relationship with its lenders on the demand for a voluntary audit. Consistent with other studies (Collis, 2010, 2012; Collis et al., 2004; Niemi et al., 2012) in the field of voluntary audit, we find that an audit could be interpreted as a check of information provided measured by the importance of financial statement information for management activities. We find support for an inverse relation between the use of voluntary audits and the outsourcing of accounting tasks to an external tax advisor, suggesting that the involvement of an external tax advisor in accounting tasks substitutes for an audit. This is in line with earlier evidence from Niemi et al. (2012), who find that companies which consider tax advisory services from an external accountant to be beneficial are less likely to hire an auditor if the audit is non-mandatory. In contrast to the substitution view, but consistent with findings from previous research (Niemi et al., 2012), we find a positive relationship between the outsourcing of accounting tasks to an external auditor and the voluntary audit decision. This finding suggests that managers valuing the additional professional qualification of an auditor when outsourcing accounting tasks may also appreciate the additional assurance provided by an audit, indicating a complementary role of auditing found in previous research for listed companies (e.g., Hay et al., 2008; Knechel & Willekens, 2006; Zaman et al., 2011).

Our study provides three major contributions. The first lies in validation of earlier research findings from other jurisdictions in a very

different institutional setting. In the absence of a statutory audit history for the companies considered, their decisions, unlike those in other studies, are not influenced by a previously mandated audit regime. Our second contribution is taking a more profound approach than earlier studies (Niemi et al., 2012) in examining the link between a voluntary audit decision and the outsourcing of accounting tasks. Considering the different professional qualifications of those to whom the accounting tasks are outsourced, we add to existing literature regarding the complementary or substitutive role of auditing. As a third contribution, our study examines drivers of voluntary audit related to agency conflicts with owners (the legal form of the company, the existence of a supervisory board, and the status as a subsidiary) that have not been documented in prior research. Investigating the impact of nonmandated supervisory boards on voluntary audit decisions in small companies, we add to the literature (on listed firms) discussing the complementary/substitutive relationship between governance mechanisms and external auditing.

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## ENDNOTES

- <sup>1</sup> At the time of this study the size thresholds were total assets €4,840,000, turnover €9,680,000, and average number of employees 50.
- <sup>2</sup> There is, for example, no special professional organization for people dealing with accounting and who are not at the same time professional auditors (Haller, 2003).
- <sup>3</sup> Prior studies often included only independent companies (e.g., Collis, 2012; Collis et al., 2004; Dedman et al., 2014) in their samples, because subsidiaries are in other jurisdictions often not eligible to take advantage of the audit exemption, which, however, is not the case in Germany.
- <sup>4</sup> Even though the audit report on the consolidated financial statements also has to consider subsidiaries' financial statements, this does not automatically imply an audit of the individual financial statements of the subsidiaries included in the consolidated financial statements because of materiality (Baetge, Stellbrink, & Janko, 2011; Schmidt & Almeling, 2014).
- <sup>5</sup> After discussing the questionnaire with four experts in the auditing profession, it was piloted with five managers of small companies; see Appendix for an extract of the translated questionnaire showing the questions regarding the variables analyzed in this study.
- <sup>6</sup> In compliance with the size criteria of the German Commercial Code, a company is defined as small if it does not exceed more than one of the following thresholds by the year ending in 2011: total assets €4,840,000, turnover €9,680,000, and 50 employees.
- <sup>7</sup> In total, we used three different size classes. For details see Table 2.
- <sup>8</sup> The proportion of imputed data is 1.36%.
- <sup>9</sup> It is a family firm if one or two people and their relatives (one or two families) hold together more than 50% of the voting shares.

<sup>10</sup> Further 4 per cent of the companies report having a voluntary review of their financial statements and 34 per cent report making use of a compilation of their financial statements with the practitioner providing limited or reasonable assurance on underlying records and documentation.

<sup>11</sup> However, it must be noted that previous UK studies using the FAME database possibly overestimate voluntary audit ratios (Collis, 2010; Collis et al., 2004; Dedman et al., 2014). As these studies use for their sample selection the amount of turnover—for instance, disclosed in companies' financial statements, which is a voluntary disclosure—they automatically eliminate the vast majority of small companies that do not opt to report such data. Since the voluntary disclosure is likely to be positively correlated with other types of voluntary behavior (such as a voluntary audit), the audit ratios derived might be biased (Collis, 2012) and they could, therefore, actually be lower.

## ORCID

Andreas Weik  <http://orcid.org/0000-0001-9663-0397>

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**Andreas Weik** is a specialist in international accounting at comdirect bank AG, Quickborn.

**Brigitte Eierle** is Professor of International Accounting and Auditing at the University of Bamberg.

**Hannu Ojala** is Professor (act.) in accounting at the University of Tampere and Professor of Practice in International Accounting at Aalto University School of Business.

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## APPENDIX A

### Extract of translated questionnaire showing variables analyzed

#### 1.1 Who did the company's bookkeeping for the financial year 2011?

- External tax consultant
- External top-tier or second-tier auditor
- External accountant
- Employee of the company
- Someone else

#### Who did the company's tax return preparation for the financial year 2011?

- External tax consultant
- External top-tier or second-tier auditor
- Employee of the company
- Someone else

#### Who did the company's financial statement preparation for the financial year 2011?

- External tax consultant
- External top-tier or second-tier auditor
- Employee of the company
- Someone else

#### 1.3 How important are financial statement information for your management activities?

- Very important
- Important
- Neither important nor not important
- Not important
- Not important at all
- Assessment not possible

#### 2.1 Was the company's 2011 financial statement audited by an auditor? (If you are not sure which type of audit was carried out you can check up your audit report.)

- No
- Yes, with issuance of an attestation of an audit review
- Yes, with issuance of an audit report

#### 3.3 How many owners did the company have in 2011? \_\_\_\_\_

How many managers did the company have in 2011? \_\_\_\_\_

How many owners were also managers in 2011? \_\_\_\_\_

Was the company a family firm in 2011? (A company is a family firm if one or two persons and their relatives together hold at least 50% of the voting shares of the company.)

- Yes
- No

(Continued)

**Extract of translated questionnaire showing variables analyzed**

3.4 **Was the company included in a 2011 consolidated financial statement as a parent company or as a subsidiary? (A company is assumed to be a subsidiary if another company holds at least 50% of the voting shares.)**

- No, the company was not included in a consolidated financial statement
- Yes, the company was included in a consolidated financial statement as a parent company.
- Yes, the company was included in a consolidated financial statement as a subsidiary

3.5 **Was there a Board of Directors or an Advisory Board in the company in 2011?**

- Yes
- No

**Was there any other control committee in the company in 2011?**

- Yes
- No

4. **Financial statement information (Please state the following financial data for the financial year 2011 in thousand euros.)**

**Total assets (k€)** \_\_\_\_\_

**Was there a deficit not covered by equity at the end of the financial year 2011?**

- Yes
- No