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RESEARCH ARTICLE

Path dependence of accountants: Why are they not involved in corporate sustainability?

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Abstract

Accounting has been identified as a key area to inform managers seeking to transform businesses towards sustainability. Empirical research, however, shows that management accountants are scarcely involved in sustainability accounting. This paper contributes to understanding their barriers, using path dependence theory as a theoretical framework to empirically investigate how accountants have become “locked in” by self-reinforcing mechanisms. Based on semistructured interviews with 33 management accountants in Germany, the paper identifies three interrelated self-reinforcing mechanisms that inhibit accountants from sustainability involvement. A strong focus on financial priorities and incremental improvements driven by top management expectations hinder the consideration of sustainability beyond its direct costs. Specialization is another barrier, as is an understanding of sustainability as peripheral rather than a core business. Contrary to prior literature, accountants express eagerness to learn, though rarely about sustainability. They rarely question assumptions about sustainability and their role, leading to missed opportunities for double-loop learning and more transformative change.

KEYWORDS

corporate sustainability, management accounting practices, management control systems, path dependence theory, performance measurement, sustainability accounting

1 | INTRODUCTION

Sustainability management accounting and control offers many (potential) benefits for organizations, like improving environmental and economic performance (Chaudhry & Amir, 2020; Gunarathne et al., 2021; Naranjo Tuesta et al., 2021), enabling comprehensive risk management (Arjaliès & Mundy, 2013), contributing to process innovation (Ferreira et al., 2010), and supporting decisions to stay in the space of planetary boundaries (Schaltegger, 2018). With the recent

introduction of the sustainable finance taxonomy by the European Union (European Commission, 2020), sustainability management accounting and control may gain even wider relevance for corporate decision-making in practice. Academia echoes this regulatory development with an increasing number of publications in this field of research (Guenther et al., 2016; Parker, 2011; Traxler et al., 2020) and recent calls for a broader understanding of the accounting function, changing it from a mere technical practice to a moral and social one (Carnegie et al., 2020).

Abbreviations: EBIT, Earnings Before Interest and Taxes; EU, European Union; M&A, Mergers & Acquisitions; R&D, Research & Development; SDGs, Sustainable Development Goals; VP, Vice President.

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The role of management accountants has been discussed with regard to their potential in promoting sustainability in companies. Williams (2015, p. 281) argues that it is important to involve accountants in corporate sustainability due to “their technical expertise, key reporting competencies, and ability to analyze and translate data into accessible measurements”. Management accountants are responsible for management accounting and control systems, and especially their conventional accounting skillset could make sustainability projects more robust and prominent in organizations. Wilmshurst and Frost (2001) furthermore argue that accountants can make financially focused sustainability metrics more reliable and accurate, thereby underlining their importance. Accountants might also promote sustainability by improving the decision utility of accounting-related technologies (Lambert & Sponem, 2011). Due to their important position in organizations and their close relation to top management, management accountants also know the characteristics of key performance indicators and top management's decision-making processes (Schaltegger & Zvezdov, 2015). Based on the perception of an ever-changing business environment, Hoang (2018) underlines that the rise of integrated reporting gives accountants an important role to play in providing sustainability information to stakeholders. Furthermore, EU regulations like the emissions trading system, the corporate social reporting directive, or the corporate sustainability due to diligence directive drive companies into accounting, reporting, and managing sustainability impacts. Recent research shows that in this context, chief financial officers can help promote sustainability in the organization (Asiaei et al., 2022). The dynamic business environment, however, does not only concern financial officers and accountants: It also calls for an increased professionalization of internal accounting processes to create the necessary data that will support management decisions and therefore requires the involvement of management accountants.

In contrast to these calls for involving management accountants more closely in corporate sustainability management, empirical investigations of corporate practice show that they are rarely involved in sustainability accounting (Bennett et al., 2013; Caron & Fortin, 2014; Egan & Tweedie, 2018). The collection, analysis, and use of sustainability information seem to instead spread among various roles and business functions in a company (e.g., Albelda, 2011; Schaltegger et al., 2015). In cases where management accountants are involved, they often act as gatekeepers to top management (Schaltegger & Zvezdov, 2015). While accounting is thought to be a key area to inform managers seeking to transform businesses towards sustainability (e.g., Gray et al., 1995) and general “road blocks” to establishing environmental and sustainability accounting have been identified (Burritt, 2004), there has been relatively little investigation into the actual role of management accountants in corporate practice. Even though the lack of contributions by management accountants to corporate sustainability has been mentioned in the literature (e.g., Burritt et al., 2011; Caron & Fortin, 2014; Egan & Tweedie, 2018; Lovell & MacKenzie, 2011), the reasons for this behavior have rarely been analyzed empirically and in-depth. In particular, barriers from the perspective of accountants have so far not been subject to wider empirical investigations, analyzing both the accountants and their organizational contexts.

This paper aims to fill this research gap by empirically investigating barriers preventing management accountants from becoming involved in sustainability accounting and from integrating environmental and social issues into conventional accounting. The following empirical analysis aims to enhance our understanding of accountants' perceptions of their roles in organizational change and their interdependencies within the organization (Wolf et al., 2020). The present analysis is guided by a theoretical framework based on organizational path dependence theory, which has been applied as a useful theoretical lens in organizational research to investigate barriers to changing organizational and individual behavior (Garud et al., 2010; Sydow et al., 2009, 2020; Vergne & Durand, 2010). It is based on interviews with 33 management accountants of medium-sized and large companies in a wide range of industries in Germany. Based on the analysis, approaches to overcoming these barriers and to supporting the integration of sustainability into the work of accountants are discussed.

The focus of the following analysis is on management accountants who are in responsible for management control and support managerial decision-making. Malmi and Brown (2008) differentiate between accountants that contribute to an accounting system that supports corporate decision-making at any organizational level and accountants that contribute to a management control system. The latter are in charge directing employee behavior and maintaining or altering management patterns in organizations (Simons, 1994). Hence, they have a greater influence and a larger scope of action than the former (Malmi & Brown, 2008). In the literature, they are generally called management accountants or in the European context sometimes called “controllers” (Hartmann & Maas, 2010). Luther et al. (2010) found in their empirical investigation that controlling practices in German-speaking countries are somewhat different to management accounting practices in the UK and other Anglophone countries. In Germany, the focus tends to be more on financial figures than would be the case elsewhere. However, they also note that “the functions of controlling and the roles of controllers are moving in directions that will be more familiar to management accountants” (Luther et al., 2010, p. 4). This article focuses on professionals responsible for internal accounting processes in the sense of controlling practices and adopts the term “management accountant,” or just “accountant” as a short version of management accountant.

This article is structured as follows: Section 2 draws on current literature and reviews reasons for involving accountants in corporate sustainability and barriers to their involvement. Section 3 contains the theoretical framework drawing on path dependence theory. In Section 4, details on the research design and methods are presented. The results are presented in Section 5 and discussed in Section 6 where they are also placed in the context of the literature, and implications for research and practice are developed.

2 | LITERATURE REVIEW

The term “sustainability management accounting” is understood as the process of collecting, analyzing, and communicating sustainability-

related information (Maas et al., 2016). The data, measures, and indicators are mainly internally motivated and are used to improve sustainability performance. Sustainability management accounting focuses on material indicators for decision-making purposes (Beske et al., 2020). Material matters are those that substantively affect the organization's ability to create value over the short term, medium term, and long term (IIRC, 2021). Sustainability management accounting uses not only monetary data, often drawn from the same database as financial accounting and reporting data, but also nonmonetary (physical) data, as this often reflects the drivers of monetary outcomes (Burritt et al., 2002).

2.1 | Reasons for involving management accountants

While accountants working with management accounting systems already contribute to many business functions and departments (Byrne & Pierce, 2007), a large body of literature agrees that accountants should be involved in sustainability management accounting too (e.g., Albelda, 2011; Maas et al., 2016; Schaltegger & Burritt, 2018; Wilmschurst & Frost, 2001). Accountants possess skill sets that allow them to play an important role in organizations, which supports the argument that accountants should be involved in sustainability management accounting systems. Reasons for involvement found in the literature can be structured using a widely acknowledged classification by CIMA (2005) between accountants as methodological experts, as authorities and gatekeepers, and as knowledge experts.

A range of different reasons to involve accountants in sustainability management have been proposed in the literature (Table 1). First, accountants can serve as methodological experts by collecting data and defining information properties, (key) performance indicators, and

methods (Schaltegger & Zvezdov, 2015). This is an important skill in conventional management accounting that drives more data-driven and rigorous decision-making. Organizing data, being familiar with adequate methods of data collection, and processing large data quantities to a reasonable set of indicators are acknowledged as a valuable expertise of accountants (Pierce & O'Dea, 2003). Increasingly, management accountants are also involved in data analytics and visualization using advanced statistical tools such as cluster analysis and Monte Carlo analysis, which can be useful in analyzing complex data sets (Oesterreich & Teuteberg, 2019). Sustainability management accounting systems require profound methodological expertise, as physical data are often more difficult to handle and calculate than monetary data. Empirical research has shown that some accountants already fulfill this role and work with environmental data, especially on carbon emissions and water usage (Lovell & MacKenzie, 2011; Schaltegger et al., 2015). Accountants can help organizations decrease the costs of information collection and improve data quality (Bennett et al., 2013; Burritt et al., 2011). They can also support management decisions regarding a "green strategy" (Parker, 2001). The role of the methodological expert has also given accountants the image of a "bean counter" and "number cruncher" (Byrne & Pierce, 2007; Mistry et al., 2014). Wilmschurst and Frost (2001) stress that accountants' methodological expertise does not depend on being experts in environmental or social issues, as they also work with other departments such as sales and engineering without being experts in those fields either.

Another reason to involve accountants is their authority in a gatekeeper function of providing information to top management and other important decision-makers in organizations. In this role, accountants are increasingly perceived as business partners who support managers in becoming more strategic, forward-looking, and collaborative (Mistry et al., 2014). However, this powerful broker role enables

TABLE 1 Skills and roles of accountants related to sustainability management accounting

Reasons for involvement	References
Use of accounting skills for measuring, recording, monitoring, and verifying data as well as handling information in general	Lovell and MacKenzie (2011), Wilmschurst and Frost (2001), Pierce and O'Dea (2003)
Decrease costs of information collection and improve data quality with established accounting systems	Bennett et al. (2013), Burritt et al. (2011)
Define objectives, performance measures, and key performance indicators	Bennett et al. (2013)
Support strategic decisions concerning the suitability, adoption, and implementation of a "green" strategy	Parker (2001)
Collate and interpret sustainability information in an economic context, translate it for top management, and thereby address its (non)importance	Albelda (2011), Egan and Tweedie (2018), Schaltegger and Zvezdov (2015)
Act as facilitators of corporate sustainability for top management	Mistry et al. (2014)
Legitimize the work of environmental managers and lend internal credibility	Albelda (2011), Adams (2002)
Identify key problems by means of environmental audits to assess risks and compliance and give feedback for improvement	Wilmschurst and Frost (2001)
Include environmental and social costs in systems and structures	Adams (2002), Albelda (2011), Wilmschurst and Frost (2001)
Use sustainability data for integrated reporting to external stakeholders, which could also assist internal management	Albelda (2011)
Apply checks and controls to sustainability data to improve quality and validity	Bennett et al. (2013)

them to advance or suppress certain information or actors in the company. For example, accountants can interpret sustainability information in an economic context for top management (Albelda, 2011; Egan & Tweedie, 2018). This can have both positive and negative impacts on corporate performance, depending on what information is forwarded (Schaltegger & Zvezdov, 2015). If, however, accountants choose to engage with sustainability data, this can legitimize and lend internal credibility to such matters (Adams, 2002; Albelda, 2011).

The role as a knowledge and information expert comprises the accountants' knowledge of what kinds of information are relevant to managing a company successfully (e.g., Jack & Kholeif, 2008). In this role, accountants are often perceived as actors with no other interest than to improve the rationality of management activities (Deegan, 2013). As they are the process owners of financial accounts and as many environmental impacts are also likely to have a financial impact, it would be irresponsible of management not to involve accountants in the process of considering these costs and revenues in accounts, reports, and decision-making (Adams, 2002; Wilmshurst & Frost, 2001). Adams (2002) shows that conventional accounting systems can be used to effectively manage and analyze sustainability-related data instead of implementing entirely new systems. Similarly, Albelda (2011) finds that integrating environmental costs into the existing costing system had the desired effect of decreasing energy consumption and waste. As accountants are the experts in managing those systems, they can also apply checks and controls to sustainability data to improve its quality and validity (Bennett et al., 2013).

In their role as knowledge and information experts, management accountants can provide information on business cases for decision-making to top management. Identifying and developing business cases of and for sustainability has been proposed as one of the possible reasons for involving management accountants in sustainability accounting. Four different types of business cases have been distinguished: reactionary, reputational, responsible, and collaborative business cases (Schaltegger & Burritt, 2010, 2018). The reactionary business case of sustainability focuses on maintaining business as usual and only allows for sustainability measures if they increase profitability. The reputational business case of sustainability aims for reputational benefits that translate into financial benefits. The responsible business case for sustainability strives for operational excellence and is based on best management practices. The collaborative business case for sustainability calls for engaging in stakeholder collaborations to develop new, effective sustainability solutions as future business. These different types of business cases can be identified, analyzed, and developed by management accountants to support top management decision-making.

The changing roles of management accountants have also been discussed widely in the conventional accounting literature. For instance, the transition from the accountant as a "bean counter" predominantly processing data to a "business partner" supporting top management's decision-making has been discussed since the 1990s (e.g., Bougen, 1994) and is still debated today (Karlsson et al., 2019; Wolf et al., 2020). Research shows that especially smaller organizations still employ accountants mostly as data processors (bean counters) (Oesterreich & Teuteberg, 2019), but also in larger organizations,

many accountants are concurrently involved in both data processing and business partnering (Burns & Baldvinsdottir, 2005; Karlsson et al., 2019), suggesting they have multiple identities (Wolf et al., 2020). Multiple role identities could also allow accountants to become involved more closely in sustainability issues. However, the difficult transition to the business partner role shows that, due to role ambiguity, it would be misleading to think that shifting among multiple identities is easily accomplished (Wolf et al., 2020). However, several requirements of the business partner role, such as providing strategic and long-term information for decision-making, are in line with addressing corporate sustainability as well.

The literature review shows that management accountants have a wide array of useful skills and play important roles that could help companies in fostering their sustainability performance (Table 1). However, empirical research shows that in corporate practice management accountants rarely participate actively in sustainability management (e.g., Albelda, 2011; Mistry et al., 2014), and if so, mainly in a gatekeeper role for top management (Schaltegger & Zvezdov, 2015). A large international survey in 11 countries reveals that accounting and finance departments were ranked last among all corporate departments in promoting sustainability (Schaltegger et al., 2014). This lack of engagement in sustainability by accountants, despite numerous compelling reasons to do so, makes clear that there must be barriers to involvement, which in his conceptual overview Burritt calls "roadblocks on the way to the green and pleasant land" (2004, p. 13).

2.2 | Barriers to involving management accountants

An analysis of the accounting literature reveals few articles that focus systematically and in-depth on the barriers to involving accountants in corporate sustainability (Table 2). For instance, some consider organizational aspects and investigate the role of professional accounting bodies (Lovell & MacKenzie, 2011), the accountant's intention to engage in sustainability accounting (Kwakye et al., 2018), or deal with general role shifts (Lambert & Sponem, 2011). While Mistry et al. (2014) highlight the complexity of sustainability and the challenges of integration into existing accounting systems and organizational structures, Lovell and MacKenzie (2011) point out a lack of similarity between sustainability-related processes and the current activities of accountants.

Others discuss the personal characteristics of accountants and emphasize differences between accountants and sustainability managers in ideology, mindset, and culture as well as perceptions of sustainability's relevance and strategic importance in general (Kwakye et al., 2018). Lambert and Sponem (2011) find a lack of creative or innovative thinking among accountants, which would be required to integrate sustainability issues into conventional accounting approaches. Accountants might also be afraid that their power would be threatened and therefore use their position for gatekeeping purposes (Schaltegger & Zvezdov, 2015). An in-depth case study on the involvement of accountants in sustainability management initiatives by Egan and Tweedie (2018) finds that nonaccountants see

TABLE 2 Barriers to the involvement of accountants in corporate sustainability

Barriers	References
Methodological difficulties with including sustainability in costing systems and organizational structures	Mistry et al. (2014)
Complexity of sustainability and many aspects to consider	Adams (2002)
Lack of similarity with current activities	Lovell and MacKenzie (2011), Mistry et al. (2014), Wilmshurst and Frost (2001)
Ideological and cultural differences	Larrinaga-Gonzalez and Bebbington (2001), Schaltegger and Zvezdov (2015)
Lack of mindset that sustainability requires overly focused on cost control and profit maximization; a tendency to constrain sustainability to a safe and controllable issue	Egan and Tweedie (2018), Kwakye et al. (2018)
Perceived lack of strategic importance or irrelevance; no connection to financial success	Adams (2002), Albelda (2011)
Sustainability poses a threat to the power and organizational influence	Schaltegger and Zvezdov (2015), Larrinaga-Gonzalez and Bebbington (2001)
Lack of training	Parker (2000); Schaltegger and Zvezdov (2015), Spence et al. (2012)

accountants as simply unwilling or unable to engage with sustainability, both in the practical sense of visiting production facilities as well as intellectually in understanding the interconnectedness of sustainability issues. Similarly, Adams (2002) conducted interviews in seven companies involved in corporate social reporting and finds that neither were accountants involved in data collection nor were they considered appropriate people to be involved, mostly based on their inability to understand sustainability data and their perceived irrelevance. Furthermore, several authors (e.g., Schaltegger & Zvezdov, 2015; Spence et al., 2012) see a lack of training and education as a possible cause for the lack of involvement of accountants. Albelda (2011), in turn, conducted case studies of six factories and did find evidence for a close collaboration between accountants and environmental managers but only with regard to data concerned with capital and operating expenditures. This was attributed to the accountant's underlying values emphasizing profit orientation. Another study using a single case study reports a hostile relationship between accountants and sustainability managers due to different goals and ideologies (Larrinaga-Gonzalez & Bebbington, 2001). In this case study, accountants appeared to find environmental issues irrelevant, and using accounting systems for sustainability purposes did not help to boost sustainability's internal importance (Larrinaga-Gonzalez & Bebbington, 2001).

Overall, the literature review provides a multitude of potential reasons why accountants do not contribute to sustainability. However, despite almost half a century of social and environmental accounting research (Burritt & Schaltegger, 2010; Parker, 2011), few articles have systematically addressed barriers to integrating sustainability into the work of accountants. Research either normatively expresses the desire to further develop corporate sustainability with accounting concepts and tools (e.g., Schaltegger & Zvezdov, 2015) or, based on empirical research, is characterized by consternation at the lack of involvement by accountants (e.g., Gray et al., 1995). The few empirical studies that systematically analyze why accountants largely fail to contribute to corporate sustainability are based on case studies

and use small sample sizes (Adams, 2002; Albelda, 2011; Egan & Tweedie, 2018; Larrinaga-Gonzalez & Bebbington, 2001). While current research has helped to improve understanding of potential barriers to the sustainability involvement of accountants, their own perceptions of what key barriers are have so far not been empirically investigated in a larger sample of companies and industries.

The following qualitative research addresses this gap by investigating in a larger number of companies from various industries which barriers hinder the sustainability involvement of accountants in corporate practice. The analysis specifically considers internal organizational processes, the interplay of accountants with other organizational actors, and their reasons not to learn about and engage with sustainability. The analysis is guided by path dependence theory, which is summarized in the following section.

3 | THEORETICAL FRAMEWORK

While this research utilizes both deductive and inductive approaches, as explained in the methods section, theory is used as a framework to guide the study and data analysis (Anfara & Mertz, 2015; Saldaña, 2015). One theory that systematically addresses why organizations or organizational subunits fail to change and what mechanisms and barriers could be underlying causes for this inertia is organizational path dependence theory (Garud et al., 2010; Sydow et al., 2009, 2020; Vergne & Durand, 2010). Recent research by Gunarathne et al. (2021), Chaudhry and Amir (2020), as well as Wang et al. (2019) shows that institutional pressures can be important for promoting sustainability and environmental management accounting. Institutional theory is used as a theoretical lens to illustrate how power and institutions constrain change and can be regarded as the foundation of path dependence theory. Path dependence theory builds on this insight to show how past events and practices (can) influence future action and decision-making. However, the theory goes beyond the notion of "history matters" (Rowlinson et al., 2014) by analyzing processes with self-reinforcing

mechanisms that lead organizations to strategic persistence and operational rigidity (Sydow et al., 2009; Wenzel, 2015). Although path dependence theory has been applied in accounting research (e.g., Pittroff, 2021), it has not been used to understand why accountants do not engage in sustainability accounting. As the theory addresses both individual processes (such as learning) and organizational dependencies (on other actors), it was considered suitable for as a theoretical framework. Despite some conceptual and methodological disagreements in the organizational path dependence literature (Dobusch & Kapeller, 2013; Garud et al., 2010; Sydow et al., 2009; Vergne & Durand, 2010), most researchers agree that path dependency is characterized by the following three phases: (1) path emergence, (2) self-reinforcing mechanisms, and (3) lock-in (Figure 1).

In the path emergence phase, companies have the most strategic and operational options and are not bound to any specific one. However, small contingent events or actions may unintentionally cause nonergodic, self-reinforcing processes (Dobusch & Kapeller, 2013; Vergne & Durand, 2010; Wenzel, 2015) and lead to “a critical juncture” (Mahoney, 2000, pp. 513), which then initiates the second phase. In this phase, self-reinforcing mechanisms increasingly narrow down the scope of action and lead to “path inscription” (Koch, 2011; Sydow et al., 2009). These mechanisms are termed “self-reinforcement” (Arthur, 1994; Vergne & Durand, 2010) or “increasing returns” (Arthur, 1989; Pierson, 2000), but all relate to a circle of positive feedback that leads to increased inertia. Decisions remain contingent, and actors may still choose from a narrower range of different options. In the third phase, the lock-in phase, the dominant decision pattern becomes fixed. This constriction does not necessarily lead to inefficiency, as the environment may remain similar for a long period, and decisions may still be as valid as in the first phase (Rothmann & Koch, 2014). However, when a business's environmental conditions alter, such as the emergence of sustainability challenges, the dominant decision pattern will most likely become inadequate and inefficient (Schreyögg et al., 2011). An organizational state of lock-in is not characterized by total rigidity, but instead, it leaves a certain degree of variance, as behavior is never completely fixed (Fortwengel & Keller, 2020; Sydow et al., 2020).

At the core of this narrowed scope of organizational activities in the second phase are self-reinforcing mechanisms. Different terms are used for these effects; however, their self-reinforcing nature is found in almost all seminal contributions to path dependence theory (Arthur, 1989; David, 1985; Garud et al., 2010; Pierson, 2000; Sydow et al., 2009; Sydow & Schreyögg, 2013; Vergne & Durand, 2010). Sydow et al. (2009) distinguish four major effects that cause positive feedback loops: coordination, complementary, learning, and adaptive expectation effects. Table 3 provides an overview of three of these self-reinforcing mechanisms with examples, as well as a description of their application to the accountants' context.

These effects have been developed and discussed in the literature dealing with inertia, rigidity, and self-reinforcing mechanisms (Schreyögg & Kliesch-Eberl, 2007; Shapiro & Varian, 1999). Related effects are, for instance, direct and indirect network effects (Katz & Shapiro, 1985; Shapiro & Varian, 1999) and economies of scope (Teece, 1980).

A fourth self-reinforcing mechanism, the complementary effect, results from synergies of interrelated activities that become more attractive each time they are combined. A number of departments may form a dominant cluster that drives the behavior of an entire organization and each time they cooperate their routines and practices become more effective. As this mechanism is mainly applicable to organizations and not individuals, who are the focus of our research, it is not considered further. According to Sydow et al. (2009), an empirical analysis does not have to cover all self-reinforcing mechanisms as not all mechanisms fit all contexts and the existence of a single self-reinforcing mechanism is sufficient to identify path dependence.

Each mechanism needs to be analyzed within its specific context of application (Sydow et al., 2009). Dobusch and Kapeller (2013) note that positive self-reinforcing mechanisms in organizations vary in intensity and pattern. Therefore, self-reinforcing mechanisms, which hinder organizational change, and their effects need to be analyzed within a specific organizational context. The next section explains the research design and methods chosen for the empirical study of barriers that could prevent the involvement of accountants with sustainability.

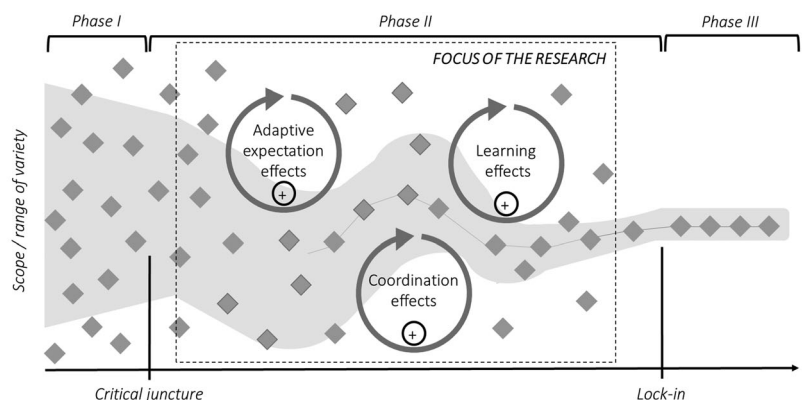


FIGURE 1 Organizational path dependence (based on Sydow et al., 2009, p. 692)

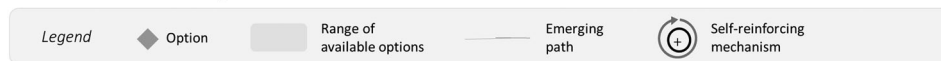


TABLE 3 Self-reinforcing mechanisms and application to the accountants' context

Self-reinforcing mechanisms	Application to the context of accountants (theses)
<i>Coordination effects</i> emerge when different organizational actors are willing to conform to the same (set of) rules. Continuous repetition most likely results in more efficient interaction among different actors, which further reinforces the dominance of this rule.	Accountants focus on financial indicators like profitability and are efficient in working with them. Given their expertise, they impose these financial rules on other business units and neglect issues related to sustainability.
<i>Adaptive expectation effects</i> describe varying preferences of individuals in response to the expectations of others. When organizational members are uncertain about their decisions, they often adopt routines or practices to meet the expectations of others.	Management accountants prioritize tasks and routines in line with the expectations of their key stakeholders (e.g., top management). When those stakeholders do not require sustainability to be considered in internal accounting reports, accountants feel affirmed in continuing to neglect sustainability.
<i>Learning effects.</i> Each iteration of a specific action or routine increases its efficiency, making it less attractive to switch to a different one. Steps leading to past success are often repeated and refined until it seems there is no other option than to continue reproducing the pattern.	Accountants execute existing routines without seriously questioning their validity. They are unwilling to learn or take on new tasks as they replicate successful routines focussed on financial outcomes. This makes it increasingly difficult for accountants to engage with sustainability.

Note: Adapted from Sydow et al., 2009.

4 | RESEARCH DESIGN

The lack of large-scale empirical studies and the complexity of investigating organizational path dependence, and as previous conceptualizations of self-reinforcing mechanisms (Dobusch & Kapeller, 2013; Sydow et al., 2009), call for a qualitative research design. In the following analysis, interviews with management accountants were conducted to understand (1) whether and what kind of self-reinforcing mechanisms hinder management accountants from involvement with sustainability management accounting and (2) what further barriers might exist. To ensure a diverse sample, the interviewees were selected based on the following characteristics: company size, industry, hierarchical position of accountants, gender, and company commitment to sustainability (high ranking or awards).

This study uses both inductive and deductive aspects for research design, data collection, and analysis. Combining both inductive and deductive approaches is common (Miles et al., 2020; Schönwälder & Weber, 2022; Siems & Seuring, 2021). In the present study, theory is used as a framework to deductively guide the research design and understanding of the sustainability accounting context. Including the theoretical framework early in the study “guides the nature of the questions asked and answered” (Creswell & Plano Clark, 2018, p. 44). Inductive approaches were used to develop the questionnaire and in the coding process to analyze further barriers. In line with Siems and Seuring (2021), we followed a clear operational structure for data collection and analysis. For further details, see the following sections on data collection and data analysis.

4.1 | Data collection

To investigate why management accountants do not contribute to corporate sustainability, 33 management accountants from German companies were interviewed in semistructured interviews, either in person (64%) or by phone (36%) if they were not available for a

personal meeting. Using different interview modes is common in research (e.g., Goodman et al., 2017). While in-person interviews can offer a view into their desktop and work environment as well as give social cues (Opdenakker, 2006), such information is not included in the following analysis. The topics were discussed in a comparable manner and scope across both interview modes. Phone interviews were only 2 min shorter on average than in-person interviews. The interviews had an average duration of 54 min, and they took place over a period of approximately 6 months in 2019.

The interview questions focused on the scope of consideration of environmental and social aspects in accounting and applying the self-reinforcing mechanisms in path dependence theory to the accounting context (including possible learning effects, adaptive expectations, and coordination effects). Interview questions were developed based on a theoretical understanding of the self-reinforcing mechanisms and a transfer of these mechanisms to a management accounting context. However, the use of additional open questions allowed space for interviewees to express other reasons for their involvement with sustainability accounting or lack thereof. The interview guide is included in the Appendix. All interviewees were assured confidentiality.

Since the understanding of corporate sustainability in this paper assumes that all accountants ought to be involved in addressing sustainability challenges within their responsibilities, this research adopts the broad understanding of the accounting function according to Carnegie et al. (2020), and hence, different types of management accountants were interviewed. The sampling strategy followed three principles following Miles et al. (2020): convenience, sequential, and purposive sampling. Initially, a convenience sampling strategy was used by approaching management accountants in companies affiliated with the researchers' universities. After conducting these interviews, it was decided to undertake sequential sampling to achieve a large variation in different characteristics, such as leadership role, gender, industry, and company size. Purposive sampling was undertaken to include management accountants not involved in sustainability accounting (typical cases) and management accountants with high,

routine involvement in sustainability accounting (exceptional cases). Of the 33 sampled accountants, 54% were in a leadership position, and 73% were male. They represented companies of varying sizes and industries: 16% from small and medium-sized companies (up to 250 employees), 52% from companies with 250 to 5000 employees, and 32% from large companies (more than 5000 employees). Of all companies in the sample, 58% were multinational companies (based on Kogut's (2001) criteria of business activities in more than two countries). In terms of industry, 24% were in the mechanical and electrical engineering sector, 18% each in logistics as well as services and trade, 15% in consumer goods, 15% in construction and chemistry, and nearly 10% in banking, insurance, and real estate.

The sample is therefore adequate to investigating why accountants in a wide range of organizational contexts fail to contribute to corporate sustainability. Table A1 in the Appendix provides an overview of the interviews including anonymized interviewee characteristics and contexts. All interviews were recorded and transcribed.

4.2 | Data analysis

Both deductive and inductive approaches were used to identify the extent to which self-reinforcing mechanisms can hinder an accountant's involvement with sustainability. Deductive coding was first completed before inductive coding was undertaken (Siems & Seuring, 2021). First, a coding scheme based on the three self-reinforcing mechanisms as described in the organizational path dependence literature was developed deductively and applied as a priori codes (Miles et al., 2020). Second, separate descriptive codes were developed to capture how each of the mechanisms might appear in the accounting context (for some examples, see Table 3). This coding scheme allowed for coding both positive instances of self-reinforcing mechanisms, as well as negative or discrepant instances indicating an absence of these mechanisms (Maxwell, 2013). The deductively developed codes were used as impulses or "sensitizing concepts" (Brinkmann & Kvale, 2015, p. 269) for the data analysis, rather than definitive concepts. Additional barriers that emerged throughout the coding process were captured inductively, first as *in vivo* codes (Saldaña, 2010), then as themes. Allowing for coding of negative instances as well as additional inductive codes was done in order to avoid an overreliance on theory and to ensure researcher openness to alternative explanations of the phenomena (Miles et al., 2020). The coding process was supported using MAXQDA software.

Validity is ensured in qualitative research by using different approaches and criteria (e.g., Creswell & Plano Clark, 2018; King et al., 2019). We follow Creswell and Plano Clark (2018), who recommend choosing at least three approaches. First, member checking involves asking interview partners to decide whether the results accurately reflect their positions (see also Miles et al., 2020). The research results were presented and discussed in a workshop with 42 management accountants, of which 36 had not been previously interviewed.

The workshop was used to gain feedback from interviewees as well as from other management accountants who were not involved in providing data and insight up to that point. This approach provided a "member check" (Miles et al., 2020, p. 303) and a "community for a dialogue on validity" (Brinkmann & Kvale, 2015, p. 285). Second, disconfirming evidence was noted and reported. Both types of statements, positive instances of self-reinforcing mechanisms and negative instances, were coded and analyzed. Both results are reported in the results section. The third approach according to Creswell and Plano Clark (2018) is to ask peers to examine the data and approaches. The data, codebook, process, and results were shown for examination to two other researchers with expertise in sustainability and accounting and who were not co-authors. They approved the process and results. Aside from these three criteria, this study also utilizes several of Miles et al.'s (2020) criteria for internal and external validity. These include a clearly characterizing a diverse sample, commenting on congruency with results from other studies, and specifying appropriate settings for further research.

Miles et al. (2020) suggest various criteria to ensure reliability throughout the whole research process. This study used the following of their criteria: stating a clear research question, conducting the data collection in settings suitable to the research question, using peer reviews, and ensuring intercoder reliability. Creswell and Plano Clark (2018) consider reliability less relevant than validity in qualitative research since subjective interpretations in the data are central to the approach. However, reliability can be achieved to a certain extent by ensuring intercoder agreement. The authors suggest the following steps to ensure intercoder agreement: establishing a codebook, simultaneous coding of the same transcript by all coders, and comparing codes. The method of this study included these three steps. Before coding, a codebook (Saldaña, 2010) was written based on the deductively developed codes. The same transcript was coded by the two coders and then compared. To ensure intercoder agreement between the two coders in subsequent transcripts, coded transcripts were discussed in weekly meetings to build consensus on the consistent use of codes (Harry et al., 2005). This process can be considered code-confirming (King et al., 2019), where coded transcripts were scrutinized by the other authors. The codebook was refined as a shared understanding of the codes emerged, leading to clearer definitions (Miles et al., 2020). After the initial coding, all interview data and codes were reviewed by one of the researchers, comparable with Schönwälder and Weber (2022).

The analysis searches for possible explanations for lack of involvement by accountants with sustainability accounting by (i) comparing similarities and (ii) comparing differences across interviews. In the first approach, statements made by a majority of accountants are denoted with "nearly all" (no more than two accountants differing) or "most" (more than 75% of the accountants agreeing). For more divergent results, the share of accountants in agreement is provided for each result. In the second approach, coded interview segments were compared for different accountant characteristics and contexts and noted in this section.

5 | RESULTS

This section summarizes briefly results on the involvement or noninvolvement of the accountants with sustainability accounting, the results on the self-reinforcing mechanisms, further barriers identified inductively, and which have not been so far discussed in path dependence theory.

The interviews reveal that most of the accountants did not deal with sustainability issues in their work (59%) or only provide ad hoc analyses for special projects like identifying cost savings from resource efficiency measures (36%). Only two accountants routinely dealt with environmental or social matters (6%) because sustainability was considered either part of the company's business strategy or unique selling proposition. Using the accountants' qualitative statements, interviewees were placed in three groups—no involvement, ad hoc involvement, and routine involvement—based on the classification of Bennett et al. (2013) (see Table A1 in the Appendix for the interviewees' characteristics including involvement with sustainability accounting).

5.1 | Coordination effects

Nearly all interviews (31/33) reveal that rules played a large role for the management accountants. When asked about criteria to evaluate the success of either specific projects or the whole company, all accountants stated financial rules like profitability, return on investment, staying within budgets, or positive contribution margins. Most interviewees (29/33) did not question the underlying assumption of the centrality of financial rules in accounting. The remaining four accountants questioned financial evaluation criteria only when fostering relationships with special or niche customers. By contrast, more than half of the accountants with whom this was discussed (19/31) viewed sustainability efforts either as irrelevant for the business's value creation or even equated them with additional costs. About three quarters of these statements came from accountants (14/19) who described themselves as not being involved with sustainability accounting, indicating a strong overlap between this mindset and a lack of involvement. Furthermore, accountants in logistics, services, and trade, as well as in construction industries, were more focused on the costs of sustainability efforts than accountants in other industries. Only four of the accountants referred to sustainability as a clear driver of revenues or as related to other opportunities beyond reputation management. Of these accountants, two worked in companies where sustainability is part of the core business strategy and the other two noted the growing relevance of sustainability criteria in their customers' purchasing decisions. All but one of them were in leadership positions. A little more than a third of the accountants (14/33) mentioned cost reductions as direct financial benefits of sustainability efforts, such as increasing fuel efficiency or improving employee retention. More than two thirds of these accountants (10/14) were involved with sustainability accounting on a routine or ad hoc basis. Interviewees with routine involvement with sustainability accounting discussed tracking sustainability performance indicators and

identifying their connection to the core business, value creation, and financial impact. Interviewees with ad hoc involvement focused on whether and how sustainability performance should be included in project-based analyses.

In line with their financial focus, a quarter of the accountants admitted that they did not collect or use nonfinancial data at all: "No, [nonfinancial data] do not exist. These are manual data collection processes and more guesswork by employees, so not hard data" (Interviewee 10). About a third of the accountants (10/33) explained that nonfinancial, social, and environmental information was demanding to work with because it was a challenge to integrate into existing software systems. An additional four accountants specified that this type of data was difficult, if not impossible, to aggregate, as the data were not easily validated and were difficult to evaluate, because causal chains were unclear or the necessary data were missing. These statements all came from accountants in medium and larger companies (more than 250 employees). Accountants in smaller companies (fewer than 250 employees) saw the challenge in funding, upgrading, and utilizing software to collect and analyze financial, social, and environmental data.

Of the accountants that stated, they collected and used nonfinancial environmental or social data, most (14/18) did so under two conditions: when the environmental or social information was related to financial outcomes or when sustainability was part of the core business strategy. Using the example of CO₂ emissions, one accountant stated:

This CO₂ story will not find its way into management accounting, but something like electricity or diesel consumption will, because these non-financial performance indicators lead to costs. ... It's not the highest priority, but ... as soon as it has financial consequences, we will take a look at it. (Interviewee 27)

In one company where sustainability was part of the core business strategy, an accountant stated that environmental and social issues were explicitly addressed in the accounting function. This accountant specifically mentioned that the United Nations Sustainable Development Goals were integrated into the company goals: "[The SDGs are] part of our goal system—and I have my hands on everything that involves a goal [laughs]" (Interviewee 23). These types of statements, connecting nonfinancial environmental or social data with the business strategy or identifying them as drivers for financial outcomes, were made more frequently by accountants in a leadership position compared to those at other hierarchical levels.

In 19/33 interviews, management accountants stated that they considered themselves in a position to impose their financial rules and priorities on other parts of the organization. They defined their tasks as ensuring data consistency within the organization, harmonizing structures and processes, and improving analytical skills in functional departments. This topic was brought up particularly by accountants in large multinational companies with more than 5000 employees. The following statement indicates how accountants can set the financial rules that steer behavior in the organization:

[Our task is] to further harmonize processes: that is, in the reporting systems, how we collect data, how the planning processes work ... and above all to have data and analytics more deeply embedded in the departments. So how to get this thinking and these methods into the organisation. (Interviewee 4)

5.2 | Adaptive expectation effects

The interviews identify adaptive expectations for management accountants regarding top management. Top management (in particular the chief executive and/or board of directors) was named in most interviews (26/33) as their most influential stakeholder. While accountants in smaller companies with less than 250 employees stated they worked closely with the director or owner, accountants in the largest companies with more than 5000 employees reported to different top management positions as well as cooperating horizontally with project managers, heads of business units, or other functional departments. Most accountants (29/33) stated that they adjusted their work behavior and the information they delivered to meet the perceived expectations and needs of their key stakeholders. This included jointly defining relevant indicators to monitor and manage corporate financial performance with top management and also discussing and adapting major changes to reporting content to comply with top management requests. One interviewee illustrated this process as follows: “As accountants, we aren't expected to produce new report ideas all the time, because management has very specific ideas and expects these to be fulfilled” (Interviewee 1).

Three quarters of the interviewees (25/33) described these processes as leading to effective workflows for both accountants and managers, particularly since accountants provide necessary information for decision-making. In these situations, accountants listened to the needs of top management and, if necessary, skillfully adjusted the requests so they made sense to the accountants and supported effective decision-making. However, nine accountants also described inefficiencies in adjusting to expectations, including manual data extractions using standard software or rushing to deliver work in response to ad hoc requests. Two accountants stated that they strictly followed management expectations, even if they did not consider this to be beneficial for the company or if it contradicted their understanding of their role and tasks:

When top management advances EBIT as an argument, then everything below is geared to EBIT ... So the company is aligned to the preferences of the man or men [sic] at the top. This has something to do with preferences and gut feeling, and not with rational thinking. (Interviewee 13)

These adaptive expectations intersect with the coordination effects described above. Three quarters of the accountants (25/33) stated explicitly that their financial focus is in line with the

expectations of top management. All accountants with whom this aspect was discussed were able to provide an answer as to whether and how sustainability is relevant to top management, although these answers varied. Accountants who saw a low relevance of sustainability for top management were either not involved in sustainability accounting, focused on efficiency analyses only, or described challenges in providing the results of their analyses. They also described the company's commitment to sustainability as rather low. Seven accountants even explicitly mentioned adapting to top management expectations as the cause for their lack of involvement with sustainability accounting, for example:

I think the [sustainability topic] is important, but in our company, it is unfortunately very dependent on the manager. If the manager does not think it's important, it is not done. That's kind of the weak spot. (Interviewee 15)

There were two instances of accountants who said that despite a lack of clear prioritization of the topic by top management, they had started to work on tracking environmental performance and proposing improvements. Both reported strong resistance to their proposals by top management, even when positive financial outcomes were identified as a result of improving environmental performance. In contrast, two accountants with a higher routine involvement with sustainability accounting stated a high relevance of sustainability for the business. They reported a shared understanding with top management of what sustainability performance indicators were relevant for evaluating the core business.

In addition to these two patterns—low relevance of sustainability connected to low involvement, and high relevance of sustainability connected to high involvement—there was a third pattern that emerged. The eight accountants that fit into this last pattern perceived a high relevance of sustainability for top management but did not perform sustainability accounting as part of their tasks. The stated reason for their low involvement was that other employees or departments were already involved in sustainability accounting. This reason is analyzed in more detail in the section on further barriers.

5.3 | Learning effects

The analysis of the interviews with accounting practitioners reveals strong routines in management accounting. Data collection, planning, and also parts of periodical reporting that focus on key performance indicators are highly standardized. For example, one accountant stated “the report as such is always identical. There are no discrepancies, we work according to standards” (Interviewee 11). Nearly half of the management accountants (15/31 with whom the topic was discussed) described existing routines even as inflexible and inefficient, an evaluation based on the perceived need to satisfy addressee expectations (8/15; e.g., reporting only on paper), the necessity to meet regulatory accounting requirements (5/15), or software

limitations (4/15). The other half of the accountants (16/31) still stated a need to adhere to standards but described routines as flexible, mostly due to software adaptability (13/16).

Despite these routines and inflexibilities, most of the accountants (26/31) stated a pressure to improve data and information quality while adhering to standards and regulations that only allow for incremental changes. Similarly, most accountants (28/33) question and update their routines regularly to continuously improve management control processes. Two thirds of the accountants (21 of 31 with whom the topic was discussed) stated that they would only adjust their reporting to manage recipient expectations with the knowledge or even approval of their key stakeholders. While accountants in leadership positions implemented changes in coordination with top management, accountants without a leadership position needed approval. Only one third of the accountants (10/31) were allowed to adjust their reports independently as long as they comply with legal regulations. This was particularly the case for ad hoc or situational analyzes or when the accountants had long experience in the firm. Their reasoning for changing routines was described by one accountant as follows:

We change the [reports] all the time. Sometimes you realize that something may not be as important as it once was, or that you need to go deeper into something. We also have changes in international accounting and reporting standards, so you have to find ways to adapt to them. That means that we are constantly changing. (Interviewee 18)

All accountants described changes in routines; however, more than two thirds of them (23/33) focused on faster and more automated data collection and analysis with the aim of incremental optimization of existing routines. For these accountants, technological advances such as process digitalization, predictive analytics, or big data played an important role. About one third of the accountants worked on leaner reporting structures with fewer indicators (11/33) and providing generally better decision-making information (12/33). While accountants in smaller companies with fewer than 250 employees discussed questioning routines in the context of new software projects, accountants in larger and multinational companies saw changes in routines in the context of digitalization, the level of detail, and external standards.

Besides changing their routines, more than two thirds of the accountants (22/30) expressed a high willingness to take on new tasks in the organization. Nearly half of them (9/22) indicated an interest in other management accounting functions, such as moving from cost accounting to cash flow accounting. Even though these statements show that two thirds of the interviewed accountants changed routines and considered taking on new tasks, fewer than a third of them said they systematically questioned the assumptions behind their work or that they envisaged a larger scope of change. Of these 10 accountants, seven questioned assumptions regarding changes to their processes due to changing markets or business strategy; the

others actively questioned the effectiveness of their reporting structure and processes. Less than a third (9/33) of the interviewees actively questioned whether environmental or social aspects should be further integrated into their data collection, planning, and reporting processes, or become a new task. Most of them (7/9) were focused on the topic of climate change—on evaluating the impact of greenhouse gas emissions or on their ability to maintain customer relationships or on the profitability of renewable energy investments. For example, one interviewee in the insurance industry described questioning the increasing role of environmental and social issues in financial investments and his involvement in a committee on sustainable investments.

Most interviewees (28/33) stated that they expected no changes in the core financial processes in the future. Of the five that did expect changes, three indicated an even stronger focus on working capital, cash flow, and economic value added. One saw an increased integration of compliance topics in their processes. Only one accountant, in the insurance industry, stated that they would change their processes by increasing their use of sustainability criteria in evaluating investments. However, when asked explicitly whether they could imagine considering sustainability in management accounting, three quarters (24/31) stated that they would be open to sustainability accounting. One interviewee stated enthusiastically:

I have always enjoyed getting into new topics. Now I am doing accounting for glasses ... Well, with potatoes I had other challenges. With climate change ... there are other drivers than for glasses, but it is always interesting to adapt to other areas. (Interviewee 17)

Additionally, all 26 accountants with whom the topic was discussed considered continuous learning in their field important, and they all had regularly attended training courses and workshops. The most frequent topics of these courses were soft skills such as project management or conflict resolution (10/26) or learning new software applications (8/26). However, when asked as an open question, none of the accountants mentioned sustainability accounting as an area of interest for future learning.

5.4 | Further barriers

An inductive approach to analyzing the interview data revealed two further barriers preventing management accountants from becoming involved with sustainability issues, which go beyond the self-reinforcing mechanisms described in the academic literature: (i) the responsibility of others for sustainability and (ii) an emotional distance to sustainability issues.

When asked directly about reasons for the limited sustainability involvement of the accounting function, most interviewees (28/33) stated that other departments such as public relations or marketing were already addressing this topic, indicating specialization as a potential barrier. In these instances, the role of other departments

included collecting, evaluating, and reporting sustainability accounting data. When asked directly, none of the accountants expressed the wish to take over the evaluation and accounting of sustainability data from another department. One third of the accountants (11/33) also stated that they did not think they could add value to sustainability accounting, and nearly all of them (10/11) stated that the reason for this is that they saw this area was well taken care of elsewhere.

A third of the accountants (11/33) made statements that portrayed sustainability as an unfamiliar topic they would prefer not to deal with. The most cited reasons were that the norms and evaluation criteria differed from financial accounting; specific topical knowledge was required, and causal chains were unclear. When asked whether accounting included sustainability, one accountant expressed relief that he was not involved in sustainability: “Fortunately not. The audit department is in charge” (Interviewee 7). Another accountant called the topic of sustainability “emotionally laden” and a topic “where you cannot win” (Interviewee 1), while another interviewee described it as qualitative compared to his usual quantitative approaches, and yet another referred to it as marketing:

There were some marketing events now and then, which provoked smiles like the ceramic mug, but well ... [sustainability] was designed as a function in its own right ... and I was comfortable with it that way. (Interviewee 3)

These types of emotional distancing statements made by 12 accountants indicated that at least a third of all interviewees (12/33) felt uneasy about sustainability issues and that they were relieved other departments were responsible for sustainability, which they considered to be outside of the core business.

6 | DISCUSSION, IMPLICATIONS, AND FURTHER RESEARCH

Research on the involvement of management accountants in corporate sustainability management has developed in three areas: reasoning why and how accountants should and could be involved, proposing a range of potential barriers to involvement, and investigating these in a selection of case studies. A broader empirical analysis of perceptions of management accountants themselves about the barriers has, however, so far been missing. Based on interviews with a diverse sample of accountants in various organizational contexts and in a broad range of companies, this qualitative study fills this gap by investigating perceived barriers preventing management accountants in corporate practice from becoming involved in sustainability management accounting. The results were validated through a “member check” (Miles et al., 2020, p. 303) in a workshop with accountants. Based on these results, this final section discusses the empirical findings on the three self-reinforcing mechanisms as possible barriers to accountants' sustainability involvement, each followed by recommendations for path-breaking. The need for further research is also discussed.

The results show that coordination effects influence management accountants to focus on rules and priorities concerning financial outcomes, while sustainability issues are only included to the extent they are perceived to be explicitly related to immediate financial outcomes. While the perceived trade-off between sustainability and financial performance reflects a limited and reactionary view of possible business cases, recent research provides a more nuanced discussion of different types of business cases of and for sustainability (e.g., Carroll & Shabana, 2010; Schaltegger & Burritt, 2018) than those identified among the interviewed accountants. Although some accountants mentioned potential reputational benefits of dealing with sustainability, most did not seem to perceive this as contributing to a (reputational) business case of sustainability and to be sufficiently important to be dealt with in the accounting department. Only accountants with stronger sustainability involvement expressed the perspective that adopting best practice sustainability measures (e.g., of energy efficiency) would create a responsible business case for sustainability. While this finding raises the question of whether “sustainability is safe in the hands of accountants” (e.g., Gray & Bebbington, 2000), this analysis highlights that self-reinforcing mechanisms may be a key explanation for blind spots that prevent management accountants from recognizing connections between sustainability and a company's core business. Our results reveal that underlying cognitive biases could indeed both reinforce rules and practices preventing accountants from becoming involved with sustainability and explain why accountants ignore or are unaware of the existence of different types of business cases for sustainability. As most of the accountants interviewed do not see a connection between sustainability and the core business, they do not integrate sustainability outcomes sufficiently in organizational rules and priorities. This connection is, however, crucial to improving sustainability performance (e.g., Egan & Tweedie, 2018; Larrinaga-Gonzalez & Bebbington, 2001). Aside from a stronger involvement with sustainability accounting, occupying a leadership position and a higher perceived company commitment to sustainability affected the type of business cases of and for sustainability that accountants discussed. Management accountants in a leadership position also made stronger connections between sustainability data and the business strategy.

The finding on the management accountants' role in co-creating and disseminating the financial rules and priorities of the organization contradict Gray et al.'s (1996) conclusions that accountants are simply rule followers. Our results provide evidence of a more proactive role that involves shaping rules, albeit often jointly with top management. Furthermore, accountants with a high level of sustainability involvement—those who see a strong connection between sustainability efforts and the core business—were able to develop and implement sustainability rules and goals.

These findings can be used for path-breaking—disrupting existing path dependences and reclaiming a wider scope of possible behaviors (Sydow et al., 2009). Sydow et al. (2020) show that actors are able to use their agency despite being influenced by self-reinforcing mechanisms. Top management and accountants would need to broaden their prevailing understanding of the relationship between

sustainability and financial goals beyond existing clichés. They could do this by conducting an analysis of relevant business cases for sustainability as well as identifying triple-win situations and resolving trade-offs. Furthermore, governments, international professional accounting, and standards organizations can contribute to changing rules and priorities within companies through the formal integration of sustainability into international accounting standards, voluntary or mandatory, and regulations.

The results show that adaptive expectation effects prevent sustainability involvement of management accountants. Adjustment to top management expectations is not a new empirical result, and given that the relationship between the interviewed accountants and top management is hierarchical (Egan & Tweedie, 2018; Mistry et al., 2014), it is rational behavior. However, the literature also shows that accountants often have difficulties in interpreting management expectations (Morales & Lambert, 2013; Wolf et al., 2020). Our research adds to the role of accountants as information gatekeepers discussed by Schaltegger and Zvezdov (2015), who suggest two possible reasons for gatekeeping: a lack of knowledge about sustainability and a fear of losing power. A finding of this study suggests an additional reason: namely, the perception that top management does not want accountants to deal with sustainability. Accountants would require a strong position and social capital—specifically, social relationships and resources (Egan & Tweedie, 2018)—to act contrary to top management expectations. The interviews show that the reason, at least in part, that accountants do not become involved with sustainability is not due to their lack of willingness “to understand sustainability issues in a constructive way” (Schaltegger & Zvezdov, 2015, p. 353) but rather that they lack power to argue against perceived management expectations. Many even explicitly stated that they would be open to engaging in sustainability accounting.

Members of an organization adopt best practices when they expect others will do so as well and they want to end up “on the side of the winners” (Sydow et al., 2009, p. 700). If top management considers sustainability relevant for the organization, it needs to communicate explicitly how sustainability is part of the core business and explicitly demand the involvement of the management accountants. However, our results also show that top management's consideration of sustainability is a necessary but not a sufficient condition for accountants to become involved in sustainability. Management also needs to make measuring sustainability performance an explicit accounting responsibility.

Recent research (Chaudhry & Amir, 2020; Gunarathne et al., 2021; Negash & Lemma, 2020) provides empirical evidence that external institutional pressures can be important drivers for sustainability and environmental management accounting. For instance, the increasing relevance of sustainability investments (e.g., Fink, 2020) could drive such a shift. To strengthen the “winning side” and enhance the involvement of accountants requires a stronger sustainability push by other stakeholders. These stakeholders include regulators, who could require sustainability due diligence in supply chains, sustainability pioneers, who lead market transformations, professional accounting organizations, who could include sustainability in their

education and training, or customers, who could demand sustainable products and services. These findings highlight also the importance of internal management expectations for accountant involvement.

Regarding learning effects, management accountants show a high willingness to optimize financial processes, as well as to learn and to take on new tasks in accounting in general, while conforming to existing standards and balancing them with efficiency goals. The identified negative instances challenge the notion of a “lack of willingness to learn” or a general self-reinforcing mechanism based on learning effects in management accounting, which was contrary to the authors' expectations. However, our findings show that learning effects still seem to be a barrier for accountants to become involved in sustainability: The scope of change they envisage for their work and the areas of learning they are interested in were limited to finance and conventional accounting. Accountants were not willing to learn how sustainability influences, or could influence, business success. This is an important barrier to learning and change as there is significant evidence demonstrating that sustainability can have a substantial business impact and strategic relevance (e.g., Carroll & Shabana, 2010; Schaltegger & Burritt, 2018).

Based on earlier studies, one would expect accountants to strongly resist learning and changing routines (Gray et al., 1995). While routines do indeed play an essential role in accounting, the findings of this study provide evidence that although accountants are willing to question and change routines, with some variation depending on leadership position and company size, this is mostly limited to incrementally optimizing existing financially oriented processes. Several accountants interviewed were found to engage in single-loop learning (e.g., Agyris, 2005; Van Grinsven & Visser, 2011), regarding both sustainability and financial aspects, for example, when they identify the cost-saving measures of sustainability projects or when they support the sustainability department in analyzing data more efficiently. By contrast, double-loop learning questions, in this case, the purpose of work and being willing to subsequently modify rules. Here mental models, norms, and policies are questioned and changed, a process that is particularly important in a changing environment (van Grinsven & Visser, 2011), as well as for the transformational change needed for sustainable development (e.g., Mitchell et al., 2012). However, fewer than a third of all accountants questioned their attitudes and underlying assumptions regarding sustainability and financial outcomes and thus engaged in double-loop learning. This lack of questioning and changing routines related to sustainability links our findings to previous research that accountants might not have a sufficiently innovative mindset to integrate sustainability into their tasks and responsibilities (e.g., Bebbington et al., 1994; Bebbington & Larrinaga, 2014; Egan & Tweedie, 2018).

Several authors suggest that more sustainability-related training is needed (e.g., Parker, 2000; Schaltegger & Zvezdov, 2015; Spence et al., 2012). However, since many accountants do not identify sustainability accounting as an area that is relevant to the core business or the accounting function, such calls for sustainability training might be futile. Learning about sustainability accounting requires that accountants be convinced that expertise on this topic is expected of

them by management and that it is an important part of their responsibilities and expertise. Critical analysis of the interviews reveals these interlinkages among the self-reinforcing mechanisms. The interview data show that coordination effects are influenced by adaptive expectation effects, which shape rules and priorities, and that learning effects limit double-loop learning regarding sustainability. Since top management expectations and business rules do not involve sustainability, management accountants do not consider it worthwhile to learn about sustainability or consider it part of their responsibility. Thus, our findings show that these three self-reinforcing mechanisms are interlinked, leading to stabilization and reinforcement of all three self-reinforcing mechanisms. The interlinkages among individual self-reinforcing mechanisms thus create a “dominant action pattern” (Sydow et al., 2009, p. 691) in the second phase of organizational path dependence. These interlinkages between coordination, learning effects, and adaptive expectations underline that path dependence cannot be broken down in isolated efforts but needs to be addressed comprehensively. Sustainability accounting and its tools as well as learning how to identify and create business cases for sustainability should become standard topics in management accounting curricula. The aim should be to foster the perception that corporate sustainability is part of the core business and measuring its performance is a relevant area of expertise for accountants.

Further barriers identified in inductive analysis include evidence that the mindset of accountants, in particular an emotional distance to sustainability, is a barrier that prevents them from further engaging with sustainability. Sydow et al. (2009) argue that self-reinforcing patterns can also stem from emotional reactions. Indeed, in our sample some accountants stated their wish to not become involved with sustainability, a topic they considered outside their role and responsibilities, some even citing emotional reasons. This mental positioning of sustainability issues as “other” could be rooted in a fear of the complexities and uncertainties that sustainability issues can involve. However, accountants in our research denied this was the barrier keeping them from sustainability accounting. The interviewees rather stated that specialization was the reason.

The interview results provide evidence that specialization as a new self-reinforcing mechanism hinders accountants in organizations from more effectively engaging with sustainability. Such a division of labor is widely recognized in management theory, including as an organizational form of bureaucracy (Weber, 2007). Several interview statements correspond with Weber's ideas of specialization, technical competence, defined responsibilities, rules, and professionalism. The interviewees saw sustainability accounting as a specialization outside of the accounting function. While such a division of labor can increase efficiency, it also entails the danger that larger, more complex topics such as sustainability are neglected in the accounting function. This is particularly relevant for corporate sustainability if a contribution to sustainable development is considered part of the core business and corporate purpose. The argument of specialization defies this call for integration.

The finding that specialization is a self-reinforcing mechanism represents a novel contribution to the organizational path

dependence literature. The results of this research reveal that division of labor and responsibilities can act as a self-reinforcing mechanism that creates a barrier for accountants to become involved with sustainability, as other specialists (e.g., sustainability, public relations or marketing managers) are considered responsible. The perception that each specialist should stay in their own sphere of competence may create a barrier stronger than any wish from accountants or plea from top management to become more involved with sustainability. The specialization barrier highlights the key relevance of top management to not just integrate sustainability into corporate strategy but also to change the organizational structures, responsibilities, and incentives accordingly.

This study has some methodological limitations, which can be addressed in future research. The interviews were conducted solely with management accountants, and do not include the viewpoints of top managers or other employees in the organization. When talking to accountants about their “expectations of expectations” (Sydow et al., 2009, p. 701) of top management, the study did not triangulate the results with statements by top management. Further research could profitably compare the perspectives of accountants with those of top management. Also, while different characteristics and contexts of the management accountants were considered in the results, not all background variables were covered. In particular, prior education, family life, closely held values, and religious perspectives might affect the interviewees' perspectives on sustainability and power relationships to top management. This study also focuses on management accountants in a German context; future research could interview accountants from other countries to compare different cultural, educational, and regulatory influences on the accountant's involvement. Finally, the data in this study provide a static snapshot view of the experiences of accountants. Further research should investigate the magnitude and interactions of these mechanisms in quantitative and longitudinal studies showing how path dependences evolve over time and how they can be overcome.

Following the arguments by Malmi and Granlund (2009) that the purpose of management accounting research and theory should be to inform and guide practice, this qualitative empirical research identifies key barriers preventing management accountants from becoming more involved in sustainability accounting and contributing to corporate sustainability. By widening their view of possible business cases for sustainability and by questioning their assumptions about sustainability, management accountants can identify opportunities beyond cost savings. However, our findings show that to increase sustainability involvement of management accountants, top management needs to set explicit business goals for sustainability, and to change organizational structures, responsibilities, and incentives to drive transformative change.

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CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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REFERENCES

- Adams, C. A. (2002). Internal organisational factors influencing corporate social and ethical reporting. *Accounting, Auditing & Accountability Journal*, 15(2), 223–250. <https://doi.org/10.1108/09513570210418905>
- Agyris, C. (2005). Double-loop learning in organizations: A theory of action perspective. In K. G. Smith & M. A. Hitt (Eds.), *Great minds in management: The process of theory development* (pp. 261–279). Oxford University Press.
- Albelda, E. (2011). The role of management accounting practices as facilitators of the environmental management. *Sustainability Accounting, Management and Policy Journal*, 2(1), 76–100. <https://doi.org/10.1108/20408021111162137>
- Anfara, V. A., & Mertz, N. T. (Eds.). (2015). *Theoretical frameworks in qualitative research* (2nd ed.). SAGE.
- Arjaliès, D. L., & Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, 24(4), 284–300. <https://doi.org/10.1016/j.mar.2013.06.003>
- Arthur, W. B. (1989). Competing technologies, increasing returns, and lock-in by historical events. *The Economic Journal*, 99(394), 116–131. <https://doi.org/10.2307/2234208>
- Arthur, W. B. (1994). Increasing returns and path dependence in the economy. In *Economics, cognition, and society*. University of Michigan Press. <https://doi.org/10.3998/mpub.10029>
- Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2022). Green intellectual capital and environmental management accounting: Natural resource orchestration in favor of environmental performance. *Business Strategy and the Environment*, 31(1), 76–93. <https://doi.org/10.1002/bse.2875>
- Bebbington, J., Gray, R., Thomson, I., & Walters, D. (1994). Accountants' attitudes and environmentally-sensitive accounting. *Accounting and Business Research*, 24(94), 109–120. <https://doi.org/10.1080/00014788.1994.9729470>
- Bebbington, J., & Larrinaga, C. (2014). Accounting and sustainable development: An exploration. *Accounting, Organizations and Society*, 39(6), 395–413. <https://doi.org/10.1016/j.aos.2014.01.003>
- Bennett, M., Schaltegger, S., & Zvezdov, D. (2013). *Exploring corporate practices in management accounting for sustainability*. Institute for Chartered Accountants of England and Wales (ICAEW). Retrieved from <http://www.icaew.com/en/products/sustainable-business/exploring-corporate-practices-in-management-accounting-for-sustainability>
- Beske, F., Hausteijn, E., & Lorson, P. C. (2020). Materiality analysis in sustainability and integrated reports. *Sustainability Accounting, Management and Policy Journal*, 11(1), 162–186. <https://doi.org/10.1108/SAMPJ-12-2018-0343>
- Bougen, P. D. (1994). Joking apart: The serious side to the accountant stereotype. *Accounting, Organizations and Society*, 19(3), 319–335. [https://doi.org/10.1016/0361-3682\(94\)90039-6](https://doi.org/10.1016/0361-3682(94)90039-6)
- Brinkmann, S., & Kvale, S. (2015). *Interviews: Learning the craft of qualitative research interviewing* (3rd ed.). SAGE.
- Burns, J., & Baldvinsdottir, G. (2005). An institutional perspective of accountants' new roles – The interplay of contradictions and praxis. *The European Accounting Review*, 14(4), 725–757. <https://doi.org/10.1080/09638180500194171>
- Burritt, R. L. (2004). Environmental management accounting: Roadblocks on the way to the green and pleasant land. *Business Strategy and the Environment*, 13(1), 13–32. <https://doi.org/10.1002/bse.379>
- Burritt, R. L., Hahn, T., & Schaltegger, S. (2002). Towards a comprehensive framework for environmental management accounting - links between business actors and environmental management accounting tools. *Australian Accounting Review*, 12(28), 39–50. <https://doi.org/10.1111/j.1835-2561.2002.tb00202.x>
- Burritt, R. L., & Schaltegger, S. (2010). Sustainability accounting and reporting: Fad or trend? *Accounting, Auditing & Accountability Journal*, 23(7), 829–846. <https://doi.org/10.1108/09513571011080144>
- Burritt, R. L., Schaltegger, S., & Zvezdov, D. (2011). Carbon management accounting: Explaining practice in leading German companies. *Australian Accounting Review*, 21(1), 80–98. <https://doi.org/10.1111/j.1835-2561.2010.00121.x>
- Byrne, S., & Pierce, B. (2007). Towards a more comprehensive understanding of the roles of management accountants. *The European Accounting Review*, 16(3), 469–498. <https://doi.org/10.1080/09638180701507114>
- Carnegie, G., Parker, L., & Tsahuridu, E. (2020). It's 2020: What is accounting today? *Australian Accounting Review*, 31(1), 65–73. <https://doi.org/10.1111/auar.12325>
- Caron, M.-A., & Fortin, A. (2014). Accountants' construction of CSR competencies and commitment. *Sustainability Accounting, Management and Policy Journal*, 5(2), 172–196. <https://doi.org/10.1108/SAMPJ-03-2013-0013>
- Carroll, A. B., & Shabana, K. M. (2010). The business case for corporate social responsibility: A review of concepts, research and practice. *International Journal of Management Reviews*, 12(1), 85–105. <https://doi.org/10.1111/j.1468-2370.2009.00275.x>
- Chaudhry, N. I., & Amir, M. (2020). From institutional pressure to the sustainable development of firm: Role of environmental management accounting implementation and environmental proactivity. *Business Strategy and the Environment*, 29(8), 3542–3554. <https://doi.org/10.1002/bse.2595>
- CIMA. (2005). *Management accounting official terminology* (2nd ed.). CIMA Exam Support Books. Elsevier professional. Retrieved from <http://gbv.ebib.com/patron/FullRecord.aspx?p=334023>
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
- David, P. A. (1985). Clio and the economics of QWERTY. *American Economic Review*, 75, 332–337.
- Deegan, C. (2013). The accountant will have a central role in saving the planet ... really? A reflection on 'green accounting and green eyeshades twenty years later'. *Critical Perspectives on Accounting*, 24(6), 448–458. <https://doi.org/10.1016/j.cpa.2013.04.004>
- Dobusch, L., & Kapeller, J. (2013). Breaking new paths: Theory and method in path dependence research. *Schmalenbach Business Review*, 65(3), 288–311. <https://doi.org/10.1007/BF03396859>
- Egan, M., & Tweedie, D. (2018). A "green" accountant is difficult to find. *Accounting, Auditing & Accountability Journal*, 31(6), 1749–1773. <https://doi.org/10.1108/AAAJ-03-2017-2891>
- European Commission. (2020, June 22). Regulation (EU) 2020/852 of the European Parliament and of the council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending regulation (EU) 2019/2088. Brussels: European Commission. Retrieved from European Commission website: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32020R0852>

- Ferreira, A., Moulang, C., & Hendro, B. (2010). Environmental management accounting and innovation: an exploratory analysis. *Accounting, Auditing & Accountability Journal*, 23(7), 920–948. <https://doi.org/10.1108/09513571011080180>
- Fink, L. (2020). A fundamental reshaping of finance: Letter to CEOs. In *Chairman and chief executive officer*. Blackrock. Retrieved from <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>
- Fortwengel, J., & Keller, A. (2020). Agency in the face of path dependence: How organizations can regain scope for maneuver. *Business Research*, 13(3), 1169–1201. <https://doi.org/10.1007/s40685-020-00118-w>
- Garud, R., Kumaraswamy, A., & Karnøe, P. (2010). Path dependence or path creation? *Journal of Management Studies*, 47(4), 760–774. <https://doi.org/10.1111/j.1467-6486.2009.00914.x>
- Goodman, J., Korsunova, A., & Halme, M. (2017). Our collaborative future: Activities and roles of stakeholders in sustainability-oriented innovation. *Business Strategy and the Environment*, 26(6), 731–753. <https://doi.org/10.1002/bse.1941>
- Gray, R., & Bebbington, J. (2000). Environmental accounting, managerialism and sustainability: Is the planet safe in the hands of business and accounting? *Advances in Environmental Accounting and Management*, 1, 1–44.
- Gray, R., Owen, D., & Adams, C. A. (1996). *Accounting & accountability: Changes and challenges in corporate social and environmental reporting*. Prentice Hall.
- Gray, R., Walters, D., Bebbington, J., & Thompson, I. (1995). The greening of enterprise: An exploration of the (NON) role of environmental accounting and environmental accountants in organizational change. *Critical Perspectives on Accounting*, 6(3), 211–239. <https://doi.org/10.1006/cpac.1995.1021>
- Guenther, E., Endrikat, J., & Guenther, T. W. (2016). Environmental management control systems: A conceptualization and a review of the empirical evidence. *Journal of Cleaner Production*, 136, 147–171. <https://doi.org/10.1016/j.jclepro.2016.02.043>
- Gunaratne, A. N., Lee, K. H., & Hitigala Kaluarachchilage, P. K. (2021). Institutional pressures, environmental management strategy, and organizational performance: The role of environmental management accounting. *Business Strategy and the Environment*, 30(2), 825–839. <https://doi.org/10.1002/bse.2656>
- Harry, B., Sturges, K. M., & Klingner, J. K. (2005). Mapping the process: An exemplar of process and challenge in grounded theory analysis. *Educational Researcher*, 34(2), 3–13. <https://doi.org/10.3102/0013189X034002003>
- Hartmann, F. G., & Maas, V. S. (2010). Why business unit controllers create budget slack: Involvement in management, social pressure, and Machiavellianism. *Behavioral Research in Accounting*, 22(2), 27–49. <https://doi.org/10.2308/bria.2010.22.2.27>
- Hoang, T. (2018). The role of the integrated reporting in raising awareness of environmental, social and corporate governance (ESG) performance. In S. Seifi & D. Crowther (Eds.), *Stakeholders, Governance and Responsibility Developments in Corporate Governance and Responsibility* (Vol. 14, pp. 47–69). Emerald Publishing.
- IIRC. (2021). International <IR> framework. Retrieved from International Integrated Reporting Council (IIRC). London: International Integrated Reporting Council (IIRC). website: <https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf>
- Jack, L., & Kholeif, A. (2008). Enterprise resource planning and a contest to limit the role of management accountants: A strong structuration perspective. *Accounting Forum*, 32(1), 30–45. <https://doi.org/10.1016/j.accfor.2007.11.003>
- Karlsson, B., Hersinger, A., & Kurkkio, M. (2019). Hybrid accountants in the age of the business partner: Exploring institutional drivers in a mining company. *Journal of Management Control*, 30(2), 185–211. <https://doi.org/10.1007/s00187-019-00280-1>
- Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. *The American Economic Review*, 75(3), 424–440.
- King, N., Horrocks, C., & Brooks, J. M. (2019). *Interviews in qualitative research* (2nd ed.). SAGE.
- Koch, J. (2011). Inscribed strategies: Exploring the organizational nature of strategic lock-in. *Organization Studies*, 32(3), 337–363. <https://doi.org/10.1177/0170840610397486>
- Kogut, B. (2001). Multinational Corporations. In N. J. Smelser & P. B. Baltes (Eds.), *International encyclopedia of the social & behavioral sciences* (pp. 10197–10204). Elsevier.
- Kwaky, T. O., Welbeck, E. E., Owusu, G. M. Y., & Anokye, F. K. (2018). Determinants of intention to engage in Sustainability Accounting & Reporting (SAR): The perspective of professional accountants. *International Journal of Corporate Social Responsibility*, 3(1), 1–13. <https://doi.org/10.1186/s40991-018-0035-2>
- Lambert, C., & Sponem, S. (2011). Roles, authority and involvement of the management accounting function: A multiple case-study perspective. *The European Accounting Review*, 9, 1–25. <https://doi.org/10.1080/09638180.2011.629415>
- Larrinaga-Gonzalez, C., & Bebbington, J. (2001). Accounting change or institutional appropriation? A case study of the implementation of environmental accounting. *Critical Perspectives on Accounting*, 12(3), 269–292. <https://doi.org/10.1006/cpac.2000.0433>
- Lovell, H., & MacKenzie, D. (2011). Accounting for carbon: The role of accounting professional organisations in governing climate change. *Antipode*, 43(3), 704–730. <https://doi.org/10.1111/j.1467-8330.2011.00883.x>
- Luther, R., Jones, T. C., & Saxl, A. (2010). *Experiencing change in German controlling. Management Accounting a Globalized World*. CIMA Publishing, Elsevier Ltd.
- Maas, K., Schaltegger, S., & Crutzen, N. (2016). Integrating corporate sustainability assessment, management accounting, control, and reporting. *Journal of Cleaner Production*, 136, 237–248. <https://doi.org/10.1016/j.jclepro.2016.05.008>
- Mahoney, J. (2000). Path dependence in historical sociology. *Theory and Society*, 29(4), 507–548. <https://doi.org/10.1023/A:1007113830879>
- Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research*, 19(4), 287–300. <https://doi.org/10.1016/j.mar.2008.09.003>
- Malmi, T., & Granlund, M. (2009). In search of management accounting theory. *The European Accounting Review*, 18(3), 597–620. <https://doi.org/10.1080/09638180902863779>
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed., Vol. 41). Applied social research methods series. SAGE.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (fourth edition, international student ed.). SAGE.
- Mistry, V., Sharma, U., & Low, M. (2014). Management accountants' perception of their role in accounting for sustainable development. *Pacific Accounting Review*, 26(1/2), 112–133. <https://doi.org/10.1108/PAR-06-2013-0052>
- Mitchell, M., Curtis, A., & Davidson, P. (2012). Can triple bottom line reporting become a cycle for “double loop” learning and radical change? *Accounting, Auditing & Accountability Journal*, 25(6), 1048–1068. <https://doi.org/10.1108/09513571211250242>
- Morales, J., & Lambert, C. (2013). Dirty work and the construction of identity: An ethnographic study of management accounting practices. *Accounting, Organizations and Society*, 38(3), 228–244. <https://doi.org/10.1016/j.aos.2013.04.001>
- Naranjo Tuesta, Y., Crespo Soler, C., & Ripoll Feliu, V. (2021). Carbon management accounting and financial performance: Evidence from the European Union emission trading system. *Business Strategy and the Environment*, 30(2), 1270–1282. <https://doi.org/10.1002/bse.2683>

- Negash, M., & Lemma, T. T. (2020). Institutional pressures and the accounting and reporting of environmental liabilities. *Business Strategy and the Environment*, 29(5), 1941–1960. <https://doi.org/10.1002/bse.2480>
- Oesterreich, T. D., & Teuteberg, F. (2019). The role of business analytics in the controllers and management accountants' competence profiles. *Journal of Accounting and Organizational Change*, 15(2), 330–356. <https://doi.org/10.1108/JAOC-10-2018-0097>
- Opendakker, R. (2006). *Advantages and disadvantages of four interview techniques in qualitative research*. Forum qualitative sozialforschung/-forum: Qualitative Social Research, 7(4). <https://doi.org/10.17169/fqs-7.4.175>
- Parker, L. D. (2000). Green strategy costing: Early days. *Australian Accounting Review*, 10(20), 46–55. <https://doi.org/10.1111/j.1835-2561.2000.tb00054.x>
- Parker, L. D. (2001). Back to the future: The broadening accounting trajectory. *The British Accounting Review*, 33(4), 421–453. <https://doi.org/10.1006/bare.2001.0173>
- Parker, L. D. (2011). Twenty-one years of social and environmental accountability research: A coming of age. *Accounting Forum*, 35(1), 1–10. <https://doi.org/10.1016/j.accfor.2010.11.001>
- Pierce, B., & O'Dea, T. (2003). Management accounting information and the needs of managers. *The British Accounting Review*, 35(3), 257–290. [https://doi.org/10.1016/S0890-8389\(03\)00029-5](https://doi.org/10.1016/S0890-8389(03)00029-5)
- Pierson, P. (2000). Increasing returns, path dependence, and the study of politics. *American Political Science Review*, 94(02), 251–267. <https://doi.org/10.2307/2586011>
- Pittroff, E. (2021). The legitimacy of global accounting rules: A note on the challenges from path-dependence theory. *Journal of Management and Governance*, 25(2), 379–396. <https://doi.org/10.1007/s10997-020-09546-6>
- Rothmann, W., & Koch, J. (2014). Creativity in strategic lock-ins: The newspaper industry and the digital revolution. *Technological Forecasting and Social Change*, 83, 66–83. <https://doi.org/10.1016/j.techfore.2013.03.005>
- Rowlinson, M., Hassard, J., & Decker, S. (2014). Research strategies for organizational history: A dialogue between historical theory and organization theory. *Academy of Management Review*, 39(3), 250–274. <https://doi.org/10.5465/amr.2012.0203>
- Saldaña, J. (2010). *The coding manual for qualitative researchers*. SAGE Publications Ltd.
- Saldaña, J. (2015). *Thinking qualitatively: Methods of mind*. SAGE.
- Schaltegger, S. (2018). Linking environmental management accounting: A reflection on (missing) links to sustainability and planetary boundaries. *Social and Environmental Accountability Journal*, 38(1), 19–29. <https://doi.org/10.1080/0969160X.2017.1395351>
- Schaltegger, S., & Burritt, R. L. (2010). Sustainability accounting for companies: Catchphrase or decision support for business leaders? *Journal of World Business*, 45(4), 375–384. <https://doi.org/10.1016/j.jwb.2009.08.002>
- Schaltegger, S., & Burritt, R. L. (2018). Business cases and corporate engagement with sustainability: Differentiating ethical motivations. *Journal of Business Ethics*, 147(2), 241–259. <https://doi.org/10.1007/s10551-015-2938-0>
- Schaltegger, S., & Zvezdov, D. (2015). Gatekeepers of sustainability information: Exploring the roles of accountants. *Journal of Accounting and Organizational Change*, 11(3), 333–361. <https://doi.org/10.1108/JAOC-10-2013-0083>
- Schaltegger, S., Burritt, R. L., Zvezdov, D., Hörisch, J., & Tingey-Holyoak, J. (2015). Management roles and sustainability information. Exploring corporate practice. *Australian Accounting Review*, 25(4), 328–345. <https://doi.org/10.1111/auar.12102>
- Schaltegger, S., Windolph, S., Harms, D., & Hörisch, J. (Eds.). (2014). *Corporate sustainability in international comparison: State of practice, opportunities and challenges*. Springer.
- Schönwälder, J., & Weber, A. (2022). Maturity levels of sustainable corporate entrepreneurship: The role of collaboration between a firm's corporate venture and corporate sustainability departments. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.3085>
- Schreyögg, G., & Kliesch-Eberl, M. (2007). How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization. *Strategic Management Journal*, 28(9), 913–933. <https://doi.org/10.1002/smj.613>
- Schreyögg, G., Sydow, J., & Holtmann, P. (2011). How history matters in organisations: The case of path dependence. *Management and Organizational History*, 6(1), 81–100. <https://doi.org/10.1177/1744935910387030>
- Shapiro, C., & Varian, H. R. (1999). *Information rules: A strategic guide to the network economy* ([reprint]). Harvard Business School Press.
- Siems, E., & Seuring, S. (2021). Stakeholder management in sustainable supply chains: A case study of the bioenergy industry. *Business Strategy and the Environment*, 30(7), 3105–3119. <https://doi.org/10.1002/bse.2792>
- Simons, R. (1994). *Lever of control: How managers use innovative control systems to drive strategic renewal*. Harvard Business Press.
- Spence, L. L., Agyemang, G., & Rinaldi, L. (2012). *Environmental aspects of sustainability: SMEs and the role of the accountant: Research report 128*. University of St Andrews. Retrieved from The Council of the Association of Chartered Certified Accountants website: <https://research-repository.st-andrews.ac.uk/bitstream/handle/10023/3776/ACCA-2012-SMEs-Role-Accountant.pdf?sequence=1&isAllowed=y>
- Sydow, J., & Schreyögg, G. (2013). *Self-reinforcing processes in and among organizations*. Palgrave Macmillan UK. <https://doi.org/10.1057/9780230392830>
- Sydow, J., Schreyögg, G., & Koch, J. (2009). Organizational path dependence: Opening the black box. *Academy of Management Review*, 34(4), 689–709. <https://doi.org/10.5465/AMR.2009.44885978>
- Sydow, J., Schreyögg, G., & Koch, J. (2020). On the theory of organizational path dependence: Clarifications, replies to objections, and extensions. *Academy of Management Review*, 45(4), 717–734.
- Teece, D. J. (1980). Economies of scope and the scope of the enterprise. *Journal of Economic Behavior & Organization*, 1(3), 223–247. [https://doi.org/10.1016/0167-2681\(80\)90002-5](https://doi.org/10.1016/0167-2681(80)90002-5)
- Traxler, A. A., Schrack, D., & Greiling, D. (2020). Sustainability reporting and management control – A systematic exploratory literature review. *Journal of Cleaner Production*, 276, 122725. <https://doi.org/10.1016/j.jclepro.2020.122725>
- Van Grinsven, M., & Visser, M. (2011). Empowerment, knowledge conversion and dimensions of organizational learning. *The Learning Organization*, 18(5), 378–391. <https://doi.org/10.1108/0969647111151729>
- Vergne, J.-P., & Durand, R. (2010). The missing link between the theory and empirics of path dependence: Conceptual clarification, testability issue, and methodological implications. *Journal of Management Studies*, 47(4), 736–759. <https://doi.org/10.1111/j.1467-6486.2009.00913.x>
- Wang, S., Wang, H., & Wang, J. (2019). Exploring the effects of institutional pressures on the implementation of environmental management accounting: Do top management support and perceived benefit work? *Business Strategy and the Environment*, 28(1), 233–243. <https://doi.org/10.1002/bse.2252>
- Weber, M. (2007). *Economy and society: An outline of interpretive sociology* (2nd volume set ed.). Univ. of California Press.

- Wenzel, M. (2015). Path dependence and the stabilization of strategic premises: How the funeral industry buries itself. *Business Research*, 8(2), 265–299. <https://doi.org/10.1007/s40685-015-0021-4>
- Williams, B. (2015). The local government accountants' perspective on sustainability. *Sustainability Accounting, Management and Policy Journal*, 6(2), 267–287. <https://doi.org/10.1108/SAMPJ-07-2014-0043>
- Wilmshurst, T. D., & Frost, G. R. (2001). The role of accounting and the accountant in the environmental management system. *Business Strategy and the Environment*, 10(3), 135–147. <https://doi.org/10.1002/bse.283>
- Wolf, T., Kuttner, M., Feldbauer-Durstmüller, B., & Mitter, C. (2020). What we know about management accountants' changing identities and roles – A systematic literature review. *Journal of Accounting and Organizational Change*, 16(3), 311–347. <https://doi.org/10.1108/JAOC-02-2019-0025>

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APPENDIX A

A.1 | Interview guideline

This guideline was translated from German. As it is common in semistructured interviews, the order and questions asked in each interview varied. The interview also consisted of an introductory phase, additional follow-up questions not included here (such as asking for examples or further explanations), and some closing questions.

- What are your main tasks at the moment?
 - Who are your main stakeholders? Who do you report to?
 - How easy or difficult is it for you to fundamentally reorganize or rethink any recurring tasks? How do you involve your key stakeholders in these processes?
 - What is your role when working with top management (or other key stakeholders)?
 - To what extent does your work in management accounting influence decision-making in your company?
 - What changes in the tasks of a management accountant do you expect in the next five years and how are you preparing for these changes?
 - What types of external or internal forms of learning and continuing education do you attend? What are the main topics?
- Could you imagine taking on new areas of responsibility and familiarizing yourself with new areas of work? What kind of areas would they be?
 - To what extent and for what purposes are non-financial data and key figures collected and used in your company's management control systems?
 - To what extent do you think that top management takes sustainability into account when making decisions? How does this show in your work as a management accountant?
 - To what extent and for what purposes are environmental and social data and key figures collected and used in your company's management accounting?
 - Do you also work with or exchange data and information from environmental or sustainability management?
 - To what degree can you imagine collecting and analyzing environmental and social data?
 - To what extent do you think that closer or less close cooperation between management accounting and sustainability management would be beneficial for the company?
 - In your opinion, what are the reasons why management accounting has not had any involvement with environmental and social sustainability to date?

TABLE A1 Overview of interviews

No.	Job Title ^a	Leadership role	Gender	Involvement with sustainability accounting ^b	Relevance of sustainability for company ^b	Industry	Company size (no. of employees)	Multinational company ^f	Date of interview	Interview modus	Length (minutes)
1	Controller	No	Male	No	High	Mechanical and electrical engineering	250–5000	Yes	02/28/2019	By phone	75
2	R&D Controller	No	Male	No	High	Mechanical and electrical engineering	More than 5000	Yes	03/17/2019	In person	45
3	Controller	No	Female	Ad hoc	Low	Services and trade	Less than 250	No	03/20/2019	In person	50
4	Head of Controlling	Yes	Male	No	Medium	Services and trade	More than 5000	Yes	04/08/2019	In person	55
5	Head of Group Controlling	Yes	Male	No	High	Consumer goods	More than 5000	Yes	04/24/2019	In person	60
6	Assistant Director Controlling	Yes	Male	No	Medium	services and trade	250–5000	No	04/29/2019	By phone	38
7	Head of Controlling	Yes	Male	No	Medium	Construction and chemistry	250–5000	No	04/30/2019	In person	52
8	Head of Controlling	Yes	Male	No	Medium	Construction and chemistry	250–5000	Yes	05/03/2019	In person	32
9	Controller	No	Male	Ad hoc	Low	Mechanical and electrical engineering	Less than 250	No	05/08/2019	In person	45
10	Marketing Controlling	No	Female	No	Medium	Mechanical and electrical engineering	250–5000	Yes	05/13/2019	By phone	45
11	Head of Controlling	Yes	Male	No	Low	Construction and chemistry	250–5000	No	05/15/2019	In person	70
12	Performance Controlling	Yes	Female	Ad hoc	Medium	Mechanical and electrical engineering	More than 5000	Yes	05/17/2019	In person	42
13	VP of Finance and Controlling	Yes	Male	No	Medium	Mechanical and electrical engineering	More than 5000	Yes	05/17/2019	By phone	103
14	M&A Controlling	No	Male	No	High	Banking, insurance, and real estate	Less than 250	No	05/20/2019	In person	43

(Continues)

TABLE A1 (Continued)

No.	Job Title ^a	Leadership role	Gender	Involvement with sustainability accounting ^b	Relevance of sustainability for company ^b	Industry	Company size (no. of employees)	Multinational company ^c	Date of interview	Interview modus	Length (minutes)
15	Controller	No	Male	Ad hoc	Medium	Mechanical and electrical engineering	Less than 250	No	05/21/2019	In person	82
16	Controller	No	Male	No	Medium	Construction and chemistry	250–5000	No	05/22/2019	By phone	45
17	Head of Operative Controlling	Yes	Female	No	High	Consumer goods	More than 5000	Yes	05/27/2019	In person	63
18	Group Controlling	No	Female	No	High	Consumer goods	250–5000	Yes	05/29/2019	In person	23
19	VP of Finance and Controlling	Yes	Male	Routine	High	Consumer goods	250–5000	No	05/29/2019	In person	67
20	Head of Controlling	Yes	Female	No	Low	Construction and chemistry	250–5000	Yes	06/04/2019	In person	52
21	Team leader Controlling	Yes	Female	Ad hoc	High	Consumer goods	250–5000	Yes	06/05/2019	By phone	23
22	Head of Controlling and Risk Management	Yes	Male	Ad hoc	HIGH	Banking, insurance, and real estate	250–5000	Yes	06/06/2019	In person	68
23	Head of Controlling	Yes	Male	Routine	High	Services and trade	250–5000	No	06/07/2019	By phone	57
24	Controller	No	Male	Ad hoc	High	Logistics	250–5000	Yes	06/11/2019	By phone	44
25	Business Unit Controller	No	Male	Ad hoc	Medium	Logistics	More than 5000	Yes	06/18/2019	In person	35
26	Inventory Controlling	No	Female	Ad hoc	High	Logistics	More than 5000	Yes	06/18/2019	By phone	38
27	VP of Finance and Purchasing	Yes	Male	Ad hoc	High	Logistics	250–5000	No	06/19/2019	In person	70
28	Controlling	No	Male	Ad hoc	High	Logistics	250–5000	No	06/19/2019	In person	70
29	Area Manager Controlling	Yes	Female	No	Medium	Logistics	More than 5000	Yes	06/21/2019	By phone	60
30	VP of Finance and Controlling	Yes	Male	No	Medium	Services and trade	Less than 250	No	06/25/2019	In person	85

TABLE A1 (Continued)

No.	Job Title ^a	Leadership role	Gender	Involvement with sustainability accounting ^b	Relevance of sustainability for company ^b	Industry	Company size (no. of employees)	Multinational company ^c	Date of interview	Interview modus	Length (minutes)
31	Group Leader Controlling	Yes	Male	No	High	Services and trade	More than 5000	Yes	07/23/2019	By phone	60
32	Head Office Controlling	No	Male	Ad hoc	High	Banking, insurance, and real estate	250–5000	No	07/23/2019	By phone	49
33	Group Controlling	Yes	Male	No	High	Mechanical and electrical engineering	More than 5000	Yes	09/20/2019	In person	53

^aControlling and controller as part of the job title were not translated.

^bCategorized based on statements by interviewed management accountants.

^cThe multinational company definition is based on Kogut's (2001) criteria of having business activities in more than two countries.