

# The Use of Shared Service Centers in the Audit Industry and the Impact on Financial Analyst Perceptions

Ewald Aschauer

*Vienna University of Economics and Business*

Reiner Quick

*Technical University Darmstadt*

Markus Isack

*Vienna University of Economics and Business*

*Johannes Kepler University Linz*

**ABSTRACT:** Audit firms are increasingly using shared service centers (SSCs). There are arguments suggesting an improvement or a deterioration in audit quality due to their use. We provide experimental evidence regarding the effects of SSCs on audit quality, as perceived by financial analysts. Based on survey responses from 205 financial analysts, we investigate whether using SSCs affects perceived audit quality and whether the SSC's location and task complexity matter. We find that SSC involvement negatively impacts perceived audit quality, and the additional outsourcing of complex tasks exacerbates this effect. We demonstrate that the SSC's location does not have a significant effect on perceived audit quality. Finally, when outsourcing additional high-complexity tasks, the interaction between location and task complexity leads to a significant negative impact on perceived audit quality.

**Keywords:** shared service center; outsourcing; farshoring; nearshoring; perceived audit quality; financial analysts.

## I. INTRODUCTION

The outsourcing of audit procedures to shared service centers (SSCs) has become increasingly important for audit firms, which even strive to extend the use of SSCs (Daugherty, Dickins, and Fennema 2012; Arnold 2018). Price competition in audit markets is intense (Averhals, Van Caneghem, and Willekens 2020; Pan, Shroff, and Zhang 2023), so there is also a need for efficient audits, and SSCs may contribute to efficiency. SSCs in the auditing industry are defined as an outsourcing structure in which an audit firm hands over part of its audit activities to a subsidiary specializing in certain tasks (Canning, O'Dwyer, and Boomsma 2022; Didia, Mayse, and Randle 2018). This setting differs from multinational group audits (Sunderland and Trompeter 2017; Downey and Bedard 2019; Downey and Westermann 2021) and from using the work of others (International Standards on Accounting (ISAs) 600, 610, and 620), so inferences

---

We would like to thank Linda A. Myers and two anonymous reviewers for helpful commenting on earlier versions of this paper and participants at the 2022 International Conference of the *Journal of International Accounting Research*, the 2022 European Accounting Association (EAA) Annual Congress, the 2022 Audit & Assurance Conference, and the 2021 European Auditing Research Network (EARNet) Symposium for discussions. Derived data supporting the findings of this study are available from Ewald Aschauer on request. The authors received no financial support for the research, authorship, and/or publication of this article. There is no actual or potential conflict of interest in relation to this article. All participants took part in the study voluntarily and thus gave consent to participate.

This paper was presented at the 2022 International Conference of the *Journal of International Accounting Research*.

Ewald Aschauer, Vienna University of Economics and Business, Institute for Accounting and Auditing, Department of Finance, Accounting & Statistics, Vienna, Austria; Reiner Quick, Technical University Darmstadt, Faculty of Business and Economics, Department of Accounting and Auditing, Darmstadt, Germany; Markus Isack, Vienna University of Economics and Business, Institute for Accounting and Auditing, Department of Finance, Accounting & Statistics, Vienna, Austria and Johannes Kepler University Linz, Institute for Accounting and Auditing, JKU Business School, Linz, Austria.

Editor's note: Accepted by Linda A. Myers, under the Senior Editorship of Steve Lin.

*Submitted: February 2022*

*Accepted: June 2024*

*Early Access: July 2024*

from prior studies on these topics do not necessarily apply to SSCs.<sup>1</sup> Audit firms are not required to disclose the use of SSCs in the auditor's report, and they are quite secretive about the use of SSCs (Aschauer and Quick 2024; Arnold 2018), which limits archival research on their use. Although prior literature uses experiments to shed light on the use of SSCs in auditing, we extend prior research by investigating the impact of amount and complexity of tasks outsourced to SSCs. We do this by comparing the effects of the farshore versus the nearshore setting and by applying a control condition without the use of SSCs on perceived audit quality of financial analysts.

There are several reasons why SSCs may be used in the auditing industry. First, audit costs may be reduced, for example, because of lower personnel costs, either by hiring staff just having commercial apprenticeship training or accessing labor markets with lower salary levels (Aschauer and Quick 2024; Dickins and Daugherty 2012). Second, economies of scale can be achieved (Downey 2018) through high standardization (Arnold 2018). Third, specialization and learning-curve effects could also improve audit quality. In contrast, there can be disadvantages to the use of SSCs, such as increased monitoring and coordination challenges. Additionally, it is questionable whether SSCs are recognized as credible sources because their exercised professional judgment may differ from that of audit team members, thereby lowering perceived audit quality. Although auditors indicate that SSCs are likely to increase audit quality, third parties are not usually informed about the use of SSCs, and audit oversight institutions focus on SSC practices and their impact on audit quality.

Literature to date highlights the motivation and pitfalls for audit firms when implementing SSC practices and analyzes associated changes in audit firms (Aschauer and Quick 2024). In addition, qualitative research shows that auditors in charge of the SSCs assume a positive impact of SSCs on audit quality, although information about their use is irrelevant to third parties (Aschauer and Quick 2024). Interestingly, some experimental literature provides evidence that perceptions of SSC audit quality may be negative. For example, Dickins and Daugherty (2012) reveal jurors' reservations regarding the use of SSCs by audit firms, as evidenced by a negative effect on perceived audit quality and confidentiality. Furthermore, Daugherty, Dickins, and Fennema (2014) find that jurors find for greater damages against the auditor when audit tasks are performed farshore compared with in the home country. Lyubimov, Arnold, and Sutton (2013) also show that jurors' perceived audit quality is lower when audit tasks are outsourced. By contrast, Didia et al. (2018) find that outsourcing activities do not affect bank loan officers' perceptions of financial statement reliability or their loan decisions. Moreover, Didia, Mayse, and Ofori-Mensah (2022) find that bank loan officers' perceptions of audit quality are not affected by outsourcing versus far shoring. In summary, individuals possessing greater knowledge of financial reporting do not perceive audit quality to be compromised by proximity, in contrast to judges and jurors. This provides tension for expectations derived from proximity theory.

In contrast, to our knowledge, the degree of complexity has not been addressed by previous studies.<sup>2</sup> We use an experiment with a  $2 \times 2 + 1$  between-subjects design, including a control condition in which the audit firm did not make use of an SSC, to extend this line of research. There are two important design opportunities regarding the use of SSCs, so we apply two treatment variables, namely *Task Complexity* and *Outsourcing Distance*. In our experimental design, we distinguish between the delegation of low-complexity audit tasks, i.e., tasks not requiring the application of professional judgment, specified by examples, and the additional delegation of high-complexity audit tasks, i.e., tasks requiring the application of professional judgment, also specified by examples. This design reflects audit firms' standard use of SSCs. Audit firms either delegate low-complexity tasks or low-complexity tasks plus additional high-complexity tasks to their SSCs. This design choice confounds the amount and complexity of audit tasks but better reflects practice. In the case of standard audit task outsourcing, the amount and complexity of delegated tasks can vary (low-complexity tasks only versus additional high-complexity tasks) (Aschauer and Quick 2024).<sup>3</sup>

The impact of SSCs on perceived audit quality may differ and, as suggested by complexity theory, be harmful in the case of complex tasks. In addition, the distance between the SSC and the audit team is relevant, given that, according to proximity theory, a reduction in knowledge sharing and collaboration occurs when there is a greater distance between organizations. Thus, audit quality may be compromised. SSC outsourcing proximity can be nearshore or farshore.<sup>4</sup> The participants' task in our experimental case was to assess audit quality. Regarding the subjects of our experimental study,

<sup>1</sup> Group audits are often characterized by the involvement of auditors from local audit offices near a foreign subsidiary of the group to provide audit evidence on the subsidiary being consolidated into the group accounts. By contrast, SSCs are a separate organizational unit of the audit firm with less qualified staff.

<sup>2</sup> Prior research only indirectly examines the effect of task complexity on perceived audit quality by focusing on audit judgments, and with mixed results (Daugherty and Dickins 2009; Daugherty et al. 2014).

<sup>3</sup> We acknowledge that audit firms can also implement SSC focused on expert tasks, e.g., data analytics, but this alternative is beyond the scope of our paper and can be addressed in future research.

<sup>4</sup> Nearshoring applies when the audit firm and its SSC are located in countries close to each other. In the relevant versions of our experimental case, we informed participants that the SSC is in the same country as the audit firm. Farshoring is when the audit firm and its SSC are located in different countries or continents separated by a distance that is substantially larger than that encountered in nearshore relationships.

we chose a highly qualified group that is more capable of evaluating auditors' work than less qualified subjects. Namely, our subject pool is composed of financial analysts with a postgraduate CVA (Certified Valuation Analyst) or CFA (Chartered Financial Analyst) certification or equivalent expertise and experience.<sup>5</sup> Financial analysts are sophisticated investors that use financial reports, and therefore, the perceptions of this group are of particular interest to regulators (Hopkins 1996). We had 205 financial analysts from Austria participate in our experiment, which was approved by our respective Institutional Research Boards.

Our results indicate that applying SSCs worsens financial analysts' perceptions of audit quality. These results align with previous research findings that document the reservations of jurors regarding the use of SSCs in the audit process. Furthermore, our results show that task complexity has a significantly negative effect, i.e., if the audit firm additionally assigns an SSC with highly complex tasks, the negative effect on perceived audit quality is even stronger. However, our results do not indicate that proximity has a significant influence, consistent with related research on bank loan managers and audit committee members. In addition, we find a significantly negative interaction effect between proximity and task complexity, meaning that the negative impact is strongest when additional high-complexity tasks are outsourced to a farshore SSC. We also demonstrate that trust in the work of an SSC influences the relation between task complexity and perceived audit quality.

The contributions of our paper are manifold. First, prior research on the impact of SSC studies perceptions of jurors, judges, and bankers in the United States (U.S.) setting. Our study investigates perceived audit quality by surveying European financial analysts and thus complements prior research with findings based on perceptions of a highly relevant financial statement user group from a different geographic setting. This allows us to add to the body of knowledge supporting regulatory reservations in the use of SSCs when conducting audits (Canning et al. 2022). Second, our experimental design, unlike many existing studies, incorporates a control condition where the audit team carries out all audit tasks without using an SSC. This is important because studies using jurors (e.g., Chambers, Reckers, and Reinstein 2020; Daugherty et al. 2014) and judges (e.g., Arel 2012) combine farshoring and general outsourcing. Consequently, our research offers insights into the effects of delegating work to an SSC compared with not using one. Third, we provide evidence on the impact of task complexity and on the interaction between task complexity and outsourcing location on perceived audit quality, which, to the best of our knowledge, has not been addressed in prior research. Fourth, we show that trust in the work of SSCs influences the relation between task complexity and perceived audit quality. Last, we add academic evidence on a phenomenon in auditing practice that cannot be investigated archivally due to a lack of public information.

Our investigation has implications for regulators who already focus on the use of SSCs by audit firms. Our results show that information on the use of an SSC is relevant to users. This is important because the proposal for European Union (EU) Regulation 2014/537, the COM(2011)779, suggests the mandatory provision of information on the applied audit methodology in the auditor's report. However, the final EU Directive 2014/537 shifted this information to an additional report to the audit committee. Likewise, the Public Company Accounting Oversight Board (PCAOB) considered the mandatory disclosure of work performed by SSCs in its draft of Form AP draft but refrained from this disclosure requirement in its final rule (PCAOB 2015). In light of our findings, the EU and PCAOB may wish to reconsider making the disclosure of information on the audit methodology in general, and on the use of SSCs in particular, mandatory in the auditor's report. Additionally, regulators might consider implementing trust-building measures (including specific quality controls) to avoid potentially negative impacts of SSCs. Moreover, the revealed overall negative assessment of SSCs should serve as a signal to audit firms that they should invest in mitigation strategies. Furthermore, we contribute knowledge related to the design of future SSCs, both by audit firms themselves and by regulatory and oversight bodies, to avoid negative perceptions. On the one hand, the transfer of complex audit tasks to SSCs should be done very cautiously. On the other hand, our results suggest, consistent with some prior research findings, that proximity to the SSC may not be as relevant as theory would predict. Overall, we provide an important starting point for future research to delve deeper into perceptions of SSC use.

The remainder of the paper proceeds as follows. Section II describes the current state of related discussions, prior research, and the theoretical background and develops our hypotheses. Section III explains the methodology. Section IV presents the research results, and Section V concludes the paper by pointing out the most important results, their implications, and the study's limitations.

<sup>5</sup> A CVA is a professional qualification awarded by the U.S. National Association of Certified Valuators and Analysts. The program for becoming a certified analyst covers business valuation fundamentals, techniques, and theory; income and asset approaches to business valuation; case analysis; and special purpose valuation. A CFA is a globally recognized and respected professional notation awarded by the CFA Institute. Recipients of the certification have an excellent understanding of investment management, financial analysis, quantitative analysis, equities, fixed income, and derivatives and have a good general knowledge of other areas of finance.

## II. BACKGROUND AND DEVELOPMENT OF HYPOTHESES

SSCs are an organizational concept that consolidates processes within a company, reduces redundancies, delivers support processes, reduces costs, focuses on internal customers, and operates as a separate organizational unit. SSCs align with external competition and are managed similarly to a company (Schulz and Brenner 2010). In the auditing industry, SSCs refer to a type of outsourcing arrangement whereby an audit firm delegates specific audit tasks to a subsidiary that specializes in those activities (Canning et al. 2022; Didia et al. 2018). Some prior studies treat outsourcing and the farshoring of an SSC as interchangeable concepts (Didia et al. 2018). Therefore, we classify studies that use outsourcing and farshoring with prior research on SSC location design choice, and we classify studies that consider sourcing without farshoring with outsourcing.

There are several reasons for the use of SSCs in the audit sector. First, using an SSC allows audit firms operating in a competitive market environment to lower audit costs. Because certain business functions can be concentrated in SSCs as semiautonomous business units (Bergeron 2003), SSCs enable economies of scale and scope (Downey 2018). Second, SSCs extend audit firm access to the labor force and to onboarding possibilities (Aschauer and Quick 2024; Dickins and Daugherty 2012), lowering personnel costs (Daugherty and Dickins 2009). Third, digitalization within audit firms leads to greater standardization of audit processes, which is a prerequisite for SSC implementation. Arnold (2018) states that audit firms will strive to standardize 80 percent of their audit processes in the future, resulting in an increased use of outsourcing to SSCs. However, SSCs are also associated with certain costs. Specifically, the use of an SSC requires coordinated effort between the audit team and the center. SSCs reduce auditors' monitoring abilities of auditors because tasks outsourced to the SSC are processed at a greater distance, increasing data-protection challenges. If audit firms decide to assign audit activities to an SSC, different design choices emerge. This includes the location of the SSC (i.e., near- versus farshoring) and the type of audit procedures (i.e., low-complexity tasks only versus additional high-complexity tasks) delegated to SSCs.

According to source credibility theory, the credibility of a source depends on its expertise, competence, and trustworthiness (Birnbaum and Stegner 1979; McGinnies and Ward 1980; DeZoort, Houston, and Hermanson 2003; Pornpitakpan 2004). However, knowledge about the implementation of applied processes also contributes to credibility (Chinn and Rinehart 2016). Because the successful completion of audit tasks requires a certain level of professional expertise (Asare and McDaniel 1996), employees of traditional SSCs are generally perceived by auditors as less qualified compared with audit team members (Canning et al. 2022). They are usually not university graduates and do not participate in continuing education to prepare for professional exams, and the turnover rate at SSCs is high (Aschauer and Quick 2024). Therefore, it is questionable whether SSCs can execute professional tasks with the same quality as audit team members (Canning et al. 2022; Aschauer and Quick 2024). Although employees of traditional SSCs are generally perceived as less qualified than audit team members, SSCs currently specialize in certain tasks (Canning et al. 2022; Didia et al. 2018), which could lead to high-quality output. However, audit team members usually specialize as well, particularly in their early years, when they repeatedly perform tasks like inventory counts or obtaining bank confirmations. In contrast to employees of an SSC, audit team members are client facing and are directly involved in the financial statement audit, giving them a much better overview of the process (Canning et al. 2022). Accordingly, they are better able to assess how their tasks contribute to the audit process. Canning et al. (2022) also show that audit partners may perceive outsourced audit work as of low quality. This can also result in negative perceptions of audit quality when SSCs are used.

Proximity theory suggests that increased organizational distance reduces knowledge sharing and collaboration (Capaldo and Petruzzelli 2014). Prior literature posits that a lack of proximity is a major driver of lower perceived audit quality (Lyubimov et al. 2013). SSCs are organized as separate units within the audit firm, and SSC employees are not members of the audit team. They also have few social ties with audit team members, such as those developing from common training (Canning et al. 2022). Therefore, a large geographic distance between the SSC and the audit team may reduce perceived audit quality.

Prior research addresses audit firms' outsourcing activities. Qualitative research shows the motivation for and pitfalls facing audit firms implementing SSCs (Aschauer and Quick 2024; Canning et al. 2022). In-depth interview studies reveal that local team members assume a liaison role, but time constraints lead to difficulties (Downey 2018). However, Aschauer and Quick (2024) indicate that auditors perceive SSCs as potentially enhancing audit quality.

Based on two experiments with jurors, Chambers et al. (2020) show that audit firms that use SSCs in India instead of the U.S.-based audit team lead jurors to award higher negligence assessments. Similarly, Daugherty et al. (2014) demonstrate that jurors award plaintiffs greater compensation for damages when the audit is performed by an affiliated SSC, compared with when audit work is done by staff who are directly supervised. In another experiment with judges, Arel (2012) reveals that judges rate the likelihood that auditors are held liable by juries as significantly higher when audit

firms use outsourcing. Although these experiments do not disentangle the use of SSCs from the use of farshoring, they do provide insights into the consequences of outsourcing.

Overall, prior empirical evidence finds a negative impact on perceived audit quality of using outsourcing. Based on this, source credibility theory, and proximity theory, we propose the following hypothesis, stated in the alternative:

**H1:** The use of an SSC for audit production negatively impacts financial analysts' perceptions of audit quality.

Furthermore, based on proximity theory, cross-border outsourcing generally increases risk (Aron, Clemons, and Reddi 2005), and this risk increases when knowledge work is involved (Lyubimov et al. 2013). Although audit farshoring might be advantageous for audit firms from recruitment and personnel-cost perspectives, third-party audit quality assessments might be affected by higher uncertainty and higher perceived risk. This is because auditors may be unable to adequately perform their duties when proximity is reduced because of lower opportunities for monitoring and supervision, thereby reducing the auditor's ability to demonstrate reasonable diligence (Shamis, Green, Sorensen, and Kyle 2005; Blackman, Freedman, and Levy 2004; Mintz 2004).

Hanes (2013) concludes from a literature review that geographically distributed audit work is likely to be very different from work performed in more traditional arrangements and therefore cannot be treated as mere replications of domestic processes abroad. Moreover, auditors adjust their reliance on staff judgments based on the physical distance to a specialist (Weisner and Sutton 2015). According to Wilson, Crisp, and Mortensen (2013), research on distributed work demonstrates that proximity encompasses various dimensions. These dimensions influence the decision making environment, through factors like spatial or social distance (Weisner 2015). Therefore, proximity is frequently operationalized using geographical distance.

Interview-based research with auditors shows that a lack of trust in farshore auditors complicates audit team collaboration with SSCs (Downey 2018). Interestingly, in an experiment with auditors, Weisner and Sutton (2015) observe similar reservations. They find that the auditor places less reliance on the work of an internal information technology (IT) auditor (with a global certificate) when the IT auditor is located in India versus when a similarly qualified domestic service provider is used. In the case of farshoring, SSC staff are typically more qualified than in nearshoring (Shamis et al. 2005). However, there are other quality-reducing effects. Interviews with audit firm partners reveal problems caused by different languages, including weaknesses in the use of English; cultural differences that, for example, discourage employees from asking questions or indicating a lack of understanding; lax data protection standards; or different attitudes toward work (Aschauer and Quick 2024).

In an experiment with judges, Arel (2012) finds that audit firms' use of farshored SSCs lead judges to rate the likelihood that auditors will be held liable by juries as significantly higher. In addition, two experimental studies with jurors reveal that audit firms using farshoring lead jurors to award greater compensation for damages against audit firms (Daugherty et al. 2014) and more severe negligence assessments (Chambers et al. 2020). Also using assessments from jurors, Lyubimov et al. (2013) provide similar experimental evidence regarding farshoring. In contrast, other experimental research finds that perceived audit quality among knowledgeable stakeholders, such as bank loan officers and audit committee members, is less impacted by the use of farshored SSCs. In fact, in an examination of bank loan officer perceptions of financial statement reliability and loan decisions, Didia et al. (2018) fail to find a significant effect of farshoring of audit procedures. Furthermore, bank loan officers' perceptions of audit quality are not significantly impacted by the location of a SSC or an unrelated audit firm (Didia et al. 2022). Similarly, in a survey, Dickins and Daugherty (2012) show that audit committee members generally do not expect a negative impact on audit quality when a farshore SSC is involved in the audit, although they expect a negative impact if audit judgment is required.

Proximity theory has been proposed as explaining negative perceptions of audit quality when audit tasks are outsourced to farshored areas. Although some empirical evidence supports this theoretical expectation, particularly among judges and jurors, the impact of farshored SSCs on perceived audit quality is not significant among stakeholders with more expertise in financial reporting, such as bank loan officers and audit committee members. We posit that financial analysts are more comparable to bank loan officers and audit committee members than to judges and jurors because analysts are more knowledgeable about financial reports. Hence, we expect no significant impact of a farshored SSC on perceived audit quality of financial analysts. Our alternative hypothesis is stated as

**H2:** A farshored SSC does not impact financial analysts' perceived audit quality more negatively than a nearshored SSC.

According to complexity theory developed by Bonner (1994), which is based on the general information processing model (Liu and Li 2012), task complexity in the context of auditing integrates three dimensions: input complexity, processing complexity, and output complexity. An *input* may be complex due to a lack of specifications, a *process* may be

complex due to interdependent procedures, and an *output* may be complex if there are multiple objectives. Bonner (1994) suggests that task complexity can decrease the quality of auditors' judgments because an inappropriate use of knowledge and inconsistent use of information may both occur (Bonner 1994; Libby and Lipe 1992). An increase in task complexity is associated with higher detection risk, which leads to a higher risk of auditor misjudgment. As complexity increases, a lack of competence can jeopardize successful task performance because knowledge may be misapplied (Bonner 1994; Tan, Ng, and Mak 2002). In summary, task complexity is positively associated with audit quality risks, and these risks will increase when less qualified staff perform a complex task. Informed parties like financial analysts are likely to recognize these relations and therefore perceive a decrease in audit quality when task complexity increases.

According to source credibility theory, although the same tasks are performed, the underlying knowledge and the available information are likely to differ depending on the location where a task is performed. SSCs can attempt to redesign the process by which the task is performed, considering differences in communication, knowledge sharing, work design, and social identity (Downey 2018; Hanes 2013; Fried, Levi, and Laurence 2008; Hinds and Kiesler 2002). Given that the successful completion of audit tasks requires a certain level of professional expertise, which increases with task complexity (Asare and McDaniel 1996), professional expertise may differ between audit team members and SSCs staff, and this difference can increase with task complexity (Kahneman 1973; Simon 1973).

Regarding task complexity and SSCs, prior empirical research is scarce. The research that exists shows that, with increasing task complexity, the risk of knowledge misapplication increases, which in turn has a negative impact on audit-judgment performance (Alqudah, Amran, and Hassan 2019; Mohd-Sanus and Mohd-Iskandar 2007), affecting audit quality (Trotman 1998). Findings in the context of SSC use and audit judgment are mixed. Although surveyed audit committee members in Dickins and Daugherty (2012) expect a negative impact on audit quality when complex audit tasks are outsourced, Daugherty et al. (2014)'s experiment with jurors demonstrates that higher levels of audit judgment have no effect on the damages awarded.

Complexity theory suggests that an increase in task complexity can negatively affect audit quality. Moreover, source credibility theory assumes that information from sources with less expertise is perceived as less credible. SSCs have a more significant expertise deficit regarding complex tasks, so that data stemming from an SSC should be perceived as less credible if it also handles more complex audit tasks. Prior research finds that audit committee members perceive audit quality to be lower when complex audit tasks are outsourced. Therefore, we propose the following hypothesis, stated in the alternative:

**H3:** The impact on financial analysts' perceptions of audit quality is more negative when a SSC handles more complex audit tasks versus when a SSC handles less complex audit tasks.

According to complexity theory, high complexity and low proximity may result in lower perceived audit quality when audit teams assign audit tasks to an SSC. Although prior research does not reveal a significant negative effect of low proximity alone, the simultaneous presence of high complexity and low proximity could lead to a more negative impact. We argue that, based on source credibility theory, the perceived credibility of an audit task conducted by an SSC diminishes as the amount and complexity of the tasks increases. In other words, as the required underlying knowledge about how the task is done increases, implying a more complex task, the more important are oversight and quality control. In a farshoring setting, there are several constraints regarding oversight and quality control, including time zone differences, language problems, cultural barriers, or difficult cultural interactions (Downey 2018; Hanes 2013; Fried et al. 2008; Hinds and Kiesler 2002). These barriers are extremely problematic when delegating highly complex tasks to an SSC, which could impair perceived audit quality. This expectation is consistent with those of committee members, who argue that the degree of audit judgment required for farshored audit tasks is a determining factor for audit quality (Dickins and Daugherty 2012). Therefore, we propose our final alternative hypothesis:

**H4:** The negative impact of an SSC also handling more complex audit tasks on financial analysts' perceived audit quality is exacerbated in the case of a farshored SSC.

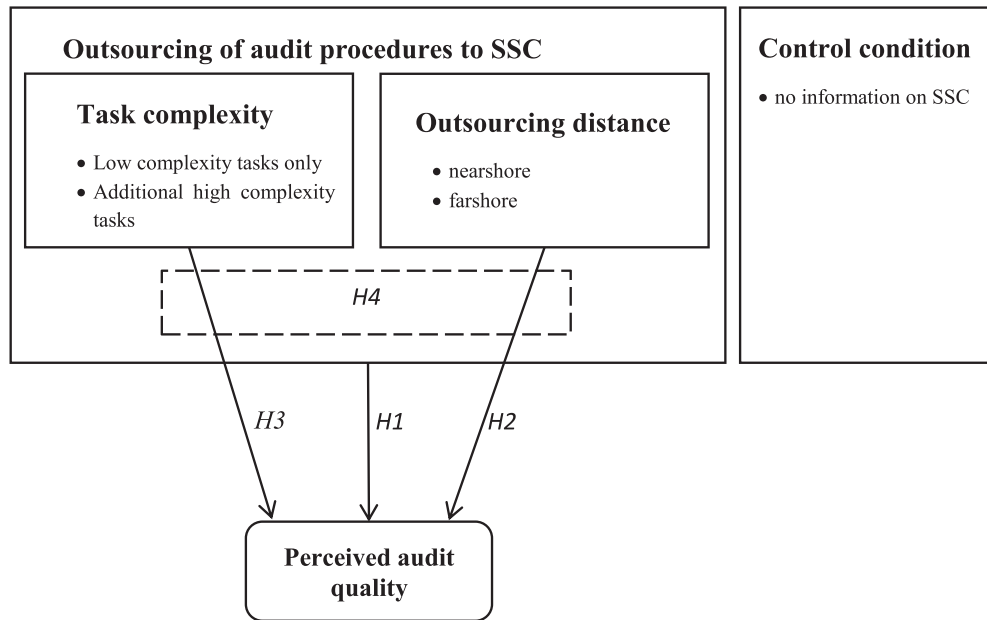
Figure 1 summarizes the links between the experimental conditions and the hypothesized effects of SSCs on perceived audit quality. H1 focuses on general perceptions of outsourcing, and H2, H3, and H4 provide a more detailed view.

### III. METHODOLOGY

#### Procedure and Tasks

We use an experiment with a  $2 \times 2 + 1$  between-subjects design, including a control condition in which the auditor did not use an SSC. All other experimental cases present a setting in which an SSC was used for conducting the audit.

**FIGURE 1**  
**Links between the Dependent Variable (Perceived Audit Quality), the Treatment Variables (*Task Complexity* and *Outsourcing Distance*), and the Control Condition**



In settings with an SSC, we manipulated the proximity of the SSC (i.e., nearshore versus farshore) and complexity of the audit task that is outsourced to the SSC (i.e., low-complexity tasks only versus additional high-complexity tasks).

The participants were presented with a short fictitious audit case because we wanted to keep the case simple since financial analysts do not assimilate more complex information (Plumlee 2003). Across all five treatments, the case materials describe a large, publicly listed auto parts manufacturer that we name Alpha. We also provided preaudited information regarding sales, balance sheet totals, inventories, net income, and earnings per share. The case was designed so that the participants would expect a high standard of corporate governance (i.e., a listed firm with an audit committee) and a high level of audit quality (i.e., a Big 4 audit firm that has conducted the audit for five years with the same audit partner). To measure the level of perceived audit quality, we asked the financial analysts to assess the quality of the financial audit on a seven-point Likert scale (“How would you rate the quality of the financial audit of the firm by the Big 4 audit firm?”), with responses ranging from 1 = very low to 7 = very high. For a translation of the original experimental case from German into English, see Appendix A. We discussed and piloted the case with academic researchers in accounting and auditing, and it was checked for realism with an institutional investor.

### Treatment Variables, Manipulation Checks, and Survey

Participants were randomly assigned to the five experimental cases. First, we manipulated the use of an SSC by the audit firm. In the control condition, we explicitly specify that the Big 4 audit firm did not implement an SSC and that all audit procedures were handled by the local office of the Big 4 audit firm, without allocating audit tasks to an SSC. Beyond this control condition, we used four cases that explicitly state that the Big 4 audit firm used an SSC to handle the audit, with two different SSC specifications. One manipulation variable was the proximity of the SSC, which was either located in the same city as the Big 4 audit firm’s office (nearshoring setting: “[the audit task]...was outsourced to a shared service center located in the same city as the Big 4 audit firm office in Austria”) or in a foreign country (farshoring setting: “[the audit task]...was outsourced to a shared service center located in India”). Because proximity is a concept that includes geographical, cultural, temporal, and educational differences, we chose a farshore location with characteristics that differentiate it from the nearshore SSC location. The second manipulation variable addressed the complexity of the tasks outsourced to the SSC. To avoid changing task complexity, which can lead to a change in expectations regarding the auditor’s level of diligence (Wright and Wu 2018), we did not change the overall audit

procedures required for the audit, which implies that the complexity of the audit is identical across experimental settings. In the low-complexity tasks only setting, only standard audit procedures were outsourced to the SSC (low-complexity setting: “auditing activities that do not entail auditor discretion, such as obtaining bank confirmations and balance confirmations [SSC setting]”). Because our goal is to maximize realism, we combined low and additional high-complexity tasks into one manipulation for the high-complexity setting. This is because we expect that, when audit teams assign high-complexity tasks to an SSC, they will assign low-complexity tasks too. The high-complexity setting therefore described the outsourcing of standard audit procedures (low complex) and of complex procedures (high-complexity setting: “auditing activities that do not entail auditor discretion, such as obtaining bank confirmations and balance confirmations, as well as auditing activities that require significant auditing discretion, such as assessing the recoverability of trade receivables, and receivables from banks [SSC setting]”).<sup>6</sup>

To ensure the validity of the experimental design, we include manipulation checks that confirm that participants understood the information provided. The first question asks whether the audit firm used an SSC for the audit. If the answer was “yes,” we asked two follow-up questions. First, participants were asked to indicate whether the SSC was located in the same city as the Big 4 audit firm office (i.e., in Austria) or in India. Second, regarding task complexity of the outsourced audit procedures, we asked participants whether the complexity of the tasks that had been outsourced to the SSC was high or low. They indicated their response on a seven-point Likert scale.

To provide additional insights into the results, in a postexperimental questionnaire, participants who had been provided with the SSC cases were asked to self-assess their trust in the auditing profession, trust in the use of SSCs for conducting audits, and their attitudes toward nearshore and farshore settings. Participants were asked “How high is your general trust in auditing services?” with responses ranging from 1 = very low to 7 = very high, “In general, how much trust do you have in the quality of the work of SSCs in the area of annual audits?” with responses ranging from 1 = very low to 7 = very high, “What is your attitude toward onshore SSCs (at a domestic location) in the context of annual audits onshore?” with responses ranging from 1 = very negative to 7 = very positive, and “What is your attitude toward offshore SSCs (at a foreign location) in the context of annual audits?” with responses ranging from 1 = very negative to 7 = very positive. Finally, we asked all participants for demographic data, including gender, age, professional field of activity, duration of employment in the field, and level of knowledge.

## Participants

For our study participants, we chose financial analysts from Austria with either a CVA or CFA degree or with relevant experience in this area. We selected this group of participants because they should have a high level of knowledge about financial statements and an understanding of the financial statement preparation and auditing processes. We collected participants in a two-fold manner using a snowball sampling approach. We used this approach because financial analysts are difficult to reach and are generally reluctant to engage in research, sometimes due to time constraints (Durocher and Georgiou 2022). First, we phoned financial analysts working at various financial institutions and provided a link to those willing to participate in the online experiment. Second, we asked these analysts to forward the link to other financial analysts in their professional environment. To start the online experiment, participants clicked on the link and were then assigned to one of the five experimental cases by a random generator software. This process resulted in 205 participants who took part in our experiment in 2017 and 2018.

The success of our two-fold approach can be seen in the demographic variables in Table 1. We have a very well informed group with an average of almost 11 years of work experience in the fields of financial valuation, trading, analysis, or advisory services, although the level of experience varies considerably (range = 0.25–40). The average participant is approximately 39 years old, but age also varies considerably (range = 22–66), and the group contains 33 percent female participants. Their self-assessed expertise in auditing, accounting, and trading securities is high (*COMP\_ACC* mean = 4.55; *COMP\_AUDIT* mean = 3.94; *WORK\_SEC\_EXP* mean = 4.17), and they place a high level of trust in auditors and have had positive experiences with them, on average (*TRUST\_AUDIT* mean = 4.86; *EXP\_W\_AUDIT* mean = 4.76). Interestingly, their confidence in SSCs is high, but they have more favorable attitudes toward nearshore SSCs than farshore SSCs (*TRUST\_SSC* mean = 3.7; *ATTIT\_NS* mean = 4.48; *ATTIT\_FS* mean = 2.89). The demographics indicate that we have appropriate subjects given our research objective (Libby, Bloomfield, and Nelson 2002) and that our data are comparable with those from other behavioral studies examining financial experts (e.g., Brown-Liburd and Zamora 2015; Cohen, Holder-Webb, and Zamora 2015).

<sup>6</sup> We acknowledge that our test confounds the amount and complexity of audit tasks to reflect audit firms’ standard SSC usage. We acknowledge that audit firms can also implement SSC focused only on high-complexity tasks, e.g. data analytics, but this alternative is outside the scope of our paper.



**TABLE 1**  
**Profile of 205 Participants**

Variable	n	Mean	Std. Dev.	Minimum	Maximum	Median
AGE	201	38.65	10.625	22.00	66.00	37.00
WORK_EXP	194	10.97	8.651	0.25	40.00	9.50
GENDER	205	0.33	0.472	0.00	1.00	0.00
COMP_ACC	199	4.55	1.543	1.00	7.00	5.00
COMP_AUDIT	201	3.94	1.613	1.00	7.00	4.00
WORK_SEC_EXP	202	4.17	2.342	1.00	7.00	5.00
TRUST_AUDIT	200	4.86	1.250	1.00	7.00	5.00
EXP_W_AUDIT	200	4.76	1.317	1.00	7.00	5.00
TRUST_SSC	205	3.70	1.326	1.00	7.00	4.00
ATTIT_NS	205	4.48	1.454	1.00	7.00	3.00
ATTIT_FS	205	2.89	1.408	1.00	7.00	5.00

## Variable Definitions:

AGE = the age of the participants;

WORK\_EXP = the years of professional work experience;

GENDER = the gender of the participant (0 = male, 1 = female);

COMP\_ACC = the self-assessed competence in accounting, on a seven-point Likert scale;

COMP\_AUDIT = the self-assessed competence in auditing, on a seven-point Likert scale;

WORK\_SEC\_EXP = the self-assessed work experience with securities, on a seven-point Likert scale;

TRUST\_AUDIT = the self-assessed trust in auditing, on a seven-point Likert scale;

EXP\_W\_AUDIT = the self-assessed experience with auditors, on a seven-point Likert scale;

TRUST\_SSC = the self-assessed trust in the use of SSC by auditors, on a seven-point Likert scale;

ATTIT\_NS = the self-assessed attitude to the use of nearshore SSC by auditors, on a seven-point Likert scale; and

ATTIT\_FS = the self-assessed attitude to the use of farshore SSC by auditors, on a seven-point Likert scale.

A large majority of the participants correctly understood the presence of an outsourced SSC, the location of the nearshore/farshore SSC, and the task complexity. Nevertheless, 21.95 percent of subjects failed the manipulation checks: 15.12 percent failed the task-complexity manipulation check, 6.83 percent failed the outsourcing manipulation check (i.e., they rated the (only low complex) additional high-complexity tasks with a value (higher) smaller than 4), and 10.24 percent failed the nearshore/farshore manipulation check. However, these failure rates are below those typical of electronically administered experiments (Oppenheimer, Meyvis, and Davidenko 2009) and are within the range of other similar experiments.<sup>7</sup> See Table 2 for a detailed examination.

**TABLE 2**  
**Outcome of Manipulation Checks**

Experimental Condition	No. of Participants	After Elimination: SSC Recognition	After Elimination: SSC Location	After Elimination: Task Complexity
NS LC	61	55 (90%)	53 (87%)	50 (82%)
NS HC	34	31 (91%)	28 (82%)	23 (68%)
FS HC	40	40 (100%)	39 (98%)	29 (73%)
FS LC	38	36 (95%)	35 (92%)	29 (76%)
Control Group	32	29 (91%)	—	—
Total	205	191 (93%)	184 (90%)	160 (78%)

NS = nearshore SSC; FS = farshore SSC; LC = low-complexity tasks only; HC = additional high-complexity tasks.

<sup>7</sup> Moreover, experimental studies regarding SSCs often report similar failure rates (e.g., Lyubimov et al. (2013): 32.5 percent (2 × 2 design); Daugherty et al. (2014): 20 percent (2 × 2 design); Arel (2012): 12 percent (3 × 2 design).

## IV. RESULTS

Table 3 presents descriptive results (Panel A) regarding perceived audit quality and the t-statistic results (Panel B). The highest mean value of perceived audit quality appears in the control condition (mean = 5.28), and the highest mean value in the experimental setting appears in the low-complexity farshoring setting (mean = 4.79). Although this might be surprising, our findings demonstrate that the treatment with low/high complexity in the nearshore setting has similar values (mean = 4.35 (high) versus 4.51 (low)) and so too does the treatment with nearshore/farshore in the only low-complexity setting. In both cases, the mean values are not significantly different ( $p = 0.328$  (low complexity in nearshore/farshore setting);  $p = 0.606$  (nearshore in low-/high-complexity setting)). We observe the lowest perceived audit quality in the high-complexity farshore setting (mean = 3.55), which is significantly different from the mean value in the nearshore and high-complexity setting ( $p = 0.030$ ) and the farshore low-complexity setting ( $p = 0.001$ ). To test our hypotheses, we use analysis of variance (ANOVA). See Table 3, Panels C and D, for the ANOVA results and Figure 2 for corresponding graphs.

To examine whether SSC use impacts perceptions of audit quality, and thus to test the first hypothesis, we perform a t-statistic (not tabulated) for perceived audit quality by comparing the control condition (with no SSC) with a pooled sample of all other experimental settings. We find highly significant differences (t-statistic = 3.424;  $p = 0.001$ ) between the control condition and all other experimental settings, with the control condition scoring higher on perceived audit quality (mean = 5.28 versus mean = 4.32). This indicates that a nonoutsourced setting results in higher perceived audit quality by financial experts. Using ANOVA (Table 3, Panel D), we further show that the introduction of outsourcing

**TABLE 3**  
Descriptive Statistics, t-statistics Comparison and ANOVA of Perceived Audit Quality

## Panel A: Descriptive Statistics

<i>Outsourcing Distance</i>		<i>Task Complexity</i>		<i>Control Condition</i>	<i>Overall</i>
		<i>High Complex (HC)</i>	<i>Low Complex (LC)</i>		
Nearshore (NS)	n	34	61		95
	Mean (Median)	4.35 (5)	4.51 (5)		4.45 (5)
	Std. Dev.	1.555	1.312		1.397
Farshore (FS)	n	40	38		78
	Mean (Median)	3.55 (4)	4.79 (5)		4.15 (4)
	Std. Dev.	1.552	1.492		1.636
Control condition	n			32	32
	Mean (Median)			5.28 (5.5)	5.28 (5.5)
	Std. Dev.			1.143	1.143
Overall	n	74	99	32	205
	Mean (Median)	3.92 (4)	4.62 (5)	5.28 (5.5)	4.47 (5)
	Std. Dev.	1.594	1.383	1.143	1.500

## Panel B: t-statistics Comparisons

<i>Outsourcing Distance</i>		<i>Task Complexity</i>		<i>Comparison</i>	
		<i>High Complex (HC)</i>	<i>Low Complex (LC)</i>	<i>t-statistic</i>	<i>p-value</i>
Nearshore (NS)	n	34	61		
	Mean	4.35	4.51	-0.517	0.606
	Std. Dev.	1.555	1.312		
Farshore (FS)	n	40	38		
	Mean	3.55	4.79	-3.593	0.001***
	Std. Dev.	1.552	1.492		
Comparison	t-statistic	2.216	0.984		
	p-value	0.030**	0.328		

(continued on next page)

TABLE 3 (continued)

**Panel C: ANOVA, Analysis of Quality Based on Complexity and Location**

ANOVA	Type III Sum of Squares	df	F	p-value (Two-Tailed)
<i>Task Complexity</i>	20.029	1	9.423	0.002***
<i>Outsourcing Distance</i>	2.802	1	1.318	0.253
<i>Task Complexity * Outsourcing Distance</i>	12.104	1	5.694	0.018**
Error		169		

**Panel D: ANOVA, Analysis of Quality Based on Outsourcing**

ANOVA	Type III Sum of Squares	df	F	p-value (Two-Tailed)
Outsourcing	25.061	1	11.722	0.001***
Error		203		

**Panel E: Post Hoc Test for Complexity and Location**

<i>Post Hoc Tests (Tukey Honestly Significant Difference Test)</i>	p-value (Two-Tailed)
NS LC versus NS HC	0.960
FS LC versus FS HC	0.001***
FS LC versus NS LC	0.787
FS LC versus NS HC	0.584
FS HC versus NS HC	0.089
FS HC versus NS LC	0.008***

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

NS = nearshore SSC; FS = farshore SSC; LC = low-complexity tasks only; HC = additional high-complexity tasks.

Variable Definitions:

*Task Complexity* = low-complexity tasks only versus additional high-complexity tasks; and

*Outsourcing Distance* = nearshore versus farshore SSC.

has a significant ( $F = 11,722$ ,  $p = 0.001$ ) and negative effect on perceived audit quality. Therefore, we find support for H1.<sup>8</sup>

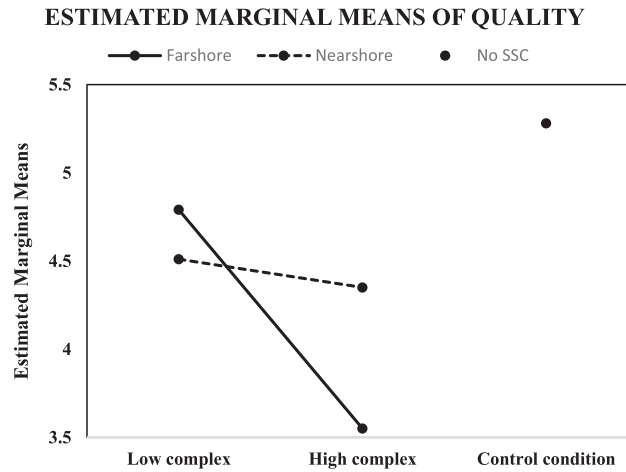
Turning to H2 and H3, the results indicate that the additional delegation of complex tasks causes significant differences in perceived audit quality. This is also shown in Figure 2. Although this result was expected, our findings show that the outsourcing location has no significant impact on the perceived level of audit quality. Because we obtain almost the same mean values for perceived audit quality for low-complexity tasks at a nearshore and farshore SSC (mean = 4.51 nearshore versus mean = 4.79 farshore) and the ANOVA shows insignificant differences for perceived audit quality ( $F = 1.318$ ,  $p = 0.253$ ), we fail to reject the null H2. The ANOVA assessment of audit quality ( $F = 9.423$ ,  $p = 0.002$ ) is negatively and significantly affected by task complexity. In summary, the ANOVA results indicate a significant main effect regarding the treatment variable *Task Complexity*, but this does not allow us to confirm H3, because there is a significant interaction effect. A reasonable interpretation of the main effect requires considering the interaction effect, as presented in H4.

Regarding the interplay between outsourcing location and task complexity, the results show a significant interaction effect on the assessment of audit quality ( $F = 5.694$ ,  $p = 0.018$ ). This means that there is a significantly negative effect when both factors are present, revealing that auditors with an SSC, depending on their location and task complexity, have lower perceived audit quality. There is a negative effect on the perceived audit quality for a farshore SSC with additional high-complexity tasks. Figure 2 shows crossing mean value lines, illustrating the interaction effect.

Additionally, as we observe a low significance level ( $p = 0.089$ ) in the *post hoc* test in Table 3, Panel E between farshore (FS) high-complexity tasks (HC) versus nearshore (NS) HC, and to test our theoretical expectation, we conduct a contrast analysis with custom weights (Buckless and Ravenscroft 1990) for NS low-complexity tasks (LC), NS HC, FS LC, and FS HC:  $[-1, -1, -1, +3]$ . This is also consistent with our prediction that the difference in perceived audit quality when additional high-complexity tasks are outsourced is greater when the tasks are outsourced to a farshore SSC than to a nearshore SSC. Therefore, we expect NS HC to be associated with significantly lower perceived audit quality than

<sup>8</sup> To assess the robustness of our t-statistics, we perform Mann-Whitney U tests and find similar results.

**FIGURE 2**  
ANOVA of Task Complexity (Low-Complexity Tasks Only versus Additional High-Complexity Tasks) and the Outsourcing Distance (Farshore and Nearshore) of SSC



the other conditions, and the contrast is significant ( $t = 3.776$ ;  $p = 0.001$ ). Further *post hoc* tests are presented in the supplemental analyses. The results provide support for H4.

In summary, three hypotheses are supported. First, outsourcing has a negative impact on perceived audit quality; second, additional high-complexity tasks reduce perceived audit quality; and third, the negative impact of farshoring on perceived audit quality is greater when task complexity is high. Overall, the assignment of an SSC has a negative influence on audit quality as perceived by financial experts. They prefer audits that are not outsourced, and if they are outsourced, they prefer only simple tasks to be assigned to the SSC.

Because we fail to reject the null hypothesis H2 (farshoring does not reduce perceived audit quality), we do not find support for proximity theory alone, but we see a related effect in the interaction with task complexity. Thus, our findings suggest that both source credibility theory and task complexity theory may play significant roles in shaping perceptions of audit quality for SSCs' audit activities.

### Supplemental Analyses

To ensure that our results are not biased by characteristics of the participants that vary systematically between cells, despite random selection, we conduct an analysis of covariance (ANCOVA) for the dependent variable. First, we calculate the correlations between perceived audit quality and the participants' demographic information. The full correlation results are presented in Table 4. We then add significantly correlated variables as covariates. The results of the ANCOVA appear in Table 5.

Perceived audit quality correlates significantly with eight demographic variables: *AGE* (coefficient =  $-0.222$ ,  $p = 0.002$ ), *WORK\_EXP* (coefficient =  $-0.192$ ,  $p = 0.007$ ), *GENDER* (coefficient =  $0.202$ ,  $p = 0.004$ ), *TRUST\_AUDIT* (coefficient =  $0.298$ ,  $p = 0.001$ ), *EXP\_W\_AUDIT* (coefficient =  $0.187$ ,  $p = 0.008$ ), *TRUST\_SSC* (coefficient =  $0.499$ ,  $p = 0.001$ ), *ATTIT\_NS* (coefficient =  $0.361$ ,  $p = 0.001$ ), and *ATTIT\_FS* (coefficient =  $0.436$ ,  $p = 0.001$ ). Adding all significantly correlated demographic data as covariates supports the ANOVA results.<sup>9</sup> In addition, three covariates are significant (Table 5): trust in the auditing profession (*TRUST\_AUDIT*,  $F = 4.499$ ;  $p = 0.036$ ), trust in the work of SSCs in the auditing context (*TRUST\_SSC*,  $F = 5.254$ ;  $p = 0.023$ ), and attitudes toward SSCs in farshore locations (*ATTIT\_FS*,  $F = 11.342$ ;  $p = 0.001$ ). Employing a regression analysis (not tabulated) with the previously examined significant demographic variables and the treatments as independent variables, and with perceived audit quality as the dependent variable, shows that trust in the auditing profession (*TRUST\_AUDIT*,  $\beta = 0.243$ ,  $p = 0.001$ ), trust in the work of SSCs in the auditing context (*TRUST\_SSC*,  $\beta = 0.347$ ,  $p = 0.001$ ), and attitudes toward SSCs in farshore locations

<sup>9</sup> The variance inflation factor scores of the correlated demographic variables are all below 2.550, suggesting no multicollinearity problem.

**TABLE 4**  
Correlation Matrix

	AGE	WORK_EXP	GENDER	COMP_ACC	COMP_AUDIT	TRUST_AUDIT	WORK_SEC_EXP	EXP_W_AUDIT	TRUST_SSC	ATTIT_NS	ATTIT_FS
Perceived audit quality	-0.222*** (p = 0.002)	-0.192*** (p = 0.007)	-0.202*** (p = 0.004)	0.076 (p = 0.283)	0.080 (p = 0.258)	-0.085 (p = 0.226)	-0.298*** (p = 0.001)	0.187*** (p = 0.008)	0.499*** (p = 0.001)	0.361*** (p = 0.001)	0.436*** (p = 0.001)
AGE	1.000	0.733***	-0.228***	0.014	0.023	-0.092	0.176**	-0.047	-0.172**	0.180**	-0.120*
WORK_EXP	1.000	1.000	-0.203***	-0.002	0.025	-0.053	-0.280***	-0.069	-0.130*	-0.114	-0.035
GENDER	1.000	1.000	1.000	0.093	0.101	0.116	-0.136*	0.038	0.094	0.034	0.080
COMP_ACC	1.000	1.000	1.000	1.000	0.761***	0.271***	0.147**	0.361***	-0.018	-0.013	0.024
COMP_AUDIT	1.000	1.000	1.000	1.000	1.000	0.178**	-0.086	0.344***	-0.123*	-0.051	-0.048
TRUST_AUDIT	1.000	1.000	1.000	1.000	1.000	1.000	-0.093	0.668***	0.111	0.135*	0.164**
WORK_SEC_EXP	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-0.122*	0.187***	0.093	0.046
EXP_W_AUDIT	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-0.038	0.021	0.089
TRUST_SSC	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.309***	0.632***
ATTIT_NS	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.583***
ATTIT_FS	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Variable Definitions:

AGE = the age of the participants;  
 WORK\_EXP = the years of professional work experience;  
 GENDER = the gender of the participant (0 = male, 1 = female);  
 WORK\_SEC\_EXP = the self-assessed work experience with securities, on a seven-point Likert scale;  
 TRUST\_AUDIT = the self-assessed trust in auditing, on a seven-point Likert scale;  
 EXP\_W\_AUDIT = the self-assessed experience with auditors, on a seven-point Likert scale;  
 TRUST\_SSC = the self-assessed trust in the use of SSC by auditors, on a seven-point Likert scale;  
 ATTIT\_NS = the self-assessed attitude to the use of nearshore SSC by auditors, on a seven-point Likert scale; and  
 ATTIT\_FS = the self-assessed attitude to the use of farshore SSC by auditors, on a seven-point Likert scale.

**TABLE 5**  
**ANCOVA Results for Perceived Audit Quality**

Intercept	Type III Sum of Squares	df	F-value	p-value (Two-Tailed)
<i>Task Complexity</i>	14.182	1	10.115	0.002***
<i>Outsourcing Distance</i>	1.585	1	1.131	0.289
<i>Task Complexity * Outsourcing Distance</i>	6.700	1	4.779	0.030**
<i>AGE</i>	0.269	1	0.192	0.662
<i>WORK_EXP</i>	2.417	1	1.742	0.191
<i>GENDER</i>	3.115	1	2.222	0.138
<i>TRUST_AUDIT</i>	6.308	1	4.499	0.036**
<i>EXP_W_AUDIT</i>	0.144	1	0.102	0.749
<i>TRUST_SSC</i>	7.367	1	5.254	0.023**
<i>ATTIT_NS</i>	0.771	1	0.550	0.459
<i>ATTIT_FS</i>	15.901	1	11.342	0.001***
Residuals	204.379	148		
n	160			

\*, \*\*, \*\*\* Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Variable Definitions:

*AGE* = the age of the participants;

*WORK\_EXP* = the years of professional work experience;

*GENDER* = the gender of the participant (0 = male, 1 = female);

*WORK\_SEC\_EXP* = the self-assessed work experience with securities, on a seven-point Likert scale;

*TRUST\_AUDIT* = the self-assessed trust in auditing, on a seven-point Likert scale;

*EXP\_W\_AUDIT* = the self-assessed experience with auditors, on a seven-point Likert scale;

*TRUST\_SSC* = the self-assessed trust in the use of SSC by auditors, on a seven-point Likert scale;

*ATTIT\_NS* = the self-assessed attitude to the use of nearshore SSC by auditors, on a seven-point Likert scale; and

*ATTIT\_FS* = the self-assessed attitude to the use of farshore SSC by auditors, on a seven-point Likert scale.

(*ATTIT\_FS*,  $\beta = 0.304$ ,  $p = 0.001$ ) significantly increase perceived audit quality in experimental settings that explicitly state that the Big 4 audit firm used a SSC for audit tasks. Overall, our results show that trust in the work of SSCs in the auditing context, the attitude toward farshore SSCs, and general trust in the auditing profession all significantly impact perceived audit quality.

The *post hoc* test results are consistent with our expectations.<sup>10</sup> We perform a supplementary ANOVA test, following the approach of Chambers et al. (2020), using our data on trust in the work of SSCs in the auditing context as moderating variables. This allows us to assess whether there are interactions between *TRUST\_SSC*, *ATTIT\_NS*, and *ATTIT\_FS* and our treatments. Again, we find that task complexity ( $F = 9.555$ ;  $p = 0.002$ , untabulated) and trust in the work of SSCs in the auditing context ( $F = 9.957$ ;  $p = 0.001$ , untabulated) have a significant impact on perceptions of audit quality. Furthermore, we find a weak but significant interaction effect between trust in the work of SSCs in the auditing context and task complexity ( $F = 2.162$ ;  $p = 0.050$ , untabulated). The rest of the interaction terms are insignificant. Therefore, we find that the interaction between trust in the work of SSCs and task complexity serves as a significant moderator influencing perceived audit quality.

Because we include all participants' answers in the analysis without the exclusion of manipulation check failures, we recalculate all ANOVAs based on a reduced dataset that excludes data where subjects failed the manipulation checks. Our results have a similar pattern to those using the complete sample, so we conclude that our findings are robust to any alternative procedure for excluding manipulation-check failures.<sup>11</sup>

<sup>10</sup> We find a significant difference in the means between the low-complexity farshore setting and the high-complexity farshore setting ( $p = 0.001$ ). Likewise, a farshore setting significantly lowers perceived audit quality when additional high-complexity audit tasks are performed by the SSC, compared with a nearshore SSC performing only low-complexity tasks ( $p = 0.008$ ). Conversely, when only low-complexity tasks are performed by SSCs, the mean difference between nearshore and farshore SSCs is insignificant ( $p = 0.787$ ), although the mean difference between low and high task complexity is not significant in a nearshore SSC setting ( $p = 0.960$ ).

<sup>11</sup> When we exclude all subjects who failed at least one manipulation check, we still find a significant impact of the task complexity on perceived audit quality ( $F = 9.836$ ,  $p = 0.002$ ) and a significant interaction effect between task complexity and the location of the SSC ( $F = 4.686$ ,  $p = 0.032$ ). The impact of the SSC's location on perceived audit quality is insignificant ( $F = 0.567$ ,  $p = 0.453$ ). All other variables are clearly not significant.

In our high-complexity setting, low- and high-complexity tasks are assigned to an SSC, which means that we manipulate both complexity and workload. Consequently, we cannot exclude the possibility that workload is driving our results. Therefore, we perform an additional experiment with 157 nonprofessional investors using a combined (low-complexity tasks with additional high-complexity tasks) and a noncombined (only high-complexity tasks) setting. Our results indicate that the mixed tasks setting is not significantly different from the only high-complexity tasks setting, suggesting that complexity and not workload drives our result.

## V. DISCUSSION AND CONCLUSION

Audits are only useful if adequate audit quality is provided. However, it is not sufficient that auditors factually provide adequate audit quality, because users must also perceive high quality (DeAngelo 1981). Moreover, audit markets are characterized by downward fee pressure (Ettredge, Fuerherm, and Li 2014). The SSC is a relatively new phenomenon and a way to potentially increase the efficiency and effectiveness of audits (Downey 2018; Arnold 2018). Thus, our study investigates the effect of the use of SSCs on perceived audit quality.

Based on an experiment with financial analysts, we find evidence of a negative impact of SSCs on perceived audit quality, regardless of the SSC's specific design. Furthermore, we show that the assignment of additional high-complexity tasks to an SSC has a significantly negative impact on perceived audit quality. In addition, we reveal that the location of an SSC can lower perceived audit quality when additional highly complex tasks are outsourced. However, our results suggest that physical proximity alone does not have a significant impact. Based on our hypotheses, we argue that source credibility theory and task complexity theory are relevant to perceived audit quality when using an SSC. Finally, we find that trust in the work of SSCs in the auditing context influences the relation between task complexity and perceived audit quality related to the use of SSCs. Thus, trust-building tools could moderate the negative impact on perceived audit quality.

Evidence regarding reservations about SSC use by nonfinancial experts is limited, and prior research focuses primarily on the perceptions of jurors (e.g., Chambers et al. 2020; Daugherty et al. 2014; Lyubimov et al. 2013), who are unlikely to have prior knowledge of outsourcing audit procedures. We find support for previous nonsignificant findings of Didia et al. (2018) and Didia et al. (2022) on financial experts and for the findings of Daugherty et al. (2014) on audit judgment in the context of farshoring, but we add new findings related to reservations about the use of SSC in general by financial experts. We also extend existing knowledge on farshoring, showing that financial analysts care about farshoring when it is combined with additional high-complexity tasks. Our results, which are based on analyst perceptions, are consistent with empirical findings regarding the negative impact of outsourcing on factual audit quality (Dee, Lulseged, and Zhang 2015; Jia and Li 2016). Furthermore, results on the mediating effect of task complexity in audit research are scarce (Alqudah et al. 2019; Mohd-Sanusi and Mohd-Iskandar 2007), but we expand the literature with our results on task complexity in the context of SSC use.

Our study makes valuable contributions to the academic debate and audit practice. First, by focusing on financial analysts, an important stakeholder group, we provide insights into their perceptions of audit quality in the context of SSCs. This extends our understanding of how this key group differs from other stakeholders, like jurors and judges, who are examined in previous literature. Second, our research design disentangles the usage of SSC in general and the location of the SSC, emphasizing that financial analysts care about SSC usage, but not about SSC location. Third, our research demonstrates that the nature and extent of work performed by SSCs, specifically task complexity and the interaction between task complexity and outsourcing location, significantly affect perceived audit quality. This highlights that financial analysts care about these aspects when evaluating audit quality, which contributes to the literature. Fourth, our findings indicate that trust in the work of SSCs influences the relation between task complexity and perceived audit quality. Lastly, we contribute to debate on a phenomenon in auditing practice that cannot be investigated archivally due to information being nonpublic regarding the application of SSCs.

Our results also have practical implications for audit firms, audit committees, oversight boards, and regulators. In light of our findings on financial analysts' concerns, we suggest implementing the mandatory disclosure of SSC use in the auditor's report to facilitate more precise perceptions of audit quality. Additionally, our findings suggest a need for stricter regulation of the outsourcing of highly complex tasks, particularly when they are farshored, to strengthen perceived audit quality.<sup>12</sup> Finally, we demonstrate that an SSC can operate in both a farshore and a nearshore environment without directly impacting on perceived audit quality if task complexity is low.

This work, like other studies, has its limitations. The results are, strictly speaking, limited to this experimental case and the financial experts' views at the time the survey was conducted. It is possible that the results would differ in a

<sup>12</sup> After the global financial crisis, the EU Commission proposed mandatory disclosure of the applied audit methodology in the auditor's report. Likewise, the PCAOB suggested mandatory disclosure of the work performed by SSCs. However, these requirements are not included in the final EU and PCAOB regulations.

different experimental setting, at a different time, or with a different target group. For example, in our high-complexity setting, the SSC is assigned both low- and high-complexity tasks. Therefore, the revealed significant impact of complexity could also be caused by the workload assigned to the SSC. Moreover, in our nearshore setting, the SSC is located in the same city as the Big 4 audit firm office, but it could also be located within the EU for a nearshore setting. In addition, our results may not generalize to countries outside the EU because, although our participants held a CVA and/or CFA certificate or comparable experience, they were recruited in Austria. In Germanic countries (i.e., Austria, Germany, The Netherlands, and Switzerland), there are cultural commonalities and a similarly high level of uncertainty aversion, so similar attitudes and perceptions regarding audit quality likely exist. In terms of general characteristics, Austria's institutional environment is reasonably similar to that of other continental European countries (Aschauer and Quick 2018). Therefore, although our findings are subject to a specific environmental framework, it is somewhat similar to other EU countries. Finally, we assume that financial analysts are familiar with SSCs, so we did not include a definition or description in our experimental materials. However, we cannot exclude the possibility that some subjects misunderstood this construct. Because the observations per cell yield small numbers when the manipulation checks are eliminated, the likelihood of significant results are lower, but highly significant results can arise due to flexibility-ambiguity problems (Simmons, Nelson, and Simonsohn 2011). To address this limitation, we follow the guidelines of Simmons et al. (2011) and perform parallel analysis with nonexcluded and excluded participants. We apply ANOVA and ANCOVA and show that the results are robust with and without covariates.

Our results suggest several avenues for future research. First, because our experimental design focused on the delegation of standard audit procedures, future research could investigate the influence of different audit task settings on perceived audit quality. This would be informative because the use of SSCs is evolving (e.g., some SSCs are only delegated highly complex tasks because they only specialize in certain areas, such as data analytics). Future research could also disentangle the effect of task complexity and workload. This would be helpful because audit firms face cost minimization pressures and must decide whether to allocate more work, including more complex work, to SSCs. Second, future research that experimentally examines the transparency of outsourced audits (e.g., in the audit report) as a type of trust-building activity (Hood and Heald 2006) could enable the identification of mediating circumstances and provide disclosure recommendations for practice. Third, experimental research could investigate proximity from a different angle, using different proximity attributes like culture, language, work design, communication, affiliation, social identity, or a different SSC location in order to determine whether proximity theory holds. Fourth, research could be conducted with a less informed group, such as nonprofessional investors. Fifth, because our results suggest that proximity alone may not play a significant role in perceptions of audit quality, research could explore via interviews why financial analysts and other knowledgeable parties do not react to the proximity setting as theory predicts. Finally, if data on the voluntary disclosure of outsourced audits become available, archival research on factual audit quality could follow.

## REFERENCES

- Alqudah, H. M., N. A. Amran, and H. Hassan. 2019. Factors affecting the internal auditors' effectiveness in the Jordanian public sector: The moderating effect of task complexity. *EuroMed Journal of Business* 14 (3): 251–273. <https://doi.org/10.1108/EMJB-03-2019-0049>
- Arel, B. 2012. The influence of judges' attitudes on liability assessments related to failed audits exhibiting significant audit team over-time or significant use of off-shore auditors. *Advances in Accounting* 28 (2): 201–208. <https://doi.org/10.1016/j.adiac.2012.06.001>
- Arnold, V. 2018. The changing technological environment and the future of behavioural research in accounting. *Accounting & Finance* 58 (2): 315–339. <https://doi.org/10.1111/acfi.12218>
- Aron, R., E. K. Clemons, and S. Reddi. 2005. Just right outsourcing: Understanding and managing risk. *Journal of Management Information Systems* 22 (2): 37–55. <https://doi.org/10.1080/07421222.2005.11045852>
- Asare, S. K., and L. S. McDaniel. 1996. The effects of familiarity with the preparer and task complexity on the effectiveness of the audit review process. *The Accounting Review* 71 (2): 139–159.
- Aschauer, E., and R. Quick. 2018. Mandatory audit firm rotation and prohibition of audit firm-provided tax services: Evidence from investment consultants' perceptions. *International Journal of Auditing* 22 (2): 131–149. <https://doi.org/10.1111/ijau.12109>
- Aschauer, E., and R. Quick. 2024. Implementing shared service centres in Big 4 audit firms: An exploratory study guided by institutional theory. *Accounting, Auditing & Accountability Journal* 37 (9): 1–28. <https://doi.org/10.1108/AAAJ-07-2021-5376>
- Averhals, L., T. Van Caneghem, and M. Willekens. 2020. Mandatory audit fee disclosure and price competition in the private client segment of the Belgian audit market. *Journal of International Accounting, Auditing and Taxation* 40: 100337. <https://doi.org/10.1016/j.intaccudtax.2020.100337>
- Bergeron, B. 2003. *Essentials of Knowledge Management*. Hoboken, NJ: John Wiley and Sons.



- Birnbaum, M. H., and S. E. Stegner. 1979. Source credibility in social judgment: Bias, expertise, and the judge's point of view. *Journal of Personality and Social Psychology* 37 (1): 48–74. <https://doi.org/10.1037/0022-3514.37.1.48>
- Blackman, A. B., M. Freedman, and J. Levy. 2004. Outsourcing by CPAs: Are we a business of a profession? *The CPA Journal* 74 (5): 6–8. <http://archives.cpajournal.com/2004/504/perspectives/nv1.htm>
- Bonner, S. E. 1994. A model of the effects of audit task complexity. *Accounting, Organizations and Society* 19 (3): 213–234. [https://doi.org/10.1016/0361-3682\(94\)90033-7](https://doi.org/10.1016/0361-3682(94)90033-7)
- Brown-Liburd, H., and V. L. Zamora. 2015. The role of corporate social responsibility (CSR) assurance in investors' judgments when managerial pay is explicitly tied to CSR performance. *Auditing: A Journal of Practice & Theory* 34 (1): 75–96. <https://doi.org/10.2308/ajpt-50813>
- Buckless, F. A., and S. P. Ravenscroft. 1990. Contrast coding: A refinement of ANOVA in behavioral analysis. *The Accounting Review* 65 (4): 933–945.
- Canning, M., B. O'Dwyer, and R. Boomsma. 2022. Managing the offshoring of audit work: Spanning the boundaries between onshore and offshore auditors. *Auditing: A Journal of Practice & Theory* 41 (2): 57–91. <https://doi.org/10.2308/AJPT-18-055>
- Capaldo, A., and A. M. Petruzzelli. 2014. Partner geographic and organizational proximity and the innovative performance of knowledge-creating alliances. *European Management Review* 11 (1): 63–84. <https://doi.org/10.1111/emre.12024>
- Chambers, V. A., P. M. J. Reckers, and A. Reinstein. 2020. Drivers of juror's malpractice assessments in auditor litigation involving offshoring and overtime: Generation and a management mindset. *Advances in Accounting* 50: 100488. <https://doi.org/10.1016/j.adiac.2020.100488>
- Chinn, C. A., and R. W. Rinehart. 2016. Commentary: Advances in research on sourcing—Source credibility and reliable processes for producing knowledge claims. *Reading and Writing* 29 (8): 1701–1717. <https://doi.org/10.1007/s11145-016-9675-3>
- Cohen, J. R., L. Holder-Webb, and V. L. Zamora. 2015. Nonfinancial information preferences of professional investors. *Behavioral Research in Accounting* 27 (2): 127–153. <https://doi.org/10.2308/bria-51185>
- Daugherty, B., and D. Dickins. 2009. Offshoring the independent audit function. *The CPA Journal* 79 (1): 60–65. <https://www.proquest.com/docview/212242225?fromopenview=true&pq-origsite=gscholar&sourcetype=Scholarly%20Journals>
- Daugherty, B., D. Dickins, and M. G. Fennema. 2014. The effects of offshoring audit tasks on jurors' evaluations of damage awards against auditors. *Advances in Accounting Behavioral Research* 16: 55–84. [https://doi.org/10.1108/s1475-1488\(2013\)0000016008](https://doi.org/10.1108/s1475-1488(2013)0000016008)
- Daugherty, B. E., D. Dickins, and M. G. Fennema. 2012. Offshoring tax and audit procedures: Implications for U.S.-based employee education. *Issues in Accounting Education* 27 (3): 733–742. <https://doi.org/10.2308/iace-50141>
- DeAngelo, L. E. 1981. Auditor size and audit quality. *Journal of Accounting and Economics* 3 (3): 183–199. [https://doi.org/10.1016/0165-4101\(81\)90002-1](https://doi.org/10.1016/0165-4101(81)90002-1)
- Dee, C. C., A. Lulseged, and T. Zhang. 2015. Who did the audit? Audit quality and disclosures of other audit participants in PCAOB filings. *The Accounting Review* 90 (5): 1939–1967. <https://doi.org/10.2308/accr-50968>
- DeZoort, F. T., R. W. Houston, and D. R. Hermanson. 2003. Audit committee member support for proposed audit adjustments: A source credibility perspective. *Auditing: A Journal of Practice & Theory* 22 (2): 189–205. <https://doi.org/10.2308/aud.2003.22.2.189>
- Dickins, D., and B. Daugherty. 2012. Should those charged with corporate governance care about auditor offshoring? *International Journal of Disclosure and Governance* 9 (1): 52–61. <https://doi.org/10.1057/jdg.2011.11>
- Didia, L., A. L. Mayse, and K. H. Ofori-Mensah. 2022. Location of audit task impact on audit risk and quality: Insight from bank loan officers. *Journal of Applied Business and Economics* 24 (2) <https://doi.org/10.33423/jabe.v24i2.5148>
- Didia, L. N., A. L. Mayse, and E. C. Randle. 2018. The effects of outsourcing and offshoring of independent audit procedures on bank loan officers' perceptions of financial statement reliability and loan decisions. *Journal of Accounting and Finance* 18 (3) <https://doi.org/10.33423/jaf.v18i3.416>
- Downey, D. H. 2018. An exploration of offshoring in audit practice and the potential consequences of associated work “redesign” on auditor performance. *Auditing: A Journal of Practice & Theory* 37 (2): 197–223. <https://doi.org/10.2308/ajpt-51771>
- Downey, D. H., and J. C. Bedard. 2019. Coordination and communication challenges in global group audits. *Auditing: A Journal of Practice & Theory* 38 (1): 123–147. <https://doi.org/10.2308/ajpt-52016>
- Downey, D. H., and K. D. Westermann. 2021. Challenging global group audits: The perspective of US group audit leads. *Contemporary Accounting Research* 38 (2): 1395–1433. <https://doi.org/10.1111/1911-3846.12648>
- Durocher, S., and O. Georgiou. 2022. Framing accounting for goodwill: Intractable controversies between users and standard setters. *Critical Perspectives on Accounting* 89: 102357. <https://doi.org/10.1016/j.cpa.2021.102357>
- Ettredge, M., E. E. Fuerherm, and C. Li. 2014. Fee pressure and audit quality. *Accounting, Organizations and Society* 39 (4): 247–263. <https://doi.org/10.1016/j.aos.2014.04.002>
- Fried, Y., A. S. Levi, and G. Laurence. 2008. Motivation and job design in the new world of work. In *The Oxford Handbook of Personnel Psychology*, edited by S. Cartwright and C. L. Cooper. Oxford, U.K.: Oxford Academic.
- Hanes, D. R. 2013. Geographically distributed audit work: Theoretical considerations and future directions. *Journal of Accounting Literature* 32 (1): 1–29. <https://doi.org/10.1016/j.acclit.2013.09.001>

- Hinds, P. J., and S. Kiesler. 2002. *Distributed Work*. Cambridge, MA: MIT Press. <https://doi.org/10.7551/mitpress/2464.001.0001>
- Hood, C., and D. Heald, eds. 2006. *Transparency: The Key to Better Governance?* Oxford, U.K.: Oxford University Press.
- Hopkins, P. E. 1996. The effect of financial statement classification of hybrid financial instruments on financial analysts' stock price judgments. *Journal of Accounting Research* 34: 33–50. <https://doi.org/10.2307/2491424>
- Jia, N., and D. Li. 2016. An analysis of US accounting firms' cross-country audit quality of China concepts stocks. *China Journal of Accounting Studies* 4 (2): 183–204. <https://doi.org/10.1080/21697213.2016.1196058>
- Kahneman, D. 1973. *Attention and Effort*. Englewood Cliffs, NJ: Prentice-Hall Inc.
- Libby, R., and M. G. Lipe. 1992. Incentives, effort, and the cognitive processes involved in accounting-related judgments. *Journal of Accounting Research* 30 (2): 249–273. <https://doi.org/10.2307/2491126>
- Libby, R., R. Bloomfield, and M. W. Nelson. 2002. Experimental research in financial accounting. *Accounting, Organizations and Society* 27 (8): 775–810. [https://doi.org/10.1016/S0361-3682\(01\)00011-3](https://doi.org/10.1016/S0361-3682(01)00011-3)
- Liu, P., and Z. Li. 2012. Task complexity: A review and conceptualization framework. *International Journal of Industrial Ergonomics* 42 (6): 553–568. <https://doi.org/10.1016/j.ergon.2012.09.001>
- Lyubimov, A., V. Arnold, and S. G. Sutton. 2013. An examination of the legal liability associated with outsourcing and offshoring audit procedures. *Auditing: A Journal of Practice & Theory* 32 (2): 97–118. <https://doi.org/10.2308/ajpt-50354>
- McGinnies, E., and C. D. Ward. 1980. Better liked than right: Trustworthiness and expertise as factors in credibility. *Personality and Social Psychology Bulletin* 6 (3): 467–472. <https://doi.org/10.1177/014616728063023>
- Mintz, S. 2004. The ethical dilemmas of outsourcing. *The CPA Journal* 74 (3): 6–10. <http://archives.cpajournal.com/2004/304/perspectives/nv1.htm>
- Mohd-Sanusi, Z., and T. Mohd-Iskandar. 2007. Audit judgment performance: Assessing the effect of performance incentives, effort and task complexity. *Managerial Auditing Journal* 22 (1): 34–52. <https://doi.org/10.1108/02686900710715639>
- Oppenheimer, D. M., T. Meyvis, and N. Davidenko. 2009. Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology* 45 (4): 867–872. <https://doi.org/10.1016/j.jesp.2009.03.009>
- Pan, Y., N. Shroff, and P. Zhang. 2023. The dark side of audit market competition. *Journal of Accounting and Economics* 75 (1): 101520. <https://doi.org/10.1016/j.jacceco.2022.101520>
- Plumlee, M. A. 2003. The effect of information complexity on analysts' use of that information. *The Accounting Review* 78 (1): 275–296. <https://doi.org/10.2308/accr.2003.78.1.275>
- Pornpitakpan, C. 2004. The persuasiveness of source credibility: A critical review of five decades' evidence. *Journal of Applied Social Psychology* 34 (2): 243–281. <https://doi.org/10.1111/j.1559-1816.2004.tb02547.x>
- Public Company Accounting Oversight Board (PCAOB). 2015. Improving the Transparency of Audits: Rules to Require Disclosure of Certain Audit Participants on a New PCAOB Form and Related Amendments to Auditing Standards (PCAOB Release No. 2015-008). Washington, DC: PCAOB. <https://pcaobus.org/Rulemaking/Docket029/Release-2015-008.pdf>
- Schulz, V., and W. Brenner. 2010. Characteristics of shared service centers. *Transforming Government: People, Process and Policy* 4 (3): 210–219. <https://doi.org/10.1108/17506161011065190>
- Shamis, G. S., M. C. Green, S. M. Sorensen, and D. L. Kyle. 2005. Outsourcing, offshoring, nearshoring: What to do? *Journal of Accountancy* 199 (6): 57–61. <https://www.journalofaccountancy.com/issues/2005/jun/outsourcingoffshoringnearshoringwhat-to-do.html>
- Simmons, J. P., L. D. Nelson, and U. Simonsohn. 2011. False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science* 22 (11): 1359–1366. <https://doi.org/10.1177/0956797611417632>
- Simon, H. A. 1973. The structure of ill structured problems. *Artificial Intelligence* 4 (3–4): 181–201. [https://doi.org/10.1016/0004-3702\(73\)90011-8](https://doi.org/10.1016/0004-3702(73)90011-8)
- Sunderland, D., and G. M. Trompeter. 2017. Multinational group audits: Problems faced in practice and opportunities for research. *Auditing: A Journal of Practice & Theory* 36 (3): 159–183. <https://doi.org/10.2308/ajpt-51667>
- Tan, H.-T., T. B.-P. Ng, and B. W.-Y. Mak. 2002. The effects of task complexity on auditors' performance: The impact of accountability and knowledge. *Auditing: A Journal of Practice & Theory* 21 (2): 81–95. <https://doi.org/10.2308/aud.2002.21.2.81>
- Trotman, K. T. 1998. Audit judgment research—Issues addressed, research methods and future directions. *Accounting & Finance* 38 (2): 115–156. <https://doi.org/10.1111/1467-629X.00007>
- Weisner, M. M. 2015. Using construal level theory to motivate accounting research: A literature review. *Behavioral Research in Accounting* 27 (1): 137–180. <https://doi.org/10.2308/bria-51063>
- Weisner, M. M., and S. G. Sutton. 2015. When the world isn't always flat: The impact of psychological distance on auditors' reliance on specialists. *International Journal of Accounting Information Systems* 16: 23–41. <https://doi.org/10.1016/j.accinf.2014.11.001>
- Wilson, J., C. B. Crisp, and M. Mortensen. 2013. Extending construal-level theory to distributed groups: Understanding the effects of virtuality. *Organization Science* 24 (2): 629–644. <https://doi.org/10.1287/orsc.1120.0750>
- Wright, A. M., and Y.-J. Wu. 2018. The impact of auditor task difficulty and audit quality indicators on jurors' assessments of audit quality. *Behavioral Research in Accounting* 30 (2): 109–125. <https://doi.org/10.2308/bria-52081>

---

**APPENDIX A****Experimental Case**

The following case concerns “Alpha Automobilproduzent AG,” headquartered in Austria. Alpha is a large publicly listed company that manufactures and sells automotive parts to car manufacturers and wholesalers. Below are Alpha AG’s key financial figures for the 2016 financial year:

Sales revenue	€ 1,300 million
Balance sheet total	€ 1,100 million
Inventories	€ 375 million
Net income	€ 110 million
Earnings per share	€ 1.10 per share

Alpha AG has been audited by the “Big 4 Audit” firm for five years with the same audit partner. The last annual financial statements of Alpha AG for 2016 were also audited by Big 4 Audit and received an unqualified audit opinion stating that the annual financial statements of Alpha for 2016 comply with the legal requirements and give a true and fair view of the net assets, financial position, and results of operations in accordance with these requirements. Big 4 Audit does not provide any additional advisory services. Alpha AG has an audit committee that oversees the annual audit and selects the annual auditor.

As part of the audit of Alpha by Big 4 Audit, audit activities that do not entail auditor discretion, such as obtaining bank confirmations and balance confirmations, were outsourced to a shared service center located in the same city as the Big 4 Audit firm office in Austria (*in India*).

(As part of the Big 4 Audit’s audit of Alpha, audit activities that do not entail auditor discretion, such as obtaining bank confirmations and balance confirmations, as well as auditing activities that require significant auditing discretion, such as assessing the recoverability of trade receivables and receivables from banks, were outsourced to a shared service center located in the same city as the Big 4 Audit firm office in Austria (*in India*).

---