

## RESEARCH ARTICLE

# Antecedents of public-sector auditors' economic error communication: Evidence from Germany

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## Abstract

Traditionally, public-sector auditors are concerned with auditing the legality and regularity of government activities (compliance audits). However, such auditors are increasingly expected to conduct “performance audits” and communicate economic errors due to inefficiency, ineffectiveness, and poor economic decisions to the auditee. This type of role change is often accompanied by role stress. This study explores whether role stress—role conflict and role ambiguity—among local public-sector auditors and their perception of their new business partner role are precursors of their communication of detected economic errors to their auditees. Therefore, survey data from German local public sector auditors (i.e., municipalities and counties) are gathered and analyzed. Our results show that compare to those in other organizations, auditors who work in more formalized public-sector audit organizations are less likely to experience role ambiguity and role conflict and to communicate auditees' economic errors more actively. Furthermore, we find that auditors who do not experience role ambiguity find it easier to see themselves as a business partner of the auditee and show more active economic error

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communication. The present study informs the literature on performance auditing by transferring the business partner concept to the context of public-sector auditing and applying a role theory perspective to reveal drivers of economic error communication.

#### KEYWORDS

business partner, error management, performance audits, public-sector auditing, role theory

## 1 | INTRODUCTION

In most modern states, compliance audits, where public-sector auditors control the legality and regularity of government activities, are conducted. Depending on national regulations, this work comprises, among other tasks, the auditing of financial statements and budgets of public entities or public tenders (Goalsarran, 2007). Due to new challenges for public administrations, such as citizens' increased expectations, financial scarcity, and the need to invest in digitalization and sustainability (e.g., Richter, 2014), public-sector auditors' tasks and roles are changing (Sher-Hadar, 2020). Public-sector auditors are increasingly expected to support the cost efficiency of public entities on both local and central governmental levels (Hood et al., 1998). In this development, public-sector auditors in many Western countries have become an important part of the local governmental governance system, as they provide feedback regarding effectiveness, efficiency, and target achievement to council members. Thus, their tasks have been expanded to include not only *compliance audits* but also *performance audits*<sup>1</sup> (Johnsen et al., 2001; Monfardini & Maravic, 2012). The latter should ensure that the audited entity does not waste taxpayers' money due to inefficiency, ineffectiveness, or poor economic decisions (economic errors; Evans & Patton, 1987; Summa, 2002; Wehrich, 2018).

An example from one German city highlights, on the one hand, the importance of public-sector auditors' communication of economic errors and, on the other hand, the decision-making scope of public-sector auditors about communicating or not communicating such errors. Following a compliance audit, the auditors revealed that the accounts and cash holdings of a newly acquired machine that automatized the payment and borrowing process in the city library deviated. This was clearly an accounting error. The error was caused by a software problem that could be simply solved by the manufacturer. Simultaneously, the auditors discovered that the initial investment in the machine was very high, but the usefulness of the machine was very low, as it could only be used during the opening hours of the library when staff were present. This was a problem (error) from an economic point of view, which is more latent than an obvious mismatch between accounts and cash holdings. To start a discussion in the city about how the problem could be addressed by, for example, using the staff's free capacity to improve visitors' satisfaction, public-sector auditors must communicate and explain the problem to the auditee first. However, as the example demonstrates, economic errors are much more latent than accounting errors, which gives public-sector auditors more discretion in communicating these types of errors. Therefore, the question that arises from this anecdote is as follows: What drives public-sector auditors' economic error communication?

One important factor that can be found in the literature is the role perception of public sector auditors. In Germany, for example, expectations from the new public management (NPM) movement influenced the role of local public-sector auditors. In the 1990s, many German governments decided that local public administrations were obliged to change their accounting system from a cameralistic (cash-oriented) approach to accrual accounting (Nitzl et al., 2020; Pina et al., 2009). The implementation of accrual accounting is considered a driver of a higher managerial orientation of public managers in local administrations (Ridder et al., 2006). This trend also influenced the role of

local public-sector auditors. As Zahradik (2018) observed concerning local public-sector auditors, “[t]oday, more than ever, it is expected that not only the correctness of budget management and cash and accounting is checked but also the expediency and efficiency of the administration” (p. 1, translated from German by the authors). Richter (2014) observed similar changes concerning the expected role of local public-sector auditors. He argues that the traditional role of local public-sector auditors was characterized by an ex-post audit of facts and an examination of individual transactions with a focus on household affairs. The dominant assessment standards were regularity and lawfulness. This functional understanding has been increasingly questioned because, on the one hand, it does not reflect the profound changes that the local authorities see themselves exposed to, and on the other hand, the (significant) potential of municipal auditing is not being sufficiently exploited (Richter, 2014). Richter (2014) also mentioned that the replacement of cameralistic bookkeeping by accrual accounting supported a reorientation of public-sector auditors. The new role model of public-sector auditing is now to offer managerial support: Auditors should actively focus on creating added value in public administration, for example, by considering not only financial aspects of the public institution but also looking at future benefits.

The new expectations of auditors are formulated in the role model guidelines for accountants, which were issued by the *Institut der Rechnungsprüfer e.V.* (IDR). The IDR is an association acting in the interest of its members from all German public-sector audit organizations and their employees in Germany. In the group’s mission statement, the German public-sector auditors state that they see themselves as “independent partners of the administration and the elected bodies, independent from directives, but in the interest of the citizen.” They also write, “Our audits create value by helping to optimize processes and identify opportunities and risks. We support the committees and the administration in their decision-making” (IDR, n.d.-a).<sup>2</sup> Accordingly, German public-sector auditors should perform the role of a business partner for the client in the audit process.

Business partners are expected to be active advisors of management and to support and foster managerial decision making (Goretzki & Messner, 2019; Goretzki et al., 2013; Granlund & Lukka, 1998; Hartmann & Maas, 2011; Järvenpää, 2007; Tillema et al., 2022).<sup>3</sup> This may contrast with the traditional role of public-sector auditors associated with compliance audits, where auditors are expected to make sure that government activities are in line with relevant laws and regulations. Such different expectations of auditors’ roles in the public sector (Lonsdale et al., 2002) may influence auditors’ strategies and an audit unit’s organizational design and may also cause challenges regarding auditors’ identities and practices in performance audits (Jeppesen et al., 2017; Johnsen, 2019).

A theoretical explanation for such challenges in performance audits is provided by role theory, according to which different role expectations can lead to role stress—comprising role conflicts and role ambiguity—which negatively influences role-taking and job performance (Katz & Kahn, 1978; Rizzo et al., 1970). Previous studies show that perceived role stress negatively influences the job performance of auditors, which was the case for external auditors in public accounting firms in Australia (Chong & Monroe, 2015), the United States (Jones et al., 2010; Viator, 2001), and New Zealand (Fisher, 2001) and for internal auditors in the United States (Larson, 2004). Smith and Emerson (2017) also demonstrate negative effects on audit quality in a private-sector context when auditors experience role stress—including resilience, role conflict, role ambiguity, and role overload. Smith et al. (2017) find similar negative effects of role conflict and role ambiguity on public accountants’ job behavior.

However, thus far, little is known about how role stress, resulting from different role expectations, influences public-sector auditors’ perceived business partner role and their job behavior, especially with regard to how they communicate economic errors to their auditees. Accordingly, in the present study, we investigate role stress and public-sector auditors’ perceived business partner role as precursors of economic error communication. We also analyze the influence of formalization in public auditing organizations on role stress, as the German public sector is highly influenced by rules and legal procedures (Nitzl et al., 2020).

For our research, we use survey data from German public-sector auditors in local governments (i.e., municipalities and counties). This context has been traditionally influenced by a legalistic-bureaucratic administrative culture but has been challenged by changing stakeholder expectations and changes in the role the public auditors themselves want to play (i.e., business partners).

The results of our study provide evidence that public-sector auditors in German local governments who see themselves more as business partners to the audited public institution are more active in communicating with the auditee about its economic errors. In active economic error communication, public-sector auditors regularly inform their auditees about underlying audit goals, seek conversations with the auditee about detected economic errors, and are willing to talk about economic errors with the person who is accountable for it and try to explain to him or her the scale of the error; overall, this process contributes to economic error management (Gronewold & Donle, 2011). Furthermore, we find that, for a public-sector audit context, a formalized audit organization leads to less role stress for auditors—in particular, less role conflict and less role ambiguity. Furthermore, our study reveals that reduced role conflict leads to more open and active communication by the public-sector auditor regarding auditees' economic errors. We further show a complementary partial mediating effect of the “business partner role” between “role ambiguity” and public-sector auditors' “economic error communication.” These findings indicate that public-sector auditors who are less likely to experience role ambiguity see themselves more as business partners of the auditee and thus communicate economic errors more actively.

The present study contributes to the literature on performance auditing (Johnsen, 2019; Johnsen et al., 2001; Monfardini & Maravic, 2012; Sher-Hadar, 2020) by explicitly transferring the concept of business partnering, which has thus far been discussed mainly in management accounting research, to the context of public-sector performance auditing. The study also provides empirical insights into what drives public-sector auditors' willingness to report and communicate the results of performance audits to the auditee. Therefore, our study adds a new conceptual perspective on the changing role of public-sector auditors in performance auditing and demonstrates role-related antecedents of their job behavior (i.e., error communication). Our study also informs the performance auditing literature from a (new) theoretical perspective, as we use role theory for our arguments (Kahn et al., 1964; Katz & Kahn, 1978), which allows us to study organizational factors (e.g., size, structure; Bamber et al., 1989; Fazli Aghghaleh et al., 2014) and individual experience (i.e., role stress) as antecedents of public-sector auditors' job behavior. Previous studies in this context have been informed mainly by institutional theory (e.g., Johnsen et al., 2001; Sher-Hadar, 2020), which focuses on the interactions between normative societal structures and social behaviors (Nitzl et al., 2020); this theoretical perspective has also dominated research on business partnering in the management accounting literature (e.g., Burns & Balvinsdottir, 2005; Goretzki et al., 2013; Granlund & Lukka, 1998).

The remainder of this article proceeds as follows: In Section 2, the research model is developed from the conceptual background of public-sector auditors' roles and role theory. Section 3 describes the research method and data collection process. The results of the study are presented in Section 4. Section 5 concludes the study and discusses implications, limitations, and outlooks for future research.

## 2 | BACKGROUND AND HYPOTHESIS DEVELOPMENT

### 2.1 | Public-sector auditing in German local governments

To allow the comparability of our findings, we start by referring to the organizational and legal specifics of public-sector auditing in German local governments (“*kommunale Rechnungsprüfung*”). We also explain the role expectations that are placed on public-sector auditors.

*Local government codes* (“*Gemeindeordnungen*”) are the legal foundation for public-sector auditing in German local governments. Proving a general conclusion about public-sector auditing is difficult, as there are 16 different local government codes, one in each of the federal states of Germany. However, there is a relatively high uniformity in the principles among the codes (Monfardini & Maravic, 2012). In general, the local government codes demand that public-sector audit bodies control the legality and regularity (compliance audit) as well as the expediency and profitability (performance audit) of local activities. Although performance auditing is not mandatorily declared in all local government codes, it is always at least defined as a “can-do” task (Fiebig & Zeis, 2018, pp. 60–63; Glöckner & Mühlkamp,

2009). However, in their mission statement (IDR, n.d.-a), the interest group of German public-sector auditors states the following: “Audits of efficiency, effectiveness and usefulness have priority to audits of regularity.”<sup>4</sup> Therefore, public-sector auditors in local government themselves want and are expected to act as internal consultants through the communication of economic errors during the audit process. Accordingly, public-sector auditors’ expertise is expected to contribute significantly to the modernization of public administration (Richter, 2018).

Audit activities are usually conducted by local audit offices (“*Rechnungsprüfungsämter*”) in Germany. Local audit offices are an important part of the local governmental governance system, as they control administration activities and report to council members (Monfardini & Maravic, 2012). However, public-sector auditors are legally obliged to maintain an independent relationship with their auditees (Fiebig & Zeis, 2018, pp. 30–31). Thus, public-sector audit offices in Germany work as both internal management support and external supervisors. They are part of local governments and act as classic auditors as well as consultants and advisors—similar to internal auditors (Richter, 2018, pp. 46–47). From this perspective, performance auditing in local governments in Germany—similar to other countries—has become more client-oriented than before and adds value by informing the public less as watchdogs and more as business partners of municipal management (Monfardini & Maravic, 2012). This development is also described for other countries, for example, for New Zealand by Jacobs (1998), for Australia by Guthrie and Parker (1999), for the United Kingdom by Bowerman (1994), and for Finland and Norway by Johnsen et al. (2001).

## 2.2 | Public-sector auditors’ business partner role and economic error communication

The intention of this study is to provide a better understanding of public-sector auditors’ perception of how their business partner role influences their communication of economic errors to their clients. Role theory provides a theoretical framework to understand how self-perception of a role and role behavior is formed. According to role theory (Kahn et al., 1964; Katz & Kahn, 1978), every person in an organization is connected to a number of other members of the organizational context because of the functional requirements of the organizational system. The organizational roles (focal roles) are determined by the expectations of other members of the organizational context (the role senders). However, individuals (focal persons) receive signals emitted by role senders and develop their own perception of the role they are required to perform; they agree or disagree with the expectations of their role. This process forms role behavior (Roussy, 2013). Public-sector auditors in local governments operate in complex organizational settings involving various role senders, such as legislation, scholars, interest groups, and society at large, who all expect public-sector auditors (focal persons) to perform certain roles.

In the context of performance auditing, public-sector auditors are expected to supervise the cost efficiency of public entities and support administration in maintaining the quality and quantity of services while reducing costs for taxpayers (Andon et al., 2015; Ellwood & Garcia-Lacalle, 2012; Funnell, 2015; Morin, 2001; Skærbæk, 2009). Performance auditing refers to the profitability and efficiency of public institutions and should contribute to a more efficient and effective deployment of public expenditures, while traditional compliance auditing aims to examine the extent to which a local government complies with the legal framework and fulfills its tasks in a proper and timely manner, considering the given material and formal regulations and principles (Goolsarran, 2007; Johnsen et al., 2001). In the sense of role theory (Kahn et al., 1964; Katz & Kahn, 1978), proponents of performance auditing send new role expectations to public-sector auditors. As stated before, these expectations demand that public-sector auditors act as consultants for municipal management (i.e., business partners). The business partner role requires auditors to communicate economic errors due to economically incorrect calculations, incorrect decisions, or misjudgments to avoid the loss of time, tax money, or reputation and to avoid other financial crises in the future (Free et al., 2013; Richter, 2018).

Economic errors can have wide-ranging consequences for the financial performance of a public institution and thus require a high level of effort and knowledge to be detected and resolved (Frese, 1991; Reason, 2000). According to Gronewold and Donle (2011), auditors assist with error management when they actively communicate about detected errors. Active error communication comprises auditors regularly informing their auditees about (additional) steps to

take when finding errors, discussing the errors with the auditee and trying to explain the scale of errors. Researchers have underlined the usefulness of public-sector auditors' active communication about economic errors with the auditee, as this contributes to learning from errors and performance improvement in public-sector organizations (e.g., Johnsen et al., 2004; Reichborn-Kjennerud, 2013). This process fosters the need for intensive communication and, thus, a close relationship with the auditee. In this study, public-sector auditors' economic error communication is specified as job performance.

Accordingly, we predict that public-sector auditors who assume a business partner role are more likely to demonstrate active economic error communication. The following hypothesis is proposed:

**H1:** The more public-sector auditors act as business partners, the more active their economic error communication is.

### 2.3 | Role stress and public-sector auditors' business partner role

Role theory states that the processes of role-taking and/or role change in an organizational context can be accompanied by symptoms of role stress. More precisely, under specific circumstances, role ambiguity and role conflicts can appear and lead to problems in role-taking and/or role change (Hall, 1972; Katz & Kahn, 1978).

*Role ambiguity* may arise if there is a lack of clarity about one's role taking within the organization, which means a lack of information and clarity about responsibilities, job goals, time management, explanations, and expectations (Kahn et al., 1964; Rizzo et al., 1970). A person who is not aware of his or her authority and who has no clarity about his or her role expectations experiences role ambiguity (Rizzo et al., 1970; Viator, 2001). Then, according to Kahn et al. (1964), the experience of role ambiguity results in worse decision making. Similarly, Chenhall and Brownell (1988) argue that role ambiguity negatively influences job satisfaction and job performance. For public auditors, according to Senatra (1980), several organizational circumstances can be potential sources of role ambiguity. We know that in many German public administrations, a traditional bureaucratic culture still exists. Still following a bureaucratic-legalistic logic, the focus of administrative behavior and decision making is derived from the "*Rechtsstaatsprinzip*" and not from efficiency issues (Gisch et al., 2021; Meyer & Hammerschmid, 2006; Rosengart et al., 2019). As a consequence, public auditors have traditionally focused on accounting and/or compliance errors. In contrast, public auditors today are expected to see themselves as business partners and to focus on economic errors (Richter, 2014). If a public auditor takes both effects seriously, role ambiguity may occur. Through the existence of role ambiguity, public auditors suffer from a lack of clarity about their audit duties. As a result, it might be more difficult for public auditors to see themselves clearly as business partners.

*Role conflicts* occur if an individual is expected to simultaneously perform two or more roles that are inconsistent or incompatible (Katz & Kahn, 1978). According to role theory, role conflicts arise when an individual is trapped in a situation that makes it impossible to correctly fulfill the requirements of the role and to meet the expectations of the role set (Jackson & Schuler, 1985). Rizzo et al. (1970) state that when an individual experiences role conflict, he or she shows a decrease in coping behavior and satisfaction and performs less well than expected. In the public sector, role conflicts arise due to a low structured and formalized work environment, a high level of uncertainty, and a mismatch regarding role expectations (Morgan, 1980). As stated before, public-sector auditors in local governments in Germany perform both compliance and performance audits. Thus, this peculiarity of public-sector audits adds to the potential for role conflict. For example, the need for independence of local public-sector auditors may cause conflicts for the auditor when he or she has to perform consulting as part of a performance audit. If a public auditing organization is not able to clearly define the corresponding interplay of "financial statement" auditing and "value for money" auditing, a role conflict will probably occur. Thus, it is assumed that a public-sector auditor who experiences such role conflict has problems seeing him or herself in a clear business partner role.

The following hypotheses are proposed:

**H2a:** The more public-sector auditors experience role ambiguity, the less they act as business partners to the auditee.

**H2b:** The more public-sector auditors experience role conflict, the less they act as business partners to the auditee.

## 2.4 | Role stress and economic error communication

According to Kahn et al. (1964), role ambiguity results in worse role behavior. Chenhall and Brownell (1988) argue that role ambiguity influences job satisfaction and job performance. In this study, job performance is specified as the quality of a public-sector auditor's economic error communication. Positive error communication means actively communicating about erroneous situations (Sitkin, 1997; B. Zhao & Olivera, 2006). Through the existence of role ambiguity, public-sector auditors in local governments may suffer from a lack of clarity about their audit duties. As a result, they feel less confident and find it difficult to decide how to deal with economic errors, in turn failing to actively communicate economic errors. Thus, it is assumed that the experience of role ambiguity negatively influences the public-sector auditor's economic error communication.

Rizzo et al. (1970) state that when an individual experiences role conflict, he or she shows a decrease in coping behavior and satisfaction and performs less well than expected. Hall (1972) finds that role conflict negatively influences job performance. Based on role theory, Marginson and Bui (2009) reveal, by using a sample of private-sector midlevel managers, that role conflict has a negative impact on managers' job behavior and job performance. In a similar vein, Fisher (2001) finds that (external) auditors who experience role conflict are less likely to perform as expected. It is assumed that public-sector auditors who experience role conflict struggle to enact role expectations, meaning, in this case, that they fail to engage in open and active economic error communication.

The following hypotheses are proposed:

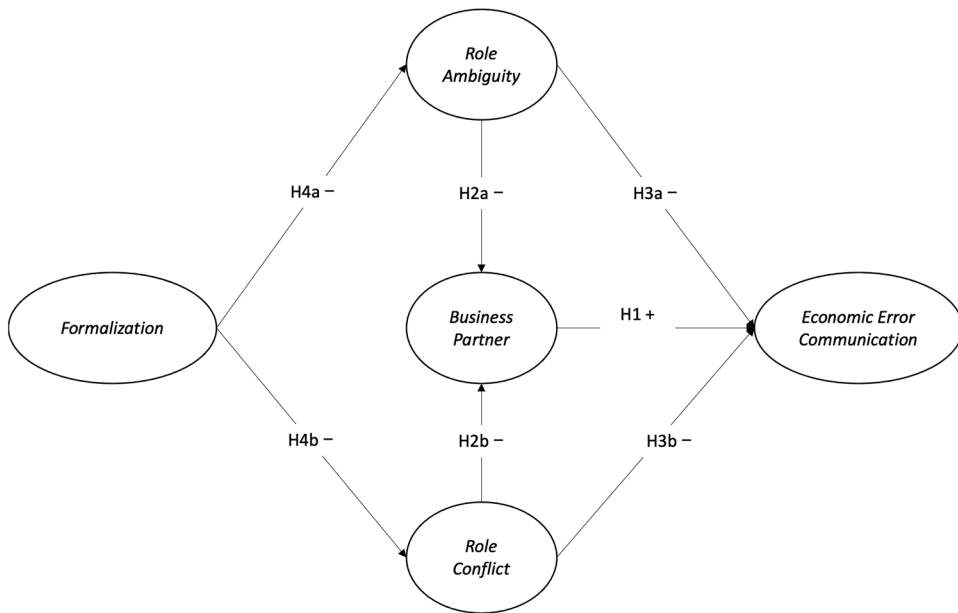
**H3a:** The more public-sector auditors experience role ambiguity, the less active their economic error communication is.

**H3b:** The more public-sector auditors experience role conflict, the less active their economic error communication is.

## 2.5 | Formalization and role stress

According to Senatra (1980), several organizational circumstances, for example, insufficient information about rules and procedures (i.e., poor formalization), are potential sources of role stress. Previous studies have observed the relationship among the formalization of an organization, role conflict, and role ambiguity based on role theory (e.g., Bamber et al., 1989; Fazli Aghghaleh et al., 2014; Jackson & Schuler, 1985; Podsakoff & Organ, 1986; Rizzo et al., 1970; Rogers & Molnar, 1976). Formalization is defined as the extent to which an organization expressly formulates and defines its practices, job descriptions, workflow standards, and policies (Podsakoff & Organ, 1986). Role theory, in accordance with classical organization theory, addresses formalization as an important variable for reducing ambiguities and conflicts. The specific definition of tasks and responsibilities of a specific position in an organization provides guidance and direction as well as accountability (Rizzo et al., 1970; Weber, 1978). In the public sector, formalization is characterized by clear, written, and structured rules about responsibilities, workflows, and expectations (Parker & Bradley, 2000; Ruffner & Sevilla, 2006; Taskin & Edwards, 2007).

According to Jackson and Schuler (1985) and Shenkar and Zeira (1992), formalization helps minimize role ambiguity, as it increases clarity, information, and knowledge about responsibilities, duties, authorities, tasks, and expectations. Rizzo et al. (1970) find that formalization reduces role ambiguity. Podsakoff and Organ (1986) examine this effect in the pharmacy, health, and public administration sectors and find that for these industries, formalization reduces role ambiguity. Fazli Aghghaleh et al. (2014) investigate the influence of organizational formalization on the experience of role ambiguity among internal auditors in the private sector. The authors' results show that a



**FIGURE 1** Model of role set in the public sector and its influence on economic error communication.

high degree of formalization reduces role ambiguity. Bamber et al. (1989) investigate the influence of formalization on role ambiguity by using a sample of senior auditors working in nonformalized public accounting firms and show that this low level of formalization leads to role ambiguity. Additionally, Bamber et al. (1989) and others (e.g., Jackson & Schuler, 1985; Rizzo et al., 1970; Rogers & Molnar, 1976) find that more formalization reduces not only role ambiguity but also role conflict. The reason for this effect is that formalization can add clarity about role expectations and thus reduce role conflict. Rogers and Molnar (1976) state that the organizational formalization of employee behavior among those in top-level positions helps clarify role expectations and reduce role conflict. Jackson and Schuler (1985) explain this effect by arguing that formalization is important for defining one's role and behavior.

Hence, we assume that public-sector auditors who work in a legalistic-bureaucratic environment (Meyer & Hamerschmid, 2006) and who are confronted with structured information about their duties, responsibilities, and performance expectations due to high organizational formalization have more clarity about their role expectations and are less likely to experience role ambiguity and role conflict. Therefore, the following hypotheses are proposed:

**H4a:** The higher the degree of formalization in the public-sector audit organization, the lower the public-sector auditors' role ambiguity is.

**H4b:** The higher the degree of formalization in the public-sector audit organization, the lower the public-sector auditors' role conflict is.

Figure 1 displays the research model.

### 3 | RESEARCH METHOD AND OPERATIONALIZATION OF CONSTRUCTS

Data were collected for this study using an online survey (Couper et al., 2001) that was sent to local public-sector auditors in Germany who are members of the IDR. This association includes nearly 450 active members in



**TABLE 1** Composition of the sample

Sample characteristics	Age	Years of experience
Mean	51	27.39
Median	53	27.50
Minimum	29	1
Maximum	65	49
<i>Gender</i>	Frequency	Percent
Female	41	33.88%
Male	77	63.64%
No answer	3	2.48%
Total	121	100.00%
<i>Education</i>		
Apprenticeship	1	0.83%
Secondary school	7	5.79%
High school	13	10.74%
University degree	90	74.38%
PhD	1	0.83%
No answer	9	7.44%
Total	121	100.00%
<i>Position</i>		
Leading position	85	70.25%
No leading position	33	27.27%
No answer	3	2.48%
Total	121	100.00%
<i>Audit Office Size</i>	Mean	Sd
Number of employees	13.92	16.653

Note: Number of respondents = 121; response rate = 28.27%.

Germany. Among its members are public-sector auditors from approximately 100 counties and nearly 30 large cities. Approximately 75% of IDR members are public bodies (e.g., local audit offices employing more than one public-sector auditor), and approximately 25% are individual members (IDR, n.d.-b). For the data collection, a link to the questionnaire was then sent to all active members of the IDR with the request that the survey be filled out by only one public-sector auditor within each local audit office.<sup>5</sup> Before we collected the data, we pretested the survey by asking three public-sector auditors, selected by our contact at the IDR, to complete the survey and determine whether the questions were concrete and understandable (Speklé & Widener, 2018). In total, 428 German IDR members received the link to the questionnaire via email, and 161 questionnaires were returned, representing a response rate of 37.62% and corresponding to the average response rate in management accounting surveys (Hiebl & Richter, 2018). A total of 40 questionnaires were removed from the final dataset because they contained answers that were systematically incomplete or because the respondents did not finish the survey. In total, 121 questionnaires remained for the final analysis, corresponding to a representative rate of 28.27% of the underlying population (Couper, 2000) and reflecting a good response rate for a mail survey study in Germany (Harzing, 1997). Table 1 contains information about the characteristics of the sample. The average respondent was 51 years old and had approximately 27 years of work experience in public-sector auditing. The sample was composed of 63.64% males

and 33.88% females; 2.48% did not report their gender. Of the respondents, 75.21% had a university degree, and 70.25% were working in a leading position. The average number of employees working in the polled audit offices was 13.92.

The questionnaire, which can be found in the Appendix, consisted of items that have been validated in previous studies; to measure latent variables, existing and established scales were used. All items in the latent variables were measured on a 7-point Likert scale ranging from (1) "always" or "strongly agree" to (7) "never" or "do not agree at all." The following items were used:

According to Pugh et al. (1968), organizational formalization is the degree to which "responsibilities are dictated by job descriptions," "decision-making processes are defined," "rules are followed," and "internal communication is standardized." In this study, the four items were used to measure the independent variable *Formalization*, following Pugh et al. (1968).

The scale we used for *Role Conflict*, which was based on Rizzo et al. (1970), captures the "dimensions of congruency-incongruency or compatibility-incompatibility in the requirements of the role, where congruency or compatibility is judged relative to a set of standards or conditions" (Rizzo et al., 1970, p. 155). The associated items in our survey are as follows: "I have to do things that should be done differently," "I receive assignments but do not have time to complete them," "I have to buck a rule or policy in order to carry out an assignment," "I receive requests from two or more people that are incompatible," "I do things that are likely to be accepted by one person but not accepted by others," "I receive assignments without adequate resources and materials to execute them," "I work on unnecessary things," and "I work with two or more groups who operate quite differently."

To measure *Role Ambiguity*, we used another scale developed by Rizzo et al. (1970). This study uses this scale to capture the following items: "I feel certain about how much authority I have," "I have clear, planned goals and objectives for my job," "I know that I allocate my time properly," "I know what my responsibilities are," "I know exactly what is expected of me," and "I receive clear explanations of what needs to be done." As the questions are positively worded, they have been reverse-coded for the final analysis.

To measure the variable *Business Partner*, we used items from Maas and Matejka (2009) to measure controllers' decision-making support. According to Hartmann and Maas (2011), who also used this scale to capture the organizational role of business unit controllers, the business partner role arises in "analyzing profitability," "evaluating investment opportunities," "developing strategies," "helping to meet targets," and "reducing costs and increasing earnings." This scale was adapted to the public-sector context, and respondents were asked to indicate the importance of the following tasks in their daily work: "analyzing the profitability of public service delivery for the audited entity," "evaluating investment opportunities for the audited entity," "developing economic strategies for the audited entity," "helping the audited entity meet economic targets," and "helping the audited entity reduce costs and increase earnings."

The dependent variable *Economic Error Communication* was measured based on the scale developed by Gronewold and Donle (2011) originally named "Auditors' Predisposition towards Handling Their Clients' Errors"; it was adapted to the specific error type (economic error) and the public-sector context. The associated items for *Economic Error Communication* were "do not inform auditee about additional procedures due to detected economic errors," "do not communicate detected economic errors to the auditee," "do not communicate detected economic errors to the person who caused them," and "talk to auditee without conveying the scale of the detected economic error." For the evaluation, recoding was conducted because the questions were formulated negatively.

Since all the information from the questionnaires relates to individual answers, common method variance may influence the statistical relationships in the research model. To control the effect of common method bias, *Public Service Motivation (PSM)* was included as a marker variable (Chin, 2010). The marker variable *PSM* had no theoretical relationship to answer the focal research question, and because *PSM* was measured in the same manner as the main constructs in the research model ("common method"), the investigated relationships in the main research model were corrected by the possible influence of common method bias (Chin et al., 2013; Lindell & Whitney, 2001). *PSM* was measured on a scale following Perry and Wise (1990) and Perry (1996): The dimensions of *PSM* are "attraction to policy

making," "commitment to the public interest," "compassion," and "self-sacrifice." Furthermore, variance inflation factors (VIFs) were used to test for the possible influence of common method bias. VIFs simulate each construct as the dependent variable and indicate the amount explained by the remaining constructs. The range of VIF values was between 1.000 and 1.662. Because these values were well below the critical threshold of 3.3, no serious problem with common method bias was present (Kock, 2015).

Furthermore, *Age*, *Gender* (male, female, or diverse), *Audit Office Size* (number of employees) and *Position* (leading or not) were used as control variables to check for their influence on the dependent variable.

To analyze the data, partial least squares structural equation modeling (PLS-SEM) with the software SmartPLS 3.3.2 (Ringle et al., 2020) was used. PLS-SEM is a useful technique for answering research questions by testing theory and analyzing mediating effects (Nitzl et al., 2016). PLS-SEM is a variance-based SEM tool that has been established to model composite latent variables. Thus, this composite-based approach makes PLS-SEM useful for modeling and estimating formative measurements (Sarstedt et al., 2016). In this study, *Economic Error Communication* and *Business Partner* were defined as formative measurements as was the marker variable *PSM*.

Furthermore, PLS-SEM is an adequate tool for working with relatively small sample sizes; nevertheless, the sample size should be reasonably related to the model complexity (Hair et al., 2011). For this research, with eight formative predictors in the most complex latent variable, based on a power analysis, Nitzl (2016) suggests a sample size of 109 participants for detecting medium effects for a statistical power of at least 0.8 at an  $\alpha$ -level of 0.05. Based on this advice, it can be assumed that the sample of 121 was at least sufficient to detect the relevant effect in this research model.

## 4 | RESULTS

In evaluating the construct measurement, we follow a confirmatory composite analysis (Hair et al., 2020), which consists of assessing the reliability and validity of the reflective measurements and the quality of the formative measurements. In addition, the path coefficients of the structural equation model, the explanatory power, and the mediating effects are analyzed (Hair et al., 2017).

In the first step, the construct reliability and validity (Hair et al., 2017) and the discriminant validity are evaluated (Henseler et al., 2015). All critical values are fulfilled. Table 2 summarizes the values for the evaluation of the reflective measurements, indicating that all the composite reliability and average variance extracted (AVE) values are good (Ringle et al., 2014). The items *RoleCon2*, *RoleCon3*, *RoleCon4*, *RoleCon8*, *RoleAm6*, *PSM5*, and *Formalization1* and *Formalization4* are deleted because of low loadings below the critical value of 0.7. The descriptive statistics at the item level are provided in Table 1A in the Appendix.

The heterotrait-monotrait criterion is a more reliable and conservative criterion for testing discriminant validity in PLS-SEM than the Fornell-Larcker criterion (Henseler et al., 2015). As seen in Table 3, the critical value of 0.85 was not exceeded, which means that there is no lack of discriminant validity.

The formative measurement model is assessed in the next step. As shown in Table 4, the VIF values for all items are below the critical threshold of 5, and all weights are highly significant, as a *p*-value below 0.1 indicates a significant direct effect.

As the critical thresholds for the evaluation of the measurement models are fulfilled, the examination of the structural equation model estimation follows (Chin, 2010). Because the effect of *PSM* on *Economic Error Communication* is controlled, it is less likely that the hypothesized relationships are biased by common method variance (Chin et al., 2013; Podsakoff & Organ, 1986). Table 5 presents the results for the model path coefficients.

The effect of *Business Partner* on *Economic Error Communication* (0.282; < 0.001) is positive and significant. Therefore, H1 can be accepted. The effect of *Role Ambiguity* on *Economic Error Communication* (−0.169; 0.098) is negative and significant. Thus, H2a can be accepted. The effect of *Role Ambiguity* on *Business Partner* (−0.434; < 0.001) is negative and significant. Thus, H2b can also be accepted. The effect of *Role Conflict* on *Economic Error*

**TABLE 2** Estimation of the reflective measurement model (full sample,  $n = 121$ )

Items	Loading	Cronbach's alpha	rho_A	Composite reliability	Average variance extracted
Critical values	> 0.7	> 0.6	> 0.7	> 0.6	> 0.5
<i>Role Conflict</i>		0.787	0.812	0.861	0.607
RolCon1	0.779				
RolCon5	0.746				
RolCon6	0.839				
RolCon7	0.750				
<i>Role Ambiguity</i>		0.841	0.844	0.887	0.611
RoleAm1	0.768				
RoleAm2	0.785				
RoleAm3	0.750				
RoleAm4	0.820				
RoleAm5	0.782				
<i>Formalization</i>		0.651	0.760	0.844	0.731
Formalization2	0.780				
Formalization3	0.925				

Note: The numbers in the item labels represent the numbering of the survey questions in the Appendix.

**TABLE 3** Heterotrait–Monotrait (HTMT) ratio (full sample,  $n = 121$ )

HTMT	Formalization	Role Ambiguity	Role Conflict
Formalization			
Role Ambiguity	0.691		
Role Conflict	0.357	0.529	

*Communication* ( $-0.340$ ;  $< 0.001$ ) is negative and significant. Therefore, H3a can be accepted. The effect of *Role Conflict* on *Business Partner* ( $0.039$ ;  $0.701$ ) is not significant. Thus, H3b cannot be confirmed. The effects of *Formalization* on *Role Ambiguity* ( $-0.531$ ;  $< 0.001$ ) and on *Role Conflict* ( $-0.294$ ;  $0.003$ ) are shown in the predicted direction and are both significant. Thus, H4a and H4b can be accepted. Figure 2 summarizes the path coefficients and  $p$ -values.

Focusing on direct effects in complex research models risks overlooking mediating effects (Nitzl et al., 2016). Therefore, a mediation analysis is also conducted in PLS-SEM (Sarstedt et al., 2020). Table 6 contains the bias-corrected confidence intervals for the total effects, the indirect effects, and the direct effects. A path relation is significant at a significance level of 0.1 (two-tailed test) if zero is not included in the confidence interval. To determine the mediating effects, the steps recommended by Nitzl et al. (2016) are followed.

As shown in Table 6, the effect between *Role Ambiguity* and *Economic Error Communication* is significantly mediated by *Business Partner* [ $-0.206$ ;  $-0.060$ ]. To determine the type of mediation between *Role Ambiguity* and *Economic Error Communication*, the indirect effect is also tested. Since the direct effect can also be confirmed as significant [ $-0.388$ ;  $-0.003$ ] and the direct and indirect effects point in the same direction, it is a complementary partial mediation (Nitzl et al., 2016). The total effect represents the sum of the indirect effects and the direct effect [ $-0.458$ ;  $-0.115$ ]. This

**TABLE 4** Estimation of the formative measurement model (full sample,  $n = 121$ )

Formative measures	Weight	<i>p</i> -value	Variance inflation factor (VIF)
EEC1 → Economic Error Communication	0.364	< 0.001	1.449
EEC2 → Economic Error Communication	0.318	< 0.001	1.913
EEC3 → Economic Error Communication	0.274	< 0.001	1.423
EEC4 → Economic Error Communication	0.322	< 0.001	1.762
BusPa1 → Business Partner	0.265	< 0.001	2.109
BusPa2 → Business Partner	0.274	< 0.001	2.044
BusPa3 → Business Partner	0.196	< 0.001	1.725
BusPa4 → Business Partner	0.252	< 0.001	1.960
BusPa5 → Business Partner	0.278	< 0.001	1.732
PSM1 → Public Service Motivation	0.312	0.019	1.433
PSM2 → Public Service Motivation	0.268	0.024	1.467
PSM3 → Public Service Motivation	0.371	0.001	1.432
PSM4 → Public Service Motivation	0.409	0.002	1.321

Note: The numbers in the item labels represent the numbering of the survey questions in the Appendix. *p*-values are two-tailed; 5000 bootstraps; bias-corrected.

**TABLE 5** Path coefficient results (full sample,  $n = 121$ )

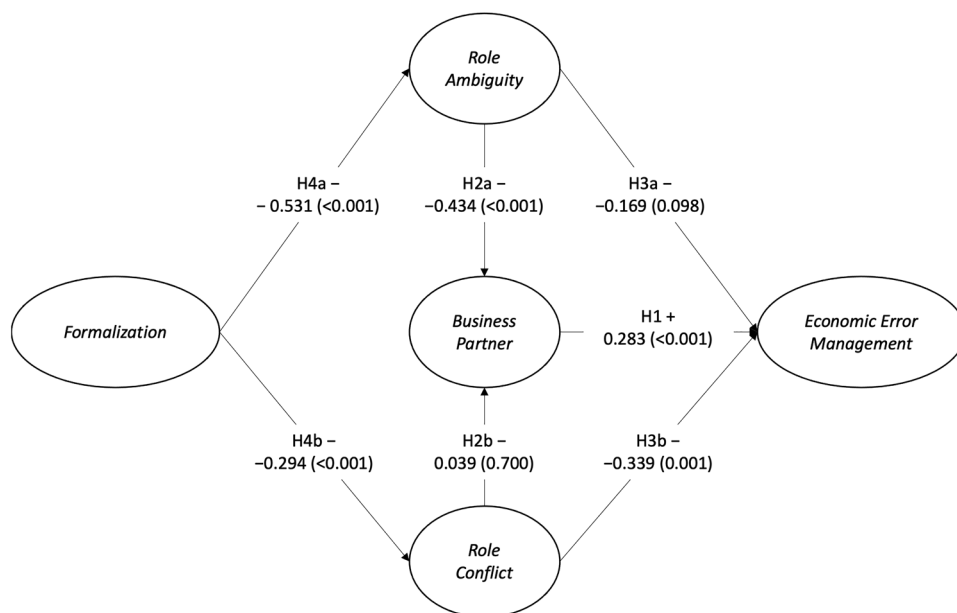
	Path coefficients	<i>p</i> -value	VIF
Business Partner → Economic Error Communication	0.283	< 0.001	1.281
Formalization → Role Ambiguity	-0.531	< 0.001	1.000
Formalization → Role Conflict	-0.294	0.003	1.000
Role Ambiguity → Business Partner	-0.434	< 0.001	1.229
Role Ambiguity → Economic Error Communication	-0.172	0.112	1.662
Role Conflict → Business Partner	0.039	0.700	1.229
Role Conflict → Economic Error Communication	-0.339	0.001	1.308
PSM → Economic Error Communication	0.210	0.001	1.292
Education → Economic Error Communication	0.056	0.325	1.036
Age → Economic Error Communication	0.115	0.136	1.514
Gender → Economic Error Communication	-0.032	0.639	1.110
Position → Economic Error Communication	-0.241	< 0.001	1.335
Audit Office Size → Economic Error Communication	-0.096	0.106	1.086

Note *p*-values are two-tailed; 5000 bootstraps; bias-corrected.

TABLE 6 Estimation of the mediating effect

Relations	Total effect		Indirect effect		Direct effect	
	Coefficient	95% confidence interval	Coefficient	95% confidence interval	Coefficient	95% confidence interval
Role Ambiguity → Economic Error Communication	<b>-0.291</b>	<b>[-0.458; -0.115]</b>	-	-	<b>-0.169</b>	<b>[-0.338; -0.003]</b>
Role Ambiguity → Business Partner → Economic Error Communication	-	-	<b>-0.123</b>	<b>[-0.206; -0.060]</b>	-	-
Role Conflict → Economic Error Communication	<b>-0.329</b>	<b>[-0.468; -0.168]</b>	-	-	<b>-0.340</b>	<b>[-0.488; -0.168]</b>
Role Conflict → Business Partner → Economic Error Communication	-	-	0.011	<b>[-0.031; 0.069]</b>	-	-

Note: A path relation is significant at a significance level of 0.1 (two-tailed test) if zero is not included in the confidence interval; significant effects are bolded.



**FIGURE 2** Results of the full model.

complementary partial mediation indicates that the mediating variable *Business Partner* confounds the relationship between *Role Ambiguity* and *Economic Error Communication* (X. Zhao et al., 2010).

A nonsignificant indirect effect exists between *Role Conflict* and *Economic Error Communication*, as zero is included in the confidence interval  $[-0.031; 0.069]$ . Only the direct effect is significant  $[-0.488; -0.168]$ . Hence, *Business Partner* does not mediate this effect, and no further analysis regarding the mediating effect is necessary.

## 5 | DISCUSSION AND CONCLUSION

Driven by NPM reforms and increasing public expectations regarding transparency and accountability, German public-sector auditors' roles have changed over time. Today, we observe auditors who also see themselves as a consulting and supporting partner ("business partner") of the auditee. To fulfil specific role expectations in the public sector, auditors in local governments in Germany carry out both compliance and performance audits. Performance audits involve public-sector auditors taking a deep look at economic errors in public institutions, such as incorrect investment decisions, incorrect calculations, and misjudgements, and communicating these errors to the auditee as a business partner.

Stimulated by role definitions provided by management accounting literature (e.g., Goretzki & Messner, 2019; Goretzki et al., 2013; Granlund & Lukka, 1998; Hartmann & Maas, 2011; Järvenpää, 2007; Tillema et al., 2022), the present paper is the first to explicitly transfer the concept of business partnering to the context of public-sector performance auditing. Doing so, our research conceptually contributes to the literature discussing the changes in public-sector auditors' roles toward performance auditing (e.g., see Johnsen et al., 2001; Monfardini & Maravic, 2012; Sher-Hadar, 2020). By applying a role theory perspective (Kahn et al., 1964; Katz & Kahn, 1978), our study informs the performance auditing literature from a (new) theoretical perspective (Free et al., 2013; Funnell, 2015; Morin, 2001). Previous studies in this context have been informed mainly by institutional theory (e.g., Johnsen et al., 2001; Sher-Hadar, 2020), which focuses on the processes by which social structures determine social behavior (Nitzl et al., 2020). Based on role theory (Kahn et al., 1964; Katz & Kahn, 1978), we contribute to this research field by providing

evidence that individuals who act as proponents of performance auditing (role senders) set new role expectations to public-sector auditors (focal persons). Our findings show that German public-sector auditors who assume a stronger business partner role communicate their auditees' economic errors more actively than other auditors, as the former are more willing to communicate a detected economic error to the auditee, inform the auditee about additional audit procedures due to errors, talk about an economic error with the person who caused it, and convey to him or her the scale of the error (Gronewold & Donle, 2011). Accordingly, auditors who align with the role of partner to political and bureaucratic decision-makers see the communication of economic errors as part of their job (role behavior; Roussy, 2013).

Furthermore, we investigate the argument inspired by role theory that auditors who experience less role ambiguity see themselves more as business partners and communicate economic errors in a more active manner than other auditors. The results show that the business partner role has a mediating effect on the relationship between role ambiguity and economic error communication. Furthermore, our findings show that more clarity about authority, responsibility, time availability, and expectations, among other job aspects, strengthens the business partner role of public-sector auditors. However, the results do not show a significant negative relationship between role conflict and the business partner role. Nevertheless, they indicate that the existence of role conflict negatively influences the public-sector auditor's economic error communication. The significant negative effects of role ambiguity and role conflict on public auditors' economic error communication are in line with role theory, which assumes that role stress (comprising role conflict and role ambiguity) leads to less effective job performance.

In addition, we find another pattern described by role theory in our setting. The results suggest that public-sector auditors who work in a structured, formalized audit organization are less likely to experience role conflict and role ambiguity than auditors in other organizations. This finding is in line with research in the private-sector context, where auditors working in a structured audit organization are less likely to experience role conflict and role ambiguity (Bamber et al., 1989; Fazli Aghghaleh et al., 2014).

In summary, our study shows, in line with role theory, that if the change in a public auditor's role expectations is accompanied by clear structures and a high degree of formalization, public auditors suffer less from role ambiguity and/or role conflict. Then, auditors can succeed in fulfilling their expected role. These insights may also be interesting for researchers investigating the challenges that management accountants experience when they are given a business partner role (Tillema et al., 2022). As management accounting research on business partnering has been dominated by institutional theory (e.g., Burns & Baldvinsdottir, 2005; Goretzki et al., 2013; Granlund & Lukka, 1998), it could be promising to apply a role theory perspective in corresponding future research. Role theory has the benefit that organizational factors (e.g., size, structure; Bamber et al., 1989; Fazli Aghghaleh et al., 2014) and individual experience (i.e., role stress) (Katz & Kahn, 1978; Rizzo et al., 1970) can be considered antecedents of individuals' job behavior.

As in any (empirical) study, this study suffers from limitations that may hinder the generalization of the results. The conclusions are based on an average evaluation as is common for empirical research. The public-sector auditors provided subjective answers, which may be biased by prejudice and therefore not objective. However, this so-called social desirability was included to counteract the marker variable *PSM*. This study has looked only at auditors' economic error communication as the target variable. Although this special task distinguishes public-sector auditors from traditional private-sector auditors, this variable is probably not the only one that characterizes the job performance of public-sector auditors. However, our study is not a longitudinal study but has focused on one point in time. Therefore, we are not able to show changes in the auditors' role during a given time period.

Our findings also carry practical implications for German public-sector auditors, public managers, and policymakers. In general, public audit offices should be highly interested in establishing a structured and formalized organization to avoid role ambiguity and role conflict and to foster public-sector auditors' adoption of the business partner role. This approach would lead to better economic error communication by the auditor. Public auditors who experience role conflict and role ambiguity probably do not see themselves as business partners and do not communicate economic errors as actively as they are capable of doing. In such a context, it cannot be expected that audit processes will best support the audited entity to improve workflows, services, and performance.



Our study focuses on the specific role expectations of public auditors in the German context, which is still influenced by a legalistic-bureaucratic tradition. Future studies could test our results with different contexts and administrative traditions. An enriching approach for future studies could also be to examine the impact of role stress and perceived business partner role on aspects of public auditors' job performance beyond economic error communication, for example, in terms of audit quality (DeAngelo, 1981).

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## DATA AVAILABILITY STATEMENT

Data are available upon request.

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## ENDNOTES

<sup>1</sup> Some researchers, particularly those from the United Kingdom, use the term “value for money audit” instead of “performance audit” (Johnsen et al. 2001).

<sup>2</sup> Translation from German by the authors.

<sup>3</sup> The term “business partner” is mainly used in the management accounting literature, and we transfer this idea to the public-sector audit context.

<sup>4</sup> Translation from German by the authors.

<sup>5</sup> The data collection took place from June to November 2018.

<sup>6</sup> The numbering of the survey questions represents the labeling of the items contained in Tables 2, 4, and 1A. The headings before the questions were not part of the original survey. Please note that the original survey materials were in German.

## REFERENCES

- Andon, P., Free, C., & O'Dwyer, B. (2015). Annexing new audit spaces: Challenges and adaptations. *Accounting, Auditing and Accountability Journal*, 28(8), 1400–1430.
- Bamber, E. M., Snowball, D., & Tubbs, R. M. (1989). Audit structure and its relation to role conflict and role ambiguity: An empirical investigation. *The Accounting Review*, 64(2), 285–299.
- Bowerman, M. (1994). The National Audit Office and the Audit Commission: Co-operation in areas where their VFM responsibilities interface. *Financial Accountability and Management*, 10(1), 47–63.
- Burns, J., & Baldvinsdottir, G. (2005). An institutional perspective of accountants' new roles—The interplay of contradictions and praxis. *European Accounting Review*, 14(4), 725–757.
- Chenhall, R. H., & Brownell, P. (1988). The effect of participative budgeting on job satisfaction and performance: Role ambiguity as an intervening variable. *Accounting, Organizations and Society*, 13(3), 225–233.
- Chin, W. W. (2010). How to write up and report PLS analyses. In V. Esposito Vinzi (Ed.), *Handbook of partial least squares: Concepts, methods and applications* (pp. 655–690). Springer.
- Chin, W. W., Thatcher, J. B., Wright, R. T., & Steel, D. (2013). Controlling for common method variance in PLS analysis: The measured latent marker variable approach. In H. Abdi, W. W. Chin, V. Esposito Vinzi, G. Russolillo, & L. Trinchera (Eds.), *New perspectives in partial least squares and related methods* (pp. 231–239). Springer.
- Chong, V. K., & Monroe, G. S. (2015). The impact of the antecedents and consequences of job burnout on junior accountants' turnover intentions: A structural equation modelling approach. *Accounting and Finance*, 55(1), 105–132.
- Couper, M. P. (2000). Web surveys: A review of issues and approaches. *The Public Opinion Quarterly*, 64(4), 464–494.
- Couper, M. P., Traugott, M. W., & Lamias, M. J. (2001). Web survey design and administration. *The Public Opinion Quarterly*, 65(2), 230–253.
- DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of Accounting and Economics*, 3(3), 183–199.
- Ellwood, S., & Garcia-Lacalle, J. (2012). New development: Local public audit—the changing landscape. *Public Money and Management*, 32(5), 389–392.
- Evans, J. H., & Patton, J. M. (1987). Signaling and monitoring in public-sector accounting. *Journal of Accounting Research*, 25, 130–158.

- Fazli Aghghaleh, S., Muhammaddun Mohamed, Z., & Ahmad, A. (2014). The effects of personal and organizational factors on role ambiguity amongst internal auditors. *International Journal of Auditing*, 18(2), 105–114.
- Fiebig, H., & Zeis, A. (2018). *Kommunale Rechnungsprüfung: Grundlagen-Aufgaben-Organisation [Local public-sector auditing: Background-tasks-organization]*. Erich Schmidt Verlag.
- Fisher, R. T. (2001). Role stress, the type A behavior pattern, and external auditor job satisfaction and performance. *Behavioral Research in Accounting*, 13(1), 143–170.
- Free, C., Radcliffe, V. S., & White, B. (2013). Crisis, committees and consultants: The rise of value-for-money auditing in the federal public sector in Canada. *Journal of Business Ethics*, 113(3), 441–459.
- Frese, M. (1991). Error management or error prevention: Two strategies to deal with errors in software design. In H. -J. Bullinger (Ed.), *Human aspects in computing: Proceedings of the fourth international conference on human-computer interaction* (pp. 776–782). Elsevier.
- Funnell, W. (2015). Performance auditing and adjudicating political disputes. *Financial Accountability and Management*, 31(1), 92–111.
- Gisch, C., Hirsch, B., & Lindermüller, D. (2021). Reporting practices in situations of conflicting intuitional logics: The case of a German federal authority. *Journal of Accounting & Organizational Change*, 17(4), 494–518.
- Glöckner, A., & Mühlenkamp, H. (2009). Die kommunale finanzkontrolle [Municipal financial control]. *Zeitschrift für Planung und Unternehmenssteuerung*, 19(4), 397–420.
- Goolsarran, S. A. (2007). The evolving role of supreme audit institutions. *Journal of Government Financial Management*, 56(3), 28–32.
- Goretzki, L., & Messner, M. (2019). Backstage and frontstage interactions in management accountants' identity work. *Accounting, Organizations and Society*, 74, 1–20.
- Goretzki, L., Strauss, E., & Weber, J. (2013). An institutional perspective on the changes in management accountants' professional role. *Management Accounting Research*, 24(1), 41–63.
- Granlund, M., & Lukka, K. (1998). Towards increasing business orientation: Finnish management accountants in a changing cultural context. *Management Accounting Research*, 9(2), 185–211.
- Gronewold, U., & Donle, M. (2011). Organizational error climate and auditors' predispositions toward handling errors. *Behavioral Research in Accounting*, 23(2), 69–92.
- Guthrie, J. E., & Parker, L. D. (1999). A quarter of a century of performance auditing in the Australian federal public sector: A malleable masque. *Abacus*, 35(3), 302–332.
- Hair, J., Howard, H., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110.
- Hair, J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed). Sage Publications.
- Hair, J., Ringle, C., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hall, D. T. (1972). A model of coping with role conflict: The role behavior of college educated women. *Administrative Science Quarterly*, 17(4), 471–486.
- Hartmann, F. G. H., & Maas, V. S. (2011). The effects of uncertainty on the roles of controllers and budgets: an exploratory study. *Accounting and Business Research*, 41(5), 439–458.
- Harzing, A. -W. (1997). Response rates in international mail surveys: Results of a 22-country study. *International Business Review*, 6(6), 641–665.
- Henseler, J., Ringle, C., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Hiebl, M. R. W., & Richter, J. F. (2018). Response rates in management accounting survey research. *Journal of Management Accounting Research*, 30(2), 59–79.
- Hood, C., James, O., Jones, G., Scott, C., & Travers, T. (1998). Regulation inside government: Where new public management meets the audit explosion. *Public Money and Management*, 18(2), 61–68.
- Institut der Rechnungsprüfer (IDR). (n.d.-a). *Das moderne Leitbild der kommunalen Revision [A modern mission statement for public-sector auditors]*. <https://www.idrd.de/idr/idr-leitbild/>
- Institut der Rechnungsprüfer (IDR). (n.d.-b). *Mitglied werden [Become a member]*. <https://www.idrd.de/mitglied-werden/>
- Jackson, S. E., & Schuler, R. S. (1985). A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings. *Organizational Behavior and Human Decision Processes*, 36(1), 16–78.
- Jacobs, K. (1998). Value for money auditing in New Zealand: Competing for control in the public sector. *The British Accounting Review*, 30(4), 343–360.
- Järvenpää, M. (2007). Making Business Partners: A case study on how management accounting culture was changed. *European Accounting Review*, 16(1), 99–142.
- Jeppesen, K. K., Carrington, T., Catasús, B., Johnsen, Å., Reichborn-Kjennerud, K., & Vakkuri, J. (2017). The strategic options of supreme audit institutions: The case of four Nordic countries. *Financial Accountability and Management*, 33(2), 146–170.

- Johnsen, Å., Meklin, P., Oulasvirta, L., & Vakkuri, J. (2001). Performance auditing in local government: An exploratory study of perceived efficiency of municipal value for money auditing in Finland and Norway. *European Accounting Review*, 10(3), 583–599.
- Johnsen, Å., Meklin, P., Oulasvirta, L., & Vakkuri, J. (2004). Governance structures and contracting out municipal auditing in Finland and Norway. *Financial Accountability and Management*, 20(4), 445–477.
- Johnsen, Å. (2019). Public sector audit in contemporary society: A short review and introduction. *Financial Accountability and Management*, 35(2), 121–127.
- Jones, A., Norman, C. S., & Wier, B. (2010). Healthy lifestyle as a coping mechanism for role stress in public accounting. *Behavioral Research in Accounting*, 22(1), 21–41.
- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). Wiley.
- Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). *Organizational stress: Studies in role conflict and ambiguity*. Wiley.
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1–10.
- Larson, L. L. (2004). Internal auditors and job stress. *Managerial Auditing Journal*, 19(9), 1119–1130.
- Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86, 114–121.
- Lonsdale, H., Mul, R., & Pollitt, C. (2002). The auditor's craft. In C. Pollitt, X. Girre, J. Lonsdale, R. Mul, H. Summa, & M. Waerness (Eds.), *Performance of compliance? Performance audit and public management in five countries* (pp. 105–124). Oxford University Press.
- Maas, V. S., & Matejka, M. (2009). Balancing the dual responsibilities of business unit controllers: Field and survey evidence. *The Accounting Review*, 84(4), 1233–1253.
- Marginson, D., & Bui, B. (2009). Examining the human cost of multiple role expectations. *Behavioral Research in Accounting*, 21(1), 59–81.
- Meyer, R. E., & Hammerschmid, G. (2006). Changing institutional logics and executive identities: A managerial challenge to public administration in Austria. *American Behavioral Scientist*, 49(7), 1000–1014.
- Morgan, G. (1980). Internal audit role conflict: A pluralist view. *Managerial Finance*, 5(2), 160–170.
- Morin, D. (2001). Influence of value for money audit on public administrations: Looking beyond appearances. *Financial Accountability and Management*, 17(2), 99–117.
- Monfardini, P., & Maravic, P. (2012). Municipal auditing in Germany and Italy: Explosion, change, or recalcitrance? *Financial Accountability and Management*, 28(1), 52–76.
- Nitzl, C. (2016). The use of partial least squares structural equation modelling (PLS-SEM) in management accounting research: Directions for future theory development. *Journal of Accounting Literature*, 37, 19–35.
- Nitzl, C., Hilgers, D., Hirsch, B., & Linder Müller, D. (2020). The influence of organizational structure, environment, and resource provision on the use of accrual accounting in municipalities. *Schmalenbach Business Review*, 72(2), 271–298.
- Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling. *Industrial Management & Data Systems*, 116(9), 1849–1864.
- Parker, R., & Bradley, L. (2000). Organizational culture in the public sector: Evidence from six organizations. *International Journal of Public Sector Management*, 13(2), 125–141.
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544.
- Pugh, D. S., Hickson, D. J., Hinings, C. R., & Turner, C. (1968). Dimensions of organization structure. *Administrative Science Quarterly*, 13(1), 65–105.
- Reason, J. (2000). Human error: Models and management. *British Medical Journal*, 320, 768–770.
- Reichborn-Kjennerud, K. (2013). Political accountability and performance audit: The case of the auditor general in Norway. *Public Administration*, 91(3), 680–695.
- Richter, M. (2014). Rechnungsprüfung in Kommunen: Ein modernes Leitbild [Local public-sector auditing: A modern mission statement]. *Rechnungswesen & Controlling*, 6, 1073–1090.
- Richter, M. (2018). *Leitbild einer modernen kommunalen Rechnungsprüfung—Gutachten zur Bewertung der Beamtenstellen in der kommunalen Rechnungsprüfung [A modern mission statement for public-sector auditors—Report for the evaluation of positions in public-sector auditing]*. Institut der Rechnungsprüfer (IDR). [https://www.idr.de/fileadmin/user\\_upload/idr/IDR\\_H\\_210\\_Gutachten\\_Leitbild\\_MRichter.pdf](https://www.idr.de/fileadmin/user_upload/idr/IDR_H_210_Gutachten_Leitbild_MRichter.pdf)
- Ridder, H. -G., Bruns, H. -J., & Spier, F. (2006). Managing implementation processes. *Public Management Review*, 8(1), 87–118.
- Ringle, C., Da Silva, D., & Bido, D. (2014). Structural equation modeling with the SmartPLS. *Brazilian Journal of Marketing*, 13(2), 56–73.
- Ringle, C., Wende, S., & Becker, J. - M. (2020). *SmartPLS 3* (Version 3.3.2) [Computer software]. <http://www.smartpls.de>
- Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 15(2), 150–163.

- Rosengart, T., Hirsch, B., & Nitzl, C. (2019). The effects of legal versus business education on decision making in public administrations with a Weberian tradition. *Business Research*, 42(1), 455–478.
- Perry, J. L. (1996). Measuring public service motivation: An assessment of construct reliability and validity. *Journal of Public Administration Research and Theory*, 6(1), 5–22.
- Perry, J. L., & Wise, L. R. (1990). The motivational bases of public service. *Public Administration Review*, 50(3), 367–373.
- Pina, V., Torres, L., & Yetano, A. (2009). Accrual accounting in EU local governments: One method, several approaches. *European Accounting Review*, 18(4), 765–807.
- Rogers, D. L., & Molnar, J. (1976). Organizational antecedents of role conflict and ambiguity in top-level administrators. *Administrative Science Quarterly*, 21(4), 598–610.
- Roussy, M. (2013). Internal auditors' roles: From watchdogs to helpers and protectors of the top manager. *Critical Perspectives on Accounting*, 24(7-8), 550–571.
- Ruffner, M., & Sevilla, J. (2006). Public sector modernization: Modernising accountability and control. *OECD Journal on Budgeting*, 4(2), 123–141.
- Sarstedt, M., Hair, J., Nitzl, C., Ringle, C., & Howard, M. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses!. *International Journal of Market Research*, 62(3), 288–299.
- Sarstedt, M., Hair, J., Ringle, C., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies! *Journal of Business Research*, 69(10), 3998–4010.
- Senatra, P. T. (1980). Role conflict, role ambiguity, and organizational climate in a public accounting firm. *The Accounting Review*, 55(4), 594–603.
- Shenkar, O., & Zeira, Y. (1992). Role conflict and role ambiguity of chief executive officers in international joint ventures. *Journal of International Business Studies*, 23(1), 55–75.
- Sher-Hadar, N. (2020). Pick and roll: Expanded roles for a state auditor. *Financial Accountability and Management*, 36(3), 229–243.
- Sitkin, S. B. (1997). Learning through failure: The strategy of small losses. In M. D. Cohen & L. S. Sproull (Eds.), *Organization science. Organizational learning* (pp. 541–577). Sage Publications.
- Skærbæk, P. (2009). Public sector auditor identities in making efficiency auditable: The National Audit Office of Denmark as independent auditor and modernizer. *Accounting, Organizations and Society*, 34(8), 971–987.
- Smith, K. J., & Emerson, D. J. (2017). An analysis of the relation between resilience and reduced audit quality within the role stress paradigm. *Advances in Accounting*, 37, 1–14.
- Smith, K. J., Emerson, D. J., & Everly, G. S., Jr. (2017). Stress arousal and burnout as mediators of role stress in public accounting. In K. E. Karim, C. Bailey, T. Fogarty, J. Hasseldine, R. Pinsker, T. Pitre, & R. W. Rutledge (Eds.), *Advances in accounting behavioral research* (pp. 79–116). Emerald Publishing.
- Speklé, R. F., & Widener, S. K. (2018). Special forum on survey research. *Journal of Management Accounting Research*, 30(2), 1–2.
- Summa, H. (2002). Definitions and frameworks. In C. Pollitt, X. Girre, J. Lonsdale, R. Mul, H. Summa, & M. Waerness (Eds.), *Performance of compliance? Performance audit and public management in five countries* (pp. 11–29). Oxford University Press.
- Taskin, L., & Edwards, P. (2007). The possibilities and limits of telework in a bureaucratic environment: Lessons from the public sector. *New Technology, Work and Employment*, 22(3), 195–207.
- Tillema, S., Trapp, R., & van Veen-Dirks, P. (2022). Business partnering in risk management: A resilience perspective on management accountants' responses to a role change. *Contemporary Accounting Research*, 39(3), 2058–2089.
- Viator, R. E. (2001). The association of formal and informal public accounting mentoring with role stress and related job outcomes. *Accounting, Organizations and Society*, 26(1), 73–93.
- Weber, M. (1978). *Economy and society: An outline of interpretive sociology*. University of California Press.
- Wehrich, D. (2018). Performance auditing in Germany concerning environmental issues. *Sustainability Accounting, Management and Policy Journal*, 9(1), 29–42.
- Zahradnik, S. (2018). *Personalstellen und -struktur städtischer Rechnungsprüfungsämter in Deutschland [Human Resource in local public-sector auditing in Germany]*. <https://nbn-resolving.org/urn:nbn:de:gbv:27-dbt-20180326-0946252>
- Zhao, B., & Olivera, F. (2006). Error reporting in organizations. *Academy of Management Review*, 31(4), 1012–1030.
- Zhao, X., Lynch, J. G., Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206.

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## APPENDIX

### SURVEY QUESTIONS<sup>6</sup>

#### Formalization

To what extent do these statements apply to your daily work on your audit team?

1. Administrative responsibilities are strictly dictated by written job descriptions.
2. Decision-making processes are largely defined by rules.
3. The rules of the procedure are always followed strictly.
4. Internal communication takes place only in standardized forms (e.g., minutes, reports).

Possible answers ranged from 1 = "applies completely" to 7 = "does not apply at all."

#### Role Conflict

The following questions refer to information about your individual indicators regarding role conflict. To what extent do these statements apply to your daily work on your audit team?

1. I have to do things that should be done differently.
2. I receive assignments but do not have time to complete them.
3. I have to buck a rule or policy to carry out an assignment.
4. I receive requests from two or more people that are incompatible.
5. I do things that are likely to be accepted by one person but not accepted by others.
6. I receive assignments without adequate resources and materials to execute them.
7. I work on unnecessary things.
8. I work with two or more groups who operate quite differently.

Possible answers ranged from 1 = "applies completely" to 7 = "does not apply at all."

#### Role Ambiguity

The following questions refer to information about your individual indicators regarding role ambiguity. To what extent do these statements apply to your daily work on your audit team?

1. I feel certain about how much authority I have.
2. I have clear, planned goals and objectives for my job.
3. I know that I allocate my time properly.
4. I know what my responsibilities are.
5. I know exactly what is expected of me.
6. I receive clear explanations of what needs to be done.

Possible answers ranged from 1 = "applies completely" to 7 = "does not apply at all."

#### Business Partner Role

The following questions refer to your daily work tasks. How important are the following tasks in your job?

1. Analyzing the profitability of the public service delivery of the audited entity.
2. Evaluating investment opportunities for the audited entity.
3. Developing economic strategies for the audited entity.
4. Helping the audited entity meet economic targets.
5. Helping the audited entity reduce costs and increase earnings.

Possible answers ranged from 1 = "very important" to 7 = "not at all important."

### Economic Error Communication

The following questions refer to your reaction in your daily practice when you detect economic errors made by your auditee. Please think only of unintentional errors. Errors due to fraudulent acts should not be considered. Economic errors are errors that can lead to a loss of tax money, for example, due to errors in calculations, errors in public holdings' management, errors in investment decisions, and errors in workflows. How often does it happen that you...

1. ...conduct additional audit procedures due to economic errors without informing the auditee about their goal?
2. ...do not talk about the economic error with the auditee in order to prevent them from blocking further examinations?
3. ...do not talk about the economic error with the person who caused it because (s)he does not have sufficient knowledge of the subject matter?
4. ...talk to the auditee after detecting an economic error but without telling him (her) the scale of the error?

Possible answers ranged from 1 = "never behave this way" to 7 = "regularly behave this way."

### Public Service Motivation

To what extent do these statements apply to you?

1. Meaningful public service is very important to me.
2. I am often reminded by daily events how dependent we are on one another.
3. Making a difference in society means more to me than personal achievements.
4. I am not afraid to go to bat for the rights of others even if it means I will be ridiculed.
5. I am prepared to make sacrifices for the good of society.

Possible answers ranged from 1 = "applies completely" to 7 = "does not apply at all."

## APPENDIX ITEMS

**TABLE 1A** Descriptive statistics at the item level (full sample,  $n = 121$ )

Item	Mean	Min	Max	Sd	Excess kurtosis	Skewness
<i>Economic Error Communication</i>						
EEC1r	3.132	1.000	7.000	1.443	-0.384	0.451
EEC2r	2.017	1.000	7.000	1.113	3.122	1.532
EEC3r	2.769	1.000	6.000	1.204	-0.172	0.600
EEC4r	2.132	1.000	7.000	1.266	3.124	1.654
<i>Role Ambiguity</i>						
RoleAm1r	6.325	3.000	7.000	0.808	2.561	-1.432
RoleAm2r	6.107	2.000	7.000	1.011	4.090	-1.726
RoleAm3r	5.413	2.000	7.000	1.103	0.117	-0.618
RoleAm4r	6.463	2.000	7.000	0.782	8.543	-2.286
RoleAm5r	5.908	2.000	7.000	1.080	1.754	-1.342

(Continues)

**TABLE 1A** (Continued)

Item	Mean	Min	Max	Sd	Excess kurtosis	Skewness
<i>Role Conflict</i>						
RoleCon1	5.125	1.000	7.000	1.646	-0.720	-0.555
RoleCon5	4.932	1.000	7.000	1.986	-0.914	-0.602
RoleCon6	5.529	1.000	7.000	1.555	0.579	-1.122
RoleCon7	5.339	2.000	7.000	1.452	-0.255	-0.790
<i>Business Partner</i>						
BusPa1	3.868	1.000	7.000	1.671	-0.841	0.212
BusPa2	3.496	1.000	7.000	1.606	-0.659	0.438
BusPa3	3.375	1.000	7.000	1.698	-0.503	0.543
BusPa4	3.066	1.000	7.000	1.470	-0.404	0.548
BusPa5	2.475	1.000	7.000	1.245	1.049	1.003
<i>Formalization</i>						
Formalization2	3.392	1.000	7.000	1.468	-0.421	0.240
Formalization3	2.818	1.000	7.000	1.460	0.010	0.805
<i>Public Service Motivation (PSM)</i>						
PSM1	1.941	1.000	7.000	1.060	6.109	1.979
PSM2	2.653	1.000	7.000	1.304	1.319	1.111
PSM3	2.788	1.000	7.000	1.346	0.512	0.775
PSM4	2.291	1.000	7.000	1.155	1.945	1.197

Note: Items ending with an "r" are reverse-coded (i.e., EEC and RoleAm).