

Research on extended external reporting assurance: An update on recent developments

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Abstract

We review the recent literature on the assurance of Extended External Reporting published since the review published in 2021 in the *Journal of International Financial Management & Accounting*. Our review includes 50 articles published between 2020 and August 2023 across 30 journals ranked A*, A, or B on the Australian Business Deans Council 2022 Journal Quality List. We find that the literature continues to be dominated by positivist studies investigating the determinants and consequences of assurance. Studies on determinants examine carbon assurance, ownership, governance, and institutional themes. The consequences studies included in our review examine reporting-related outcomes and investors' decisions. Other (qualitative) studies we reviewed examine issues such as assurance providers seeking meaning in their work and their attempts to promote assurance beyond merely a verification tool. We highlight several avenues for future research that could inform the work of standard setters and regulators.

KEYWORDS

assurance, corporate social responsibility, extended external reports, nonfinancial information, sustainability

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1 | INTRODUCTION

In recent years, the development of extended external reporting (EER) standards has gained rapid momentum.¹ Global developments include the formation of the International Sustainability Standards Board (ISSB) under the auspices of the International Financial Reporting Standards Foundation issuing its first two standards during June 2023. In the United States (US), in March 2022, the Securities and Exchange Commission issued a proposal requiring companies to disclose certain climate-related information. In the European Union (EU), on January 5, 2023, the Corporate Sustainability Reporting Directive (CSRD) (Directive 2022/2464/EU)² became effective, modernizing and strengthening the regulations on EERs. On July 31, 2023, the European Commission (EC) adopted the first set of 12 European Sustainability Reporting Standards (ESRS). As EER is increasingly becoming a mainstream practice across the globe, the demand for assurance to enhance the credibility of these reports has also increased. Assurance providers of EERs face challenges that are unique compared to the audit of financial statements. Consequently, assurance standard setters have been challenged in setting standards that are fit for purpose.

Globally, the International Auditing and Assurance Standards Board (IAASB) is developing a new overarching standard for assurance on EER, International Standard on Sustainability Assurance (ISSA) 5000, *General Requirements for Sustainability Assurance Engagements*, which is currently at the end of the consultations stage with the deadline set at December 1, 2023. In the EU, as per the CSRD, EER assurance by an independent auditor or other assurance service provider is initially mandated at a limited assurance level. However, the overarching goal is to eventually transition to a reasonable assurance level. The CSRD also grants authority to the EC to adopt standards for EER assurance. The EU may potentially be the pioneer jurisdiction to incorporate the IAASB's newly proposed standard into its regulatory framework (Bonino et al., 2023).

Consistent with the pace at which practice has developed since 2021, the academic literature on EER assurance has increased substantially over recent years. In light of recent international standard-setting developments on EERs and the demand for and interest in this assurance service, we review the academic literature on the assurance of EERs published since the extensive literature review by Venter and Van Eck (2021). Our review includes 50 articles published between 2020 and August 2023 across 30 journals ranked A*, A, or B on the Australian Business Deans Council (ABDC) 2022 Journal Quality List. We provide an updated overview of this literature to inform the practice of EER assurance and to stimulate future research, especially with the new archival data that will become available following the implementation of the proposed ISSA 5000.

Our review extends Venter and Van Eck (2021) by providing an update on the literature published subsequently. Our review also complements two concurrent reviews. First, Zhou (2022) focuses on archival studies using Australian data and published between 2009 and 2021 in A*, A-, and B-rated journals on the ABDC list. Our review is not restricted to a specific country or method and covers a period from 2020 to August 2023. Second, Yan et al. (2022) conducted a systematic literature review including 87 articles across 50 journals from 2003 to 2021. By contrast, our sample of 50 articles, includes 18 articles published before 2022, which means that our review mostly addresses literature not covered by either Zhou (2022) or Yan et al. (2022).

Our literature review enables us to derive the following key conclusions. We find that the EER assurance literature continues to be dominated by positivist research methods

(i.e., archival and experimental studies). We identify the determinants of assurance as a key theme in the literature and our review discusses studies on determinants such as carbon information asymmetry, ownership, governance, and institutions. The consequences of assurance is another theme evident from our review. While studies mostly address the effect of assurance on investors' decisions, some studies document the impact of assurance on reporting quality and financing. Finally, we discuss other (qualitative) studies in our sample. These studies address matters such as how assurance providers promote EER assurance, how they search for meaningfulness in their work and how assurance can be used as a tool to influence companies' sustainability practices. Based on the literature review and recent practice developments, we also offer several suggestions for future research.

Our literature review contributes to the academic literature and has practical implications. In light of the swift evolution of assurance regulation and practice, coupled with the calls for research, this study serves to consolidate and examine the available literature. In doing so, it not only highlights current research gaps, but also establishes a foundation for future investigations. By structuring our review according to key themes and research approaches, we primarily build upon the groundwork of Venter and Van Eck (2021) and extend the temporal scope of the analysis. This approach, as well as the narrowed sample of 50 papers, provide us with the opportunity to discuss many of the articles in-depth, offering nuanced insights. This detailed examination proves particularly beneficial for researchers concentrating on specific aspects of assurance. Additionally, a dedicated section of the paper clearly outlines our suggestions for potential future research directions.

The practical significance of our literature review is its potential utility for the IAASB during the final phases of its work on ISSA 5000, particularly in the period leading up to the completion of the final standard in 2024. Additionally, it holds relevance within the framework of the EU institutional setting, serving as potential input for EFRAG, the EC, and member states' national regulators by offering insights into contemporary assurance practices in various jurisdictions. The practical implications of our review extend beyond just EU countries, reaching a broader audience. Given the importance of the EER assurance to investors, regulators, and other stakeholders and the urgency of the issue, we provide a timely and relevant update on the literature on EERs which could be helpful to decision-makers across the globe involved in shaping standards and practices on EERs.

The remainder of this paper is structured in seven sections. Section 2 provides a brief background to recent practice developments. Section 3 contains the method, and Section 4 provides a discussion of publication trends and themes. Section 5 discusses recent studies focusing on the determinants and consequences of assurance. Section 6 reviews other studies. Section 7 provides ideas for future research, and Section 8 offers concluding remarks along with the study limitations.

2 | BACKGROUND ON RECENT PRACTICE DEVELOPMENTS

Historically, the assurance of sustainability-related information fell within the ambit of the International Standard on Assurance Engagements (ISAE) 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information (Revised)* ("ISAE 3000 (Revised)") and ISAE 3410, *Assurance Engagements on Greenhouse Gas Statements* issued by the (IAASB).

When Venter and Van Eck's (2021) review was published, the IAASB was in the process of developing and issuing *Nonauthoritative Guidance on Applying ISAE 3000 (Revised) to Sustainability and Other Extended External Reporting (EER) Assurance Engagements* (hereafter "the guidance"). The guidance was issued in April 2021.

With the goal of enhancing the trust and confidence investors, regulators and other stakeholders have in EER, the IAASB has developed a standard for assurance on sustainability reporting, ISSA 5000. A project proposal to develop this standard was approved in September 2022 (IAASB, 2023a), and during August 2023 an exposure draft was released for public comment with comments due by December 1, 2023. The timeline has been implemented to ensure that ISSA 5000 is ready in 2024 to support the global baseline of sustainability reporting and assurance standards in line with the recommendation of the International Organization of Securities Commissions (IOSCO) that the IAASB should approve the standard within a timeframe that allows assurance providers to be familiar with its content ahead of the end-2024 reporting period (IAASB, 2023b; IOSCO, 2023).³

According to the IAASB's project objective, ISSA 5000 is a response to the public interest's need for a timely standard that supports the consistent performance of quality sustainability assurance engagements. While developing the proposed ISSA 5000, the IAASB focused on five key design features. First, the proposed ISSA 5000 is intended to be an overarching standard suitable for the assurance of sustainability information on any sustainability topic (e.g., climate, biodiversity, human rights, customer health and safety) (IAASB, 2022, 2023b). Second, once issued, ISSA 5000 will be applicable to both limited and reasonable assurance and be profession-agnostic, supporting its use by both professional accountants and other assurance practitioners (IAASB, 2023c).⁴ Third, ISSA 5000 will be a stand-alone standard, meaning that it can be applied without any other existing IAASB auditing or assurance standards, provided that assurance providers using ISSA 5000 comply with relevant ethical requirements at least as demanding as those set forth in the *International Code of Ethics for Professional Accountants* of the International Ethics Standards Board of Accountants (IESBA) and apply a system of quality management at least as demanding as the IAASB's package of quality management standards (IAASB, 2023c). Fourth, the proposed ISSA 5000 is "framework neutral" meaning that it can be used for assurance on sustainability information prepared using any suitable criteria (framework criteria, entity-developed criteria, or both) (IAASB, 2023d). Framework criteria include the standards issued by the ISSB and the Global Reporting Initiative (GRI). Finally, the new standard will be "user neutral" as it will apply to all assurance engagements on sustainability information, regardless of the intended users of such information (IAASB, 2023d).

The proposed ISSA 5000 addresses how to conduct an assurance engagement across all elements of the engagement from acceptance to reporting. The priority areas considered as part of developing the overarching standard are (1) the difference in work effort between limited and reasonable assurance, including the sufficiency of the evidence, (2) the suitability of the reporting criteria, including addressing concepts such as double materiality, (3) the scope of the assurance engagement, (4) evidence, the reliability of information and what comprises sufficient appropriate evidence, (5) the entity's system of internal control and its impact on the ability of the practitioner to obtain sufficient appropriate evidence, including the reliability of the information to be used as evidence,

and (6) materiality in the context of the assurance engagement and materiality of narrative and qualitative information (IAASB, 2022).

3 | METHOD

Like Venter and Van Eck (2021), we search the Academic Source Complete and Business Source Complete databases of EBSCOhost and ProQuest's Accounting, Tax and Banking collection for articles which contain "assurance" together with one of the following words in their title "carbon," "corporate social responsibility," "CSR," "environmental," "greenhouse gas," "integrated report," "integrated reporting," "nonfinancial," and "sustainability" published since their review. We also search for "combined assurance" as a credibility-enhancing technique and "extended external reporting" as this is the terminology used by the IAASB.⁵ This search is updated to August 2023 and identified 109 articles. To ensure our review focuses on high-quality research, we limit the articles included in our review to those ranked A*, A, or B on the ABDC 2022 Journal Quality List.⁶ We review articles from the "accounting" and "finance" fields of research to focus on articles relevant to these disciplines. A number of relevant journals are also included in the "strategy, management, and organizational behavior" field of research. Consequently, we also include journals in this category in our review. We exclude discussions, literature reviews, and article reviews from our analysis since these types of articles do not contain new empirical evidence.⁷ We supplement our database search with a Google Scholar search and identify five additional articles for inclusion in our review. Our final sample consists of 50 articles across 30 journals.

4 | TRENDS AND THEMES IN PUBLICATIONS

In this section, we provide descriptive context to the articles included in our sample. Table 1, Panel A, contains the 10 journals that published the most articles on EER assurance. Five articles were published in *Business, Strategy and the Environment*, *Meditari Accountancy Research*, and *Sustainability Accounting, Management and Policy Journal*, three articles were published in the *Journal of Applied Accounting Research*, while the remaining six journals in the top 10 each published two articles. In total, the articles in these 10 journals represent 60% of our sample. While the *Journal of International Financial Management and Accounting* did not publish any empirical evidence consistent with our search terms over the sample period, the journal published two contributions as part of their Institutional Perspectives section, namely Venter and Van Eck (2021) and Krasodomska et al. (2021). Together, these two companion articles provide an overview of both the academic and practice developments on EER at the time they were published.

Table 1, Panel B, contains frequency by journal rank and method. Similar to Venter and Van Eck (2021), archival studies continue to dominate this research with 78% of the studies in our sample using archival methods. A trend in our sample is the emergence of qualitative research (case studies, interviews, field studies, and ethnography) comprising 14% of our sample studies. The four studies published in A*-rated journals include one archival, one experimental, and two qualitative (a field study and a case study). Archival methods occur most frequently in B- (85.2%) and A-rated (78.9%) journals.

TABLE 1 Trends in academic publications addressing EER assurance.

Panel A: Journals with the highest frequency of articles addressing EER assurance				
Journal name (rank)	Number of articles		% of total	
<i>Business Strategy and the Environment (A)</i>	5		10	
<i>Meditari Accountancy Research (A)</i>	5		10	
<i>Sustainability Accounting, Management and Policy Journal (B)</i>	5		10	
<i>Journal of Applied Accounting Research (B)</i>	3		6	
<i>International Journal of Accounting and Information Management (B)</i>	2		4	
<i>Current Issues in Auditing (B)</i>	2		4	
<i>International Journal of Auditing (A)</i>	2		4	
<i>Accounting and Finance (A)</i>	2		4	
<i>Accounting, Auditing, and Accountability Journal (A*)</i>	2		4	
<i>International Journal of Disclosure and Governance (B)</i>	2		4	
Total	30		60	
Panel B: Publications by method and journal ranking				
Method	Journal rank			Total
	A*	A	B	
Archival	1	15	23	39
	(2.6%)	(38.5%)	(59.0%)	(100.0%)
	[25.0%]	[78.9%]	[85.2%]	[78.0%]
Experimental	1	1	2	4
	(25.0%)	(25.0%)	(50.0%)	(100.0%)
	[25.0%]	[5.3%]	[7.4%]	[8.0%]
Other (Qualitative)	2	3	2	7
	(28.6%)	(42.9%)	(28.6%)	(100.0%)
	[50.0%]	[15.8%]	[7.4%]	[14.0%]
Total	4	19	27	50
	(8.0%)	(38.0%)	(54.0%)	(100.0%)
	[100.0%]	[100.0%]	[100.0%]	[100.0%]

Note: This table provides descriptive statistics on the academic publications addressing EER assurance. In Panel B, the percentage in rows (columns) are indicated in brackets (square brackets).

Abbreviation: EER, Extended External Reporting.

Positivist research (archival and experimental methods) constitutes 86% of the studies in our sample, and the main themes in this literature continue to focus on the determinants and consequences of EER assurance. We discuss this literature next in Section 5 c. In Section 7, we discuss the remaining studies in our sample.

5 | MEASURING ASSURANCE QUALITY

Before discussing the determinants and consequences studies in detail, we first address the measurement of assurance quality since it is a matter that relates to many studies. Given that the measurement of assurance quality is a key research design consideration to this literature, we provide an overview in this section.

Among the works included in the Venter and Van Eck (2021) review, assurance quality is addressed, for example, by Hummel et al. (2019) and Clarkson et al. (2019). As Hummel et al. (2019) note, although previously explored in the literature, no common approach to measuring assurance quality has been agreed upon. To measure audit quality, Hummel et al. (2019) use a definition of assurance quality focused on the depth of the assurance process and the breadth of the assurance statement. Clarkson et al. (2019) associate assurance quality with the choice of assurance scope and type of assurance provider (Big 4 accounting firm vs. specialist consultant).

Table 2 contains a summary of assurance quality proxies used in the studies included in our review. As is evident from Table 2, seven of the eight studies referenced in the table measure assurance quality solely from characteristics of the assurance statement. The assurance statement is one of the outputs of the assurance process, with its content, apart from the final opinion, being input-based decisions (e.g. the assurance provider, scope, and the level of assurance). Measuring assurance quality based on characteristics of assurance statements can be appealing to researchers given that these characteristics can be identified and coded using a checklist. However, as the requirements of assurance standards largely determine the content of assurance statements, we expect that the wording of these statements would largely follow the guidelines of standards and would provide limited information regarding assurance quality beyond the scope and level of assurance. Consequently, using the characteristics of an assurance statement as a proxy for the underlying construct has limitations.

Further, Table 2 indicates that researchers do not agree on the features of assurance statements that are indicative of assurance quality. This variation raises questions about construct validity (i.e., what is the “best” or “most appropriate” proxy for the underlying construct) and makes it challenging to compare inferences across studies. Moreover, García-Sánchez et al. (2022) do not define how assurance quality is measured (e.g., what precisely is included in the composition of the assurance quality index). The absence of a definition complicates the evaluation of internal validity of the inferences and hinders the ability to replicate these studies using other samples or periods.

As sustainability reporting grows globally, the role of assurance and its contribution to the credibility of these reports will continue to be a matter of public interest importance. Academic researchers who motivate their work based on standard-setting objectives are responsible to ensure that their inferences are based on valid research design choices. As one of the key constructs in this literature is “assurance quality,” we urge researchers to clearly articulate their definition and proxies for assurance quality and to substantiate their research design choices.

6 | DETERMINANTS

Venter and Van Eck (2021) categorize the determinants of EER assurance at company-, industry-, and country-levels. Company-level characteristics include size, profitability, leverage, the extent/level/quality of sustainability-related reporting, social and environmental performance, and corporate governance characteristics. The industry's influence on assurance decisions

TABLE 2 Assurance quality measures utilized in recent publications addressing EER assurance.

Study	Assurance quality
Donkor et al. (2021)	Combined assurance quality is measured based on disclosure about the combined assurance model provided in companies' integrated reports and covers (1) the description of the model (lines/levels of defense), (2) the combined assurance report (conclusions), and (3) the presentation and connectivity of combined assurance disclosures. Each component of the combined assurance proxy is rated on a three-point Likert scale. The total combined assurance quality score for each company is the sum for each component divided by the maximum score.
García-Sánchez et al. (2022)	Assurance quality is the sum of the scores across 19 hand-collected items from companies' assurance statements using a checklist that captures the requirements for a high-quality assurance statement according to international assurance guidelines.
Sierra García et al. (2022); Zaman et al. (2021)	The quality of the assurance report is based on a content analysis of these reports using a disclosure index of 12 items. The 12 items are (1) addressee, (2) assessor's responsibility, (3) independence, (4) engagement objective, (5) engagement scope, (6) reporting criteria, (7) assurance standards, (8) work summary, (9) materiality, (10) completeness, (11) stakeholder responsiveness, and (12) general opinion. The maximum score is 23.
Grassmann et al. (2022)	Assurance quality is measured based on the presence of assurance characteristics disclosed in the assurance statement: (1) title, (2) addressee, (3) name and location of assessor, (4) report date, (5) responsibilities of reporter and assessor, (6) independence and competencies of assessor, (7) assurance criteria, level, and standards, (8) summary of work, (9) responsiveness to stakeholders, (10) suggestions of assessor, (11) conclusion. The maximum score is 24.
Harindahyani and Agustia (2023)	Assurance statement quality is measured based on a list of 14 items intended to capture the breadth of the assurance statement. The 14 items cover the following subcategories: (1) general information (e.g., addressees and assurance standard), (2) assurance provider information (e.g., competence, independence, responsibility), (3) assurance process (e.g., scope, level), and (4) conclusions (e.g., materiality and conclusions).
Kılıç et al. (2021)	Each of the seven components of assurance quality identified by the authors is coded one if it was mentioned in the company's assurance statement, and zero otherwise. Assurance quality is defined as the sum of the seven components (maximum score is seven). The seven components are (1) control and review of indicators and data, (2) interviews with top management, (3) interviews with employees, (4) site visits, (5) evaluation of materiality matrix, (6) analysis of internal documents, and (7) analysis of further external documents.
Maroun (2022)	Assurance quality is measured by the total weighted number of subject matters for which assurance is provided. Subject matters are stated in each assurance report and examples include

(Continues)

TABLE 2 (Continued)

Study	Assurance quality
	greenhouse gas emissions, water consumption, waste recycled, number of employees, health and safety statistics, and compliance with codes of best practice. To capture the difference in quality between reasonable and limited assurance, the number of subject matters that reasonable assurance is provided for are multiplied by two.

is related to the sector's social and environmental sensitivity. Country-level characteristics include the legal system/origin and the strength of the legal system.

Determinants that are generally positively related to the assurance decision identified in the Venter and Van Eck review are the company's size (Castelo Branco et al., 2014; Casey & Grenier, 2015; Datt et al., 2019; Fernandez-Feijoo et al., 2015; Simnett et al., 2009), the extent/level/quality of sustainability reporting and sustainability performance (Cho et al., 2014; Clarkson et al., 2019; Dutta, 2020; Hassan et al., 2020; Sethi et al., 2017; Simoni et al., 2020), the company being headquartered in stakeholder-oriented countries (i.e., code law countries) (Bollas-Araya et al., 2019; Kolk & Perego, 2010; Simnett et al., 2009, 2020; Zhou et al., 2016), and the company operating in industries with greater social and/or environmental impacts (Castelo Branco et al., 2014; Cho et al., 2014; Green & Zhou, 2013; Martínez-Ferrero & García-Sánchez, 2017; Mock et al., 2013; Simnett et al., 2009; Zorio et al., 2013). This body of research indicates that several attributes of the corporate governance system, including those relating to corporate social responsibility (CSR) committees, positively influence companies' assurance decisions. Studies investigating profitability and leverage provide mixed results, as well as research focusing on the strength of the legal system in the country.

Venter and Van Eck (2021) also identify studies that focus on the factors associated with the choice of the assurance provider. Several studies indicate that the decision to use an accounting firm as an assurance provider is positively related to company size (Bollas-Araya et al., 2019; Fernandez-Feijoo et al., 2015; Mock et al., 2013; Simnett et al., 2009; Wong et al., 2016). Studies on the impact of profitability or leverage on the assurance decision provide largely mixed results.

We group the determinants from the studies included in our sample in the following categories: (1) carbon assurance, (2) ownership, (3) governance, (4) institutions, and (5) others.

6.1 | Carbon assurance

Our sample identifies new determinants in the literature including the impact of climate change-related issues. The data for these studies is obtained from data reported voluntarily by companies to the Carbon Disclosure Project (CDP). As such, these samples are self-selected and their evidence may not be representative of the broader population.⁸ Fan et al.'s (2021) results suggest that companies with higher carbon information asymmetry between insiders (managers) and outsiders (external stakeholders) are more likely to voluntarily engage an external party for the independent assurance of their greenhouse gas statements. The sample period is from 2011 to 2015, and the sample covers 4573 observations from companies located

in 21 countries. Assurance is measured by a binary variable derived from the CDP database. Carbon information asymmetry is captured with three proxies, that is, (1) the quantity of carbon emissions, calculated as the ratio of total Scope 1 and Scope 2 emissions in metric tons to total sales in millions of dollars, (2) the complexity of the company's energy structure, measured as the number of fuel types, and (3) a binary variable equal to one if the company is in a carbon-intensive sector (i.e., energy, materials, or utilities). The authors conclude that carbon assurance can increase value (by decreasing transaction costs), depending on the severity of the carbon knowledge gap among a company's key stakeholders.

Datt et al. (2022) provide descriptive evidence in the market for the assurance of carbon emissions disclosures from 2010 to 2017 based on 13,419 company-year observations from the CDP database across 58 countries. Over the sample period, companies from the US, Canada, the United Kingdom (UK), Japan, and South Africa exhibit the highest frequency of reporting carbon emissions data to the CDP. The demand for carbon reporting is accompanied by a greater number of companies seeking assurance of their carbon reports (70.2% in 2017 compared to 46.3% in 2010), with more companies seeking assurance from nonaccounting providers (47.9%) rather than from accounting providers (35.4%) (16.7% of sample companies do not disclose their assurance provider to CDP). However, the type of assurance provider differs across countries. Based on the observations with nonmissing assurance provider data and countries with more than 120 observations, accounting providers dominate in France (88.3%), The Netherlands (83.6%), Australia (70%), Finland (72.4%), Sweden (72.65), Germany (67%), and Italy (60.6%), while nonaccounting providers dominate in South Korea (90.2%), the US (86.7%), Norway (74.5%), the UK (66.2%), and Switzerland (61.6%).

6.2 | Ownership

Regarding investors asserting pressure on companies to provide assurance, García-Sánchez et al. (2022) ground their study in agency theory and analyze the role institutional investors play in a company's decision to hire sustainability assurance service providers and identify the benefits of sustainability assurance for the capital market. The authors use a sample of 1564 multinational listed companies and the data for the period 2002 through 2017 from the Thomson Reuters Database. The study employs an assurance quality index derived from the content of assurance statements (refer to Table 2). The findings show that the presence of long-term institutional investors in the ownership structure of a company has a (marginally) positive association with the decision to provide assurance, but neither their voting rights nor their presence on the board of directors show a significant association with the decision to provide assurance. This evidence suggests that long-term institutional investors do not exert pressure on companies to provide assurance through direct mechanisms (such as voting or board representation), but indirectly. In contrast, the presence of short-term institutional investors in a company's ownership structure has no association with the assurance decision, but their voting rights are negatively associated (marginally) with the decision to provide assurance. This evidence suggests that short-term institutional investors may view assurance as costly and that they attempt to vote against the purchase of assurance services. Regarding assurance quality, both long- and short-term institutional investors' voting rights are positively associated with assurance quality, while only short-term institutional investors' board representation is (marginally) associated with assurance quality.

Haider and Nishitani (2022) investigate the association between the ownership structures of 398 Japanese companies included in the Nikkei 500 and the decision to provide voluntary sustainability assurance in 2018. They document that the probability of providing sustainability assurance increases with the percentage shareholding by financial institutions, business corporations, and foreign investors, with financial institutions having the strongest relation with the provision of assurance.

6.3 | Governance

Consistent with Venter and Van Eck (2021), a number of our sample studies focus on corporate governance determinants of the decision to provide assurance and assurance quality. Oware et al.'s (2022) sample consists of 80 listed companies on the Indian stock market from 2010 to 2021 and includes the period before and after CSR reporting in India became mandatory. The findings suggest that independent board directors and total board size are not significant determinants of the provision of CSR assurance during the mandatory CSR policy period. However, CEO duality decreases the likelihood of companies providing CSR assurance. The authors suggest that this finding may be due to the CEO's perception that the CSR assurance does not reduce information asymmetry beyond the mandatory CSR reporting. Independent board directors and total board size are irrelevant to the engagement in CSR assurance during the mandatory CSR policy period. In contrast, Haider and Nishitani (2022) (also discussed in Section 6.2 above) find no association between board size and the provision of sustainability assurance for Japanese companies, while board independence is positively associated with the assurance decision.

In the South African context, Maroun (2022) investigates the association between audit committees and other corporate governance characteristics and companies' decisions regarding the level of assurance (limited vs. reasonable). The analysis is based on integrated reports prepared by the top 50 companies (by market capitalization) listed on the Johannesburg Stock Exchange (JSE) publishing an integrated report from 2013 to 2016. Out of 200 company-year observations, 122 provide ESG (environmental, social, governance) assurance. The findings suggest that the monitoring attributes of boards of directors are associated with higher use of both reasonable and limited assurance. While the monitoring attributes of the audit and risk committees are associated with lower use of limited assurance, they are associated with higher use of reasonable assurance. In contrast, internal audit functions are not associated with the use of ESG assurance. The findings are consistent with the view that ESG assurance is a key part of the broader governance system.

Two recent studies investigate Chinese companies' decisions regarding whether to provide assurance, Khalid et al. (2022) and Liu et al. (2023). The uptake on CSR assurance in China has been exceptionally low. Liu et al. (2023) examine the effects of external corporate governance on companies' assurance decisions for a sample 4217 company-years of heavy polluting companies from 2011 to 2018 (the assurance rate for the sample is only one percent). Five dimensions of external corporate governance are measured: (1) law and regulation (laws and their enforcement vary across provinces and municipalities in China), (2) various markets (e.g., monitoring by institutional investors, intensity of corporate control and managerial labor markets, and product market competition), (3) providers of capital market information (e.g., analyst following and ESG rating agencies), (4) external accounting, financial and legal firms (e.g., audit fees, Big 4 auditor, number of professional lawyers), and

(5) the media (e.g., media coverage). The findings indicate that except for the “various markets” dimensions, all other external corporate governance dimensions are positively associated with companies' decision to provide CSR assurance. Healthy financial conditions, well-governed internal controls, and sufficient government subsidies positively moderate the association between external governance and the decision to provide CSR assurance.

Khalid et al. (2022) provide additional evidence on the Chinese market by investigating whether CFOs' foreign, professional, or academic experience affects the likelihood of companies providing CSR assurance for a sample of A-share listed companies that issued a CSR report between 2008 and 2017. A CFO is deemed to have foreign experience if he/she studied outside China or had exposure to a foreign working environment, while a CFO is deemed to have professional experience if he/she had prior accounting or audit-related professional experience at any level. CFOs are deemed to have academic experience if they previously worked at a university. The results show a positive association between CFOs' foreign and professional experience, respectively, and the decision to obtain CSR assurance. No significant association exists between CFOs' academic experience and the CSR assurance decision. For a subsample of companies reporting under the GRI, academic and professional experience of CFOs are significant determinants of the CSR assurance decision, while the main findings are replicated for a subset of companies that are subject to mandatory CSR reporting.⁹

Governance determinants of assurance decisions are also investigated for cross-country samples. Alsaahli et al. (2023) investigate whether the monitoring quality of the board of directors affects the choice of the type of sustainability assurance provider for a sample of 2271 companies across 34 countries. The authors distinguish between five types of assurance providers, namely Big 4 firms, other accounting firms, engineering firms, consulting firms, and individual experts. The findings reveal that board monitoring quality is positively associated with a company's decision to provide assurance for its sustainability report. The probability of choosing a Big 4 firm as the assurer increases with board size, CEO-chair separation, the percentage of women on the board, and the percentage of independent board members. Engineering firms are more likely to be chosen as the assurance provider when the company has a sustainability committee. The probability of choosing an individual expert increases with the number of board meetings. The positive association between board monitoring quality and the assurance decision, as well as the decision to select a Big 4 firm as the assurance provider, is also more pronounced when companies operate in a strong economic, legal, and social environment.

Based on a global sample of 7702 companies from 65 countries (59,172 company-year observations) between 2002 and 2019, Uyar et al. (2023) examine the relationship between audit committee attributes and CSR reporting, assurance, and GRI adoption. Audit committee attributes considered in the study are independence (proxied by the percentage of independent audit committee members) and expertise (proxied by having at least three members including at least one i.e., a financial expert as defined by the US Sarbanes-Oxley Act). Data is obtained from the Thomson Reuters' Eikon database. The descriptive statistics indicate that 49% of the sample issued a CSR report. Of the observations with a CSR report, 62% refer to the GRI Framework and 43% provide external assurance. The results indicate that audit committee expertise is positively related with the decision to issue a CSR report, while both audit committee independence and expertise are positively associated with the decisions to adopt the GRI Framework and to obtain external assurance. When the presence of a CSR board committee is included in the model, the results indicate that the CSR committee substitutes for external assurance. More specifically, while the main effect

between the presence of a CSR committee and the provision of CSR assurance is positive and significant, the positive association between independence and expertise, respectively, and the decision to assure CSR reports, is less pronounced when companies have a CSR committee.

Zaman et al. (2021) examine the determinants of sustainability assurance quality (refer to Table 2) in relation to the top 100 listed companies in both Australia and New Zealand from 2017 to 2019. Features of the audit committee, such as independence of members, industry expertise, and attendance at meetings, are positively associated with assurance quality, while the size of the audit committee is not. Surprisingly, board independence is negatively associated with assurance quality, which suggests that independence only positively affects assurance quality when independent board members serve on the audit committee. An alternative interpretation is that independent boards substitute for lower assurance quality.

Using a global sample of 976 company-year observations from 2007 to 2016 representing 22 countries, Ruiz-Barbadillo and Martínez-Ferrero (2022) investigate why certain companies choose their financial statement auditors to also assure their sustainability reports. Industry specialization is measured as the sum of sales of companies audited by the assurator in an industry to the sum of sales of all companies in the industry. Reputation (independence) is measured as the weight of each client in an assurance provider's portfolio based on assets by year and country. The financial statement auditor is also the sustainability report assurator for 39% of the sample observations. The findings indicate that the auditors' industry specialization is a significant determinant of selecting the financial statement auditor to also assure the sustainability reports, while reputation is not significantly associated with this choice. The authors argue that the knowledge spillover benefits from industry specialization offsets any independence and knowledge concerns from using the same provider for financial statement audit and sustainability report assurance.

6.4 | Institutions

Based on the same sample of more than 850 integrated reports published from 2011 to 2016, both Kılıç et al. (2020) and Kılıç et al. (2021) evaluate the impact of several features of business environments on companies' assurance decisions. According to Kılıç et al. (2020) findings, companies tend to assure their integrated reports in business environments that are characterized by weaker ethical behaviors, less effective boards, poorer auditing and reporting standards, and insufficient protection of the rights of minority shareholders by the legal system. The authors posit that assurance of integrated reports is not an outcome of coercive or normative pressures but the result of a need for independent verification when institutional pressures are absent or weak. Thus, the results provide additional evidence that the assurance of integrated reports is a response to the absence or incompetence of formal and informal institutions.

Kılıç et al. (2021) investigate factors influencing companies' decisions regarding whether to provide assurance, the quality of assurance (see Table 2), and the type of assurance provider. Their findings suggest that companies operating in code-law (stakeholder-oriented) countries relative to those operating in common-law (shareholder-oriented) countries are more likely to provide assurance for integrated reports. Furthermore, the strength or quality of public institutions in countries has a negative association with the provision of assurance for integrated reports. The existence of high-quality public institutions reduces the need for

assurance statements. Moreover, the sustainable development level of countries encourages companies to engage in the independent verification of integrated reports. Accounting firms are more likely to be selected to assure the integrated reports of companies established in countries that are characterized by strong public institutions, but weak sustainable environments. The decision to provide assurance is positively associated with companies' operating in code-law countries and negatively with the strength or quality of public institutions in the country and the level of the sustainable environment of the country. Assurance quality is not associated with the assurance provider (accountant vs. nonaccountant) and legal origin of the country. However, assurance quality is negatively associated with the strength of public institutions and positively associated with the sustainable environment of the country. The preference for an accounting firm as an assurance provider is directly related to the strength of public institutions and inversely related to a country's level of sustainable development.

Baboukardos et al. (2021) find that integrated thinking, a concept from the *International Integrated Reporting Council's* (IIRC) Framework, is positively associated with the decision to provide assurance for sustainability reporting and that this association is moderated by the type of legal system across an international sample of 47 countries from 2002 to 2016.¹⁰ For companies in code law countries (more oriented toward a stakeholder, than shareholder, perspective), the findings suggest that the association between integrated thinking and the decision to provide assurance is weaker. Integrated thinking is measured using a data item from Thomson Reuters' Asset 4 database that measures a company's capacity to maintain an overarching vision and strategy that integrates financial and nonfinancial aspects of its business.

Two recent studies focus on the role of country-level culture on companies' assurance decisions (Somoza, 2023; Uyar et al., 2022). In both studies, culture is measured using Hofstede's national cultural dimensions. Uyar et al. (2022) investigates 857 integrated reports published from 2011 to 2016 by a sample of 192 companies obtained from the early examples database of the IIRC. The results suggest that individualism, power distance, masculinity, long-term orientation, and indulgence are negatively associated with the assurance of integrated reports, whereas uncertainty avoidance is positively associated. Somoza (2023) focuses on the sustainability reporting assurance practices of 460 small-to-medium-sized companies (SMEs) located in the EU, the UK, and Norway. The data is from the GRI database. The total number of observations over the 10-year period (2009–2019) is 1648. The study suggests that power distance, masculinity, and uncertainty avoidance negatively impact the decision to provide assurance for sustainability information. The limited level of assurance dominates, and the assurers are mostly accounting firms, typically the Big 4. Adherence to the GRI Standards is the strongest determinant of assurance, and legal origin is also a significant determinant of assurance, especially in Scandinavian countries followed by those operating in a codified system of French origin.

Given that prior research provides evidence of a positive association between religiosity and ethical corporate behavior, Terzani and Turzo (2023) address whether religiosity and religious diversity are determinants of the decision of provide assurance for sustainability reporting for a sample of 315 European companies based in eight predominantly Roman Catholic and Protestant countries over the period 2004–2015 (2541 company-year observations). Religiosity, a country-level proxy, is measured based on questions from the World Value Surveys to capture the three dimensions of religiosity, namely cognitive, affective, and behavioral. A single measure of religiosity is derived from Principal Component Analysis. The findings indicate that

companies based in highly religious countries are more likely to provide assurance for their sustainability information. Companies operating in predominantly Roman Catholic countries are more likely to provide sustainability assurance than those operating in Protestant countries. The authors interpret their findings using social norm theory arguing that the top-down control mechanism typical of Roman Catholicism is associated with a greater tendency to provide assurance for sustainability information than the “mutual social control” mechanism characterizing Protestantism (Terzani & Turzo, 2023). While religiosity is arguably related to culture, Terzani and Turzo's (2023) models do not include country-level cultural variables as controls. Consequently, the question exists about whether religiosity is a determinant of assurance incremental to the cultural attributes investigated by Uyar et al. (2022) and Somoza (2023).

6.5 | Other

Recent studies provide evidence on country-specific assurance markets. Based on a sample of 118 companies listed on the New Zealand Stock Exchange in 2020, Hsiao et al. (2022) utilize hand-collected data indicating whether companies provide sustainability information, whether sustainability information is assured, what subject matter is assured, the assurance level (i.e., reasonable or limited), assurance outcome (e.g., clean vs. qualified), type of assurance provider, disclosure of detailed procedures, assurance standard referenced (e.g., ISAE 3000, ISAE 3410), and the criteria assured against (e.g., GRI, ISO 14064, self-declared). The results reveal that of the 118 sample companies, 62 voluntarily issued some form of EER, and 12 companies provided assurance. The findings indicate a diversity in assurance practices, placement of assurance reports in different sections of corporate reports, and a mixture of assurance levels that potentially contribute to the audit expectation gap. For the sample, Big 4 firms dominate the sustainability assurance market. Most of the assurance is provided at the limited level, although GHG emission data is often assured at a reasonable level. The authors also identify two reports providing limited assurance for Scope 3 emissions, that are harder to quantify, and reasonable assurance for Scope 1 and 2 emissions. The findings also suggest that operating in primary, construction, manufacturing, and utility sectors is positively associated with companies' decisions to provide assurance. Somoza's (2023) results, in contrast, show that SMEs operating in sectors with a greater ecological/social footprint do not appear to be more willing to assure their sustainability information (refer to Section 6.3).

Zaman et al. (2021) examine the sustainability assurance market in relation to the top 100 listed companies in both Australia and New Zealand from 2017 to 2019 (also discussed in Section 6.3 above). Assurance quality is measured as a weighted average industry-adjusted composite score and encompasses 12 variables related to the content of the assurance statements (refer to Table 2). The findings indicate that Australian companies are more likely to provide assurance for their sustainability information compared to their New Zealand counterparts. Big 4 accounting firms dominate the market for assurance providers in both countries. Of the 99 (19) Australian (New Zealand) assurance statements in the sample, 73% (47%) are assured by the same provider as the financial statement auditor. EY has the highest market share in Australia, whereas Deloitte dominates the New Zealand market. The quality of assurance statements based on the industry-adjusted composite score mentioned above is low and does not differ significantly between Australian and New Zealand companies.

Bakarich et al. (2023) analyze assurance practices related to the 2020 ESG reports of companies on The Wall Street Journal's list of the top 100 sustainably managed companies and Investor's Business Daily's 100 best ESG companies of 2021 (yielding a final sample of 194 companies). The findings reveal that 58% of the reports are assured. Of the 99 US headquartered companies in the sample, only 39% obtain some level of external assurance of their ESG reports compared to 78% of the 95 non-US headquartered companies. ISAE 3000/3410 is the assurance standard used by 65% of the total sample, that is, 46% in the US subsample and 75% in the non-US subsample. Limited assurance is provided for 88% of the sample reports. Deloitte, KPMG, or PwC are the assurance providers for 52% of the non-US sample, whereas Apex and ERM Verification and Certification services assure 44% of the US reports. In the non-US sample, 39% of companies use the same Big 4 firm to provide both financial statement and ESG assurance, while in the US sample, the percentage is 13%. Overall, 12% of the total sample uses one Big 4 firm for the financial statement audit and a different Big 4 firm for the ESG assurance engagement.

The single-country perspectives are extended by Alshali and Malagueño (2021) who, based on a global sample on 12,783 companies from 2012 to 2017 obtained from the GRI database, provide descriptive evidence on sustainability assurance practices. The findings indicate a substantial increase in the assurance of sustainability reports by multinational-enterprises (MNEs), but not by large and SMEs. The time lag between companies' first sustainability report and their first assured sustainability report varies by region and company size. Companies in Africa, the US, and Oceania, on average, take longer to issue their first assured report than companies located in other regions, while SMEs, on average, implement assurance earlier than MNEs. The choice of the type of assurance provider differs by region, industry, and company size. In addition, switching practices, both in terms implementing and discontinuing assurance and between assurance providers, are common. Overall, the authors also document an increase in the use of ISAE 3000 by nonaccounting providers.

Harindahyani and Agustia (2023) investigate the association between the type of assurance provider (accounting vs. nonaccounting) and the quality of the independent assurance statement (see Table 2) with the potential moderating effect of environmental risk for 96 large Asian companies that issued stand-alone sustainability reports during 2017. The inferences of the study should be interpreted with caution, as the sample is based on companies that voluntarily issue a sustainability report, while self-selection is not considered as part of the research design. Environmental risk is measured based on the frequency of words or phrases included in the sustainability reports that are indicative of environmental risks. The findings indicate that accounting assurance providers issue higher quality assurance statements than nonaccounting providers. However, this association is less pronounced when environmental risk is high.¹¹

7 | CONSEQUENCES

Key consequences of assurance identified by Venter and Van Eck (2021) include the extent/level/quality of reporting, assurance report content, capital market effects (e.g., cost of capital, analysts' forecast properties, company value), individual investors' decisions and other effects (e.g., company performance). We categorize the recent literature using the following themes: (1) reporting-related outcomes, (2) investors' decisions, and (3) other consequences.

7.1 | Reporting-related outcomes

A main consequence investigated in the recent literature is reporting quality. Donkor et al. (2021) assess the impact of combined assurance quality (refer to Table 2) on integrated, sustainability, and financial reporting quality for a sample of 71 South African companies listed on the JSE. An important consideration is that the study's proxy for combined assurance quality assesses the quality of disclosures about combined assurance, which may be unrelated to the actual quality of combined assurance practices. As an alternative to the quality proxy, the authors also use an indicator variable to capture the presence of disclosures regarding combined assurance in the integrated report. Integrated report quality is measured based on content analysis using a 31-item scoresheet. ESG reporting quality is measured based on Bloomberg's ESG disclosure score, and financial reporting quality is proxied by accruals-based and real earnings management.

The findings of Donkor et al. (2021) show that combined assurance quality and the presence of disclosure addressing combined assurance are positively associated with integrated report quality and ESG reporting quality. Regarding financial reporting quality, combined assurance quality is negatively associated with real earnings management, while no association is identified between the combined assurance indicator variable and real earnings management. In contrast, the result for the association between combined assurance quality and accruals-based earnings management is insignificant and weakly negatively significant in the case of the combined assurance indicator variable.¹²

Albitar et al. (2021) also address reporting quality. The authors assess the degree of disclosures regarding the COVID-19-pandemic in CSR reports for a sample of 243 UK companies publishing reports in 2020 and whether such disclosures are improved by assurance and the type of assurance provider. The authors employ two variables to capture the extent of COVID-19-related disclosures. The first is the frequency of COVID-related words in the CSR section derived from computer-assisted textual analysis, and the second is an indicator variable coded one if COVID-related information is disclosed in the CSR section of the report and zero otherwise. Two assurance variables capture whether CSR information is externally assured and the type of the assurance provider (Big 4 accounting firm, non-Big 4 accounting firm, or nonaccounting firm). The results suggest that companies are more likely to provide COVID-19-related disclosures when the CSR report is assured than when it is not assured; this finding is more prevalent when the CSR report is assured by accounting firms. The results are driven largely by large companies.

For a sample of 131 Spanish companies, Sierra García et al. (2022) examine whether assurance practices affect the likelihood of reporting on the United Nations Sustainable Development Goals (SDGs) in 2017 and 2018. Assurance of nonfinancial information became mandatory in Spain in 2018; the sample period covers a year of voluntary and a year of mandatory assurance regimes. The assurance practices considered are the presence of assurance, the type of assessor (accounting vs. nonaccounting), and the quality of the assurance report (see Table 2). The study examines the presence of SDG disclosures in the sustainability reports and does not evaluate the extent and quality of such disclosures. Considering that the 17 SDGs include 169 targets and 247 indicators that *countries*¹³ commit to, the presence of SDG disclosures in companies' sustainability reports may not reflect the deep societal change these goals aim to encourage. While sustainability reports may target a larger audience than capital providers, useful reporting on SDGs to investors should consider how the SDGs affect the business; its inputs, outputs, and outcomes, and affect the future financial implications of the

company. Not all SDGs, or the related targets and metrics, are relevant to all companies.¹⁴ The relevance of a particular goal also varies substantially between countries.¹⁵ While Sierra García et al. (2022) use a proxy for the presence of SDG disclosures, measuring the quality of SDG disclosures represents a complex task given the differences in applicability of SDGs, targets, and metrics across industries and countries. Based on their “basic” proxy, Sierra García et al. (2022) report that sustainability report assurance is positively associated with the presence of SDG disclosures in sustainability reports. For the subsample of companies that provide assurance, sustainability reports assured by KPMG and PwC are less likely than companies assured by nonaccounting providers to include SDG disclosures. However, no significant difference is found between EY and Deloitte, compared to nonaccounting providers.¹⁶ Finally, the authors report a positive association between the quality of assurance reports and the likelihood of SDG disclosures in the sustainability reports.

Bui et al. (2021) further address reporting quality by examining the association between carbon assurance and real earnings management for a sample of 546 company-year observations of New York Stock Exchange-listed companies from 2012 to 2015. The authors' focus on whether companies' financial reporting decisions (proxied by real earnings management) and credibility of carbon disclosures (proxied by assurance) are consistent with an overall corporate ethical culture. They argue that companies that voluntarily provide carbon disclosures aim to communicate their ethical objectives and dispositions to stakeholders and this communication is enhanced when the disclosures are subject to external assurance. Extending this line of reasoning, the authors posit that companies investing in carbon assurance are more likely to focus on long-term performance as opposed to meeting short-term profit targets and, consequently are less inclined to manage earnings. Assurance data is from the CDP.¹⁷ The findings indicate that the level of assurance for Scope 1 and Scope 2 emissions (no assurance, limited assurance, moderate assurance, reasonable assurance, or high assurance¹⁸) and the coverage of assurance (i.e., average percentage of Scope 1 and Scope 2 emissions assured) are associated with lower real earnings management. The association between the provision of carbon assurance and real earnings management is insignificant, suggesting that the level and scope of assurance are important inhibitors of managerial discretion. These findings are consistent with companies' overall ethical stance translating into higher quality financial reporting. Bui et al.'s (2021) sample includes companies participating in the CDP, that is, a self-selected group. While the authors attempt to address the potential endogeneity of companies' selected assurance level *within* the CDP sample, their design does not address companies' choice to participate in the CDP. Thus, the findings could be driven by unique characteristics of companies participating in the CDP.

Luo et al. (2023) examine the association between corporate carbon assurance and the quality of carbon disclosures for an international sample of 1700 large listed companies that participate in the CDP survey from 2010 to 2020 (9902 company-year observations). The quality of disclosure is measured using the CDP scores and ratings. The findings indicate that carbon disclosure quality is significantly higher for assured companies relative to unassured companies. The positive association between assurance and disclosure quality is more pronounced in stakeholder-oriented countries. The findings also suggest a substitutive role of carbon assurance with social trust and carbon regulation. Companies providing voluntary carbon assurance furthermore exhibit higher ESG and carbon performance, reducing concerns that their disclosures are used for impression management. Finally, the findings indicate that the percentage coverage of assured emissions (percentage of Scope 1 and Scope 2 emissions assured)

and the level of assurance (none, limited, moderate, reasonable, and high assurance) are positively associated with carbon disclosure quality.

7.2 | Investors' decisions

Several studies address the effect of assurance on equity investors' valuation or investment decisions, either directly or indirectly. Thompson et al. (2022), Ruiz-Barbadillo and Martinez-Ferrero (2023), Grassmann et al. (2022), and García-Sánchez et al. (2022) are archival studies, while the remaining studies in this category use experimental methods.

Thompson et al. (2022) investigate the moderating effect of assurance and the type of assurance on the relationship between CSR disclosure and company value for a sample of 92 South African companies between 2015 and 2019 (460 company-year observations). CSR disclosure is measured based on the CSR scores reported by CSRHUB (an ESG rating agency). While the authors describe this proxy as measuring disclosure, our interpretation of CSRHUB's methodology suggests the ratings measure CSR *performance* and not disclosure.¹⁹ Most of the data sources of CSRHUB are obtained from data providers external to the reporting company and are not obtained from company disclosures. The authors find a positive association between CSRHUB ratings and assurance, respectively, and company value (proxied by Tobin's Q). Additionally, the positive association between CSRHUB ratings and company value is more pronounced when assurance is provided. The authors infer that the market does not distinguish between the type of assurer (Big 4 vs. other) based on the results from a model where the coefficients of both the Big 4 indicator variable and the interaction between the Big 4 indicator variable and CSRHUB variable are insignificant. A concern with this interpretation is that the model includes the full sample (460 observations), thereby including observations of companies not providing assurance. Based on the descriptive statistics, of the 460 observations assurance is provided for 199 observations, including 128 observations utilizing Big 4 providers and 71 non-Big 4 providers. The arising question is whether both companies providing and those not providing assurance from a non-Big 4 provider are coded zero for the Big 4 indicator variable in the model. If this is the case, the findings may suggest that the market does not value Big 4 assurance relative to no assurance *and* non-Big 4 assurance. Such an inference seems unlikely given the main assurance result.

Two studies examine the association between assurance quality and information asymmetry. For an international sample of publicly listed companies from 2007 to 2016 from 22 countries (976 company-year observations), Ruiz-Barbadillo and Martinez-Ferrero (2023) investigate the association between the quality of assurance reports (see Table 2) and information asymmetry (proxied by the bid-ask spread) and whether the association is affected by the tenure of the assurance provider. While longer tenure could result in an improved understanding of the company resulting in assurance efficiencies, excessively long tenure could compromise the independence of assurance providers. The results indicate that assurance report quality is negatively associated with the bid-ask spread, which is indicative of lower information asymmetry and greater transparency. Tenure is positively associated with the bid-ask spread, suggesting that independence concerns increase as the length of assurance providers' relationship with a company increase. The negative association between assurance report quality and information asymmetry is weakened by the tenure of the assurance provider, suggesting that concerns regarding the assurer's independence decreases the transparency benefits of high-quality assurance reports.

Grassmann et al. (2022) investigate the association between assurance quality (see Table 2) and information asymmetry (proxied by the bid-ask spread) for a sample of 269 integrated reports of Forbes Global 2000 companies from 2013 to 2015. The findings suggest that an assurance statement has a negative association with information asymmetry, while no association exists between assurance quality and information asymmetry. However, the interaction between assurance quality and disclosed connectivity of capitals is negatively associated with information asymmetry.²⁰

Based on a sample of 1564 multinational listed companies for the period 2002 through 2017, García-Sánchez et al. (2022) investigate the association between sustainability assurance and capital market outcomes, namely cost of capital and analyst forecast error. However, while the findings indicate that the provision of assurance is associated with lower analysts' forecast errors and lower cost of capital, assurance quality is positively associated with both forecast errors and cost of capital. The authors argue that the surprising results for assurance quality could possibly be explained by the audit expectation gap and the diminishing returns of sustainability assurance over time.

Next, we review three experimental studies focusing on individual investors' investment decisions. The first, Gerwanski et al. (2022), addresses whether nonprofessional investors value the assurance of integrated reports. Three aspects of the assurance of integrated reports are considered (1) the presence of assurance, (2) type of assurance provider (Big 4 vs. consultant), and (3) the level of assurance (reasonable vs. limited assurance). The design includes a control group with no assurance, yielding a $2 \times 2 + 1$ design. The experiment was conducted twice using German participants—one with Master's students (142 participants) and one with managers (82 participants). However, the results are not directly comparable across the two experiments because the experiment with managers represents a between-subject design (each participant receiving only one treatment), while the experiment with students represents a within-subject design (each participant receiving two treatments). A general concern of within-subject designs is that participants' second decisions are influenced by the first treatment. Consequently, it is difficult to ascertain whether participants' second decision is caused by the treatment or by their exposure to the first treatment. The authors include additional analyses to mitigate the effect of such carry-over effect on their inferences.

Gerwanski et al., (2022) document that assurance increases the investment level for student participants, while it decreases the investment level for managers. These findings should be evaluated within the context of the design. First, in an experimental setting, real-world complexity is reduced and the integrated reports are either assured or not. Practically, integrated reports are rarely completely assured by external providers. Second, the authors' main analysis includes participants who failed the manipulation check question intended to establish whether the participants correctly identified their assurance treatment (no vs. reasonable vs. limited assurance). A high proportion of participants failed this question—38% among students and 51% among managers. Excluding the participants who failed the manipulation check question from the sample, the presence of assurance increases the investment for student participants, while having no effect on the investment for managers.

Regarding the type of assurance provider (Big 4 vs. consultant), the findings reveal no significant differences between treatments in both the student and manager experiments. In terms of the assurance level (reasonable vs. limited), students invest more when the assurance level is higher, while no difference is found in the investments between the treatments for managers.

Finally, the authors conduct interviews with 16 managers subsequent to the experiment. In general, managers are skeptical about the value of integrated reporting for nonprofessional investors given the “complex, heterogeneous and nondecision useful reports in current practice” that would make assurance of such reports futile (Gerwanski et al., 2022, p. 114). The interviews suggest that managers' decisions in the experimental setting may have been negatively affected by their practical experiences with integrated reporting and assurance, technical doubts regarding the feasibility of the assurance of integrated reports, and negative perceptions about the audit profession fueled by corporate scandals.

In the second experimental study addressing individual investors' investment decisions, Hoang and Trotman (2021) investigate whether CSR assurance increases investors' fundamental value estimates and whether their estimates depend on the type of assurance (no assurance vs. reasonable assurance vs. limited assurance) and investors receiving a prompt to explicitly assess the company's performance (no explicit assessment vs. explicit assessment) based on a 3×2 between-subjects experiment with 179 Australian graduate business students serving as a proxy for nonprofessional investors.²¹ The authors argue that managers of companies in industries with a higher exposure to CSR issues have more incentives to “greenwash” in their reporting and to voluntarily report positive CSR news as opposed to negative news. Consequently, the experimental task involves a company in the mining industry that recently suffered a major CSR crisis and is reporting positive CSR news. This provides an extreme setting where investors' perceptions about any potential benefit of assurance on the reliability of CSR disclosures may be empirically detectable.

Hoang and Trotman's (2021) findings are summarized in Table 3, where the alphabetic letters A to F represent participants' mean value judgments across treatments. As is evident from Table 3, Hoang and Trotman's (2021) findings indicate that without a prompt to assess performance, reasonable assurance (E) leads to higher value judgments relative to no (A) or limited assurance (C), while the value judgments are marginally higher for limited assurance relative to no assurance. By contrast, with a prompt to assess performance, participants' value judgments do not significantly differ across the three assurance treatments ($B = D = F$). When participants in the reasonable assurance treatment are prompted to explicitly assess performance (F), they derive lower value judgments than participants in the reasonable assurance treatment who are not prompted to explicitly assess performance (E). The latter finding is consistent with affect-as-information theory, which in the context of this study, suggests that when CSR information is assured without a prompt to evaluate performance, investors experience positive feelings and use this as information to inform their value judgments. However, when investors are prompted to consider the company's performance, these positive feelings are diminished leading to lower value judgments. The prompt to assess performance makes no difference in the value judgments of participants in the no assurance

TABLE 3 Summary of findings.

Assurance decision	No explicit assessment	Explicit assessment	Findings
No assurance	A	B	A = B
Limited assurance	C	D	C = D
Reasonable assurance	E	F	E > F
	E > C > A	B = D = F	

(A = B) or limited assurance treatments (C = D). The authors note that their findings regarding the effect of explicit assessment on fundamental value judgment is hard to interpret in the absence of the true fundamental value estimate. Their findings could imply that investors overweight the value of assurance in the absence of explicit assessment of underlying performance, or it could imply that investors underweight the value of assurance in the presence of explicit assessment of performance.

In the final experiment on individual investors' investment decisions, Phang and Hoang (2021) examine whether combined assurance adds incremental value to the perceived reliability of positive CSR information and increases professional investors' willingness to invest in companies with negative financial performance relative to only traditional external CSR assurance. The combination of positive CSR information and negative financial performance may increase investors' concerns that management may portray CSR information to more favorably represent the underlying performance (i.e., management has high incentives to "greenwash" CSR disclosures to compensate for weak financial performance). In such a case, investors may seek assurance of the CSR information to alleviate their concerns about potential "greenwashing." The research question is investigated using a 2×2 between-subjects experiment and 92 professional investors from the US as participants, with financial performance (positive vs. negative) and combined assurance (external assurance statement vs. combined assurance statement) being manipulated. The findings indicate that professional investors perceive CSR information as more reliable and are more willing to invest in a company with negative financial performance when CSR information is accompanied by a combined assurance statement (including an external assurance statement) than when CSR information is only accompanied by an external assurance statement. However, the nature of the CSR assurance statement does not affect investors' decisions to invest when financial performance is positive.

7.3 | Other consequences

The other consequences investigated in our sample include cost of debt, access to credit, financial distress, financial performance, and future CSR performance. In experimental studies, the effect of assurance on accountants' perceptions about CSR information and jurors' negligence and punitive damage assessments are examined.

Carey et al. (2021), investigate whether voluntary sustainability assurance and the type of assurance provider (accountant vs. nonaccountant) are associated with lower capital constraints (the difficulty in raising all forms of capital including equity, borrowing, and liquidating assets) and the cost of debt for a sample of international companies from 39 countries from 2005 to 2015. Assurance data is obtained from the Sustainability Disclosure Database of the GRI and supplemented with hand-collected data from companies' sustainability reports sourced through the Corporate Register. The findings indicate that voluntary assurance is negatively associated with both capital constraints and cost of debt and that the effect is more pronounced for accounting assurance providers than nonaccounting assurance providers. In the case of capital constraints, the negative association with sustainability assurance is also more pronounced for companies operating in low investor protection and creditor rights countries. This finding suggests that voluntary assurance is more useful in countries with greater information asymmetry than in countries with strong institutions protecting the rights of investors and creditors. In additional analysis, the authors

document that voluntary assurance is positively associated with 1-year ahead return on assets; this effect does not differ significantly between accountant and nonaccountant assurance providers.

Zhang et al. (2022) examine the association between environmental assurance and access to finance and whether this association is affected by the gender composition of companies, both in terms of ownership and leadership, for a sample of 4966 SMEs across 39 countries from 2017 to 2019. The sample is constructed from the World Bank Enterprise Surveys and the data is also sourced from this survey. The assurance indicator variable is coded one for companies that indicated that they completed an external audit on any of the metrics of energy consumption, water usage, CO₂ emissions, or other pollutants over the last 3 years. Access to finance is an indicator variable that is coded one for companies with approved loan applications and zero for companies with unsuccessful loan applications or companies that did not apply for loans. Two variables capture gender diversity. The first variable is an indicator variable coded one for companies with female top managers and zero otherwise. The second variable is an indicator variable coded one for companies with 50% or more shares owned by females. Assurance is positively associated with the probability of gaining access to finance across all four models presented in the main results.²²

Medhioub and Boujelbene (2023) investigate whether integrated report assurance moderates the relationship between corporate tax avoidance and the cost of debt for a sample of 76 listed South African companies from 2010 to 2020. Their results indicate that tax avoidance is positively associated with the cost of debt, suggesting that lenders view tax avoidance as risky; this association is weaker when integrated reports are assured. This evidence suggests that the strategic, forward-looking, and credible information provided in assured integrated reports mitigates the opacity of tax avoidance for lenders.

Oware and Appiah (2022) examine the associations among CSR expenditure, CSR assurance practices, and the likelihood of financial distress for a sample of 80 listed companies in India from 2010 to 2019 (800 company-year observations). A company is regarded as facing financial distress when its earnings before interest, taxes, amortization, and depreciation is lower than expenses for the past two periods and the company experienced a decline in market value for two consecutive periods. CSR assurance practices include the presence of assurance, assurance provider (accounting vs. nonaccounting), and the level of assurance (limited vs. reasonable). While no association between the decision to assure CSR reports and financial distress is found, accounting assurance providers are associated with a lower likelihood of financial distress. The results from the level of assurance are mixed depending on model specifications.

The authors extend their analysis by investigating the association between CSR expenditure and financial distress, and whether this association is moderated by the CSR assurance practices variables. In general, the authors find that CSR expenditure is associated with a greater likelihood of financial distress. None of the assurance variables, including their interaction with CSR expenditure, are significant in any of the models. The authors draw some bold inferences from these nonresults including that “CSR assurance cannot enhance CSR reports’ credibility” and “CSR assurance is weak in the Indian context” (Oware & Appiah, 2022, p. 1485). Such inferences may be unwarranted given that the mechanism through which CSR assurance reduces financial distress or moderates the relationship between CSR expenditure and financial distress provided by the authors is indirect. The authors suggest that a reduction in information asymmetry sends “positive signals to investors who take decisions that affect firms in financial distress situations” and CSR assurance forcing companies “to present an

accurate picture of its CSR activities” and thereby not losing customer loyalty (Oware & Appiah, 2022, p. 1474). In addition, the assurance provider and level of assurance models are a subset of the assurance decision model. The authors' sample includes 800 company-year observations of which 36.4% provide assurance (from the descriptive statistics in their tab. 1). However, the assurance provider and assurance level models continue to use 800 observations (as opposed to approximately 291 observations). This design choice means that in the assurance provider models, the indicator variable to capture assurance provided by an accounting provider reflects zero for observations assured by nonaccountants *and* observations without assurance. As such, these models cannot distinguish between the accounting provider effects relative to the nonaccounting provider effects for companies providing assurance.

Oware et al. (2022) investigate whether external assurance and mandatory CSR reporting affect the association between philanthropic giving and financial performance (as measured by return-on-equity, return-on-assets, and stock price returns) for 80 companies between 2010 and 2019. The study uses the Indian setting where, since 2013, companies meeting certain size thresholds in any fiscal period are required to spend a specified percentage of their net profits on defined CSR activities (see Manchiraju & Rajgopal, 2017). Note that Oware et al. (2022) interpret this legislation as requiring mandatory CSR *reporting*, where, in fact, it requires mandatory CSR *expenditure*. The Indian legislation is specific on the expenditures that qualify as CSR, many of which are not related to the companies' core business (e.g., contributing to the prime minister's National Relief Fund and setting forth measures for the benefit of veterans, war widows, and their dependents). Accordingly, these expenses could be considered a tax rather than CSR expenses. According to Manchiraju and Rajgopal (2017), investors view these expenses as value-destroying. Regardless, Oware et al.'s (2022) findings reveal that philanthropic giving is positively associated with return-on-assets and stock price returns, but has no association with return-on-equity. Return-on-equity and return-on-assets are lower in the mandatory CSR period and stock price returns are higher. The decision to provide external assurance is positively associated with stock price returns, but has no association with accounting-based performance measures. The frequency of external assurance also increased in the CSR period. Oware et al. (2022) continue their analysis with nine models (see their tab. 6) where their interest is in various interaction variables. Since their models do not include main effects, these results are hard to interpret, and we refrain from commenting on them.

Rohani et al. (2023) examine carbon assurance for a sample of 170 US companies from 2012 to 2017 using CDP data. The authors argue that companies seeking legitimacy will use carbon assurance to advance their green image without improvements in carbon emissions. In such a case, carbon assurance will not be associated with changes in carbon performance. In contrast, the opinions and expectations of external parties could be implemented in management processes as a result of assurance to improve carbon performance. From this perspective, a higher level of assurance (i.e., reasonable assurance) could provide information to management on stakeholders' expectations about carbon performance that could be incorporated in management processes to reduce carbon emissions. Carbon performance is measured as the ratio of total Scope 1 and Scope 2 emissions to total sales (carbon emissions intensity ratio) and multiplied by negative one so that larger values indicate better performance. The findings indicate that the association between reasonable assurance (as opposed to limited assurance) and changes in carbon performance in the subsequent period is positive and marginally significant. However, the inferences should be considered with caution given that companies self-select to report their data to CDP.

Next, we discuss two experimental studies. Martinez et al. (2021) investigate whether professional accountants' perceptions about the perceived relevance of and confidence in CSR information is affected by assurance. The authors argue that CSR assurance could be used to signal the quality of disclosed information and companies' CSR performance or to legitimize companies' actions by meeting stakeholders' expectations through compliance. The authors attempt to disentangle the signaling versus legitimization mechanisms of assurance through an experiment involving 104 professional accountants in France, a country where CSR assurance has been mandatory since 2010. More specifically, the authors investigate whether the presence of assurance, the type of assurance provider (professional vs. other accountant), and the level of assurance (moderate vs. reasonable) affects professional accountants' perceived relevance of and confidence in CSR information.²³ Quantitatively, the authors find no difference in participants' perceptions about the relevance of and confidence in CSR information, regardless of the presence of assurance, type of assurance provider, or the level of assurance.

Two points regarding the authors' research design warrant further consideration. First, the design does not follow a classic between-subjects design. Five treatment groups are used (1) no assurance, (2) assurance by a professional accountant, (3) assurance by a nonprofessional accountant, (4) moderate assurance, and (5) reasonable assurance. Therefore, it is not clear what level of assurance was applicable in Groups 2 and 3 and what type of provider assured the information in Groups 4 and 5. Hence, the authors ignore the interactive effect whereby both the level of assurance and the type of provider could jointly impact the outcome. Second, while the authors state that participants were randomly assigned to the five treatment groups, Group 1 had substantially more participants than the remaining groups (33 vs. 18 or 17). In addition, while the authors argue that statistically no differences in the average of gender and professional experience across the treatments are found, large differences in mean values are evident between some groups. For example, Group 1 contained 76% male participants, while Group 4 contained 94%. Similarly, participants in Group 1 had on average 25 years' experience, whereas participants in Group 4 had on average 15 years' experience. In short, we posit that the lack of statistical significance may detect a real effect (i.e., no differences) or may not detect a real effect (i.e., differences) due to a lack of statistical power.

Martinez et al. (2021) identifying no differences between treatment groups is startling given that the participants are likely involved in providing these assurance services. This poses the question: Do professional accountants not believe in their own work? The authors probe this finding further through a qualitative analysis of responses to open-ended questions. Four themes are identified. First, participants raise concerns about the characteristics of CSR data including lack of verifiability and comparability. Second, the lack of standardization of CSR reporting impedes the reliability of CSR information. Third, participants question the value of the content of assurance statements that are perceived to lack useful information. Finally, professional accountants' question their own ability and educational background to be able to express opinions regarding CSR issues. Overall, the findings of Martinez et al. are more consistent with the legitimacy mechanism than the signaling mechanism. The authors offer an alternative explanation for their findings suggesting they could be reflective of experienced professional accountants resisting changes in an institutional field.

In the second experimental study, Stuart (2023) examines whether management's CSR motives and assurance affect jurors' negligence and punitive damage assessments. CSR activities can provide insurance-like protection from negative reactions during a corporate crisis if stakeholders view these CSR activities to be altruistic (without expectation of financial returns) as opposed to self-serving (with the expectation of a financial return). However, this

finding has not been examined within a litigation setting. The experiment included 182 participants eligible for juror selection from Amazon Mechanical Turk participating in a 2 × 2 between-subjects experiment with CSR motive and assurance being manipulated. The findings suggest that jurors reduce assessments of negligence and punitive damages in the presence of altruistic CSR activities. When the CSR disclosures are assured, no difference in jurors' assessments between altruistic and self-serving CSR activities are identified. Through process analysis, the authors show the effect these motives have on jurors' affective responses toward the defendant and their evaluation of the defendant's behavior before the negative event causes the associations between CSR motives and jurors' assessments.

8 | OTHER (QUALITATIVE) STUDIES

This section includes the limited number of nonpositivist studies included in our sample. Most are based on semistructured interviews and limited to a few countries (i.e., China, the UK, South Africa, Finland, Ghana, France). These studies utilize assurance service providers as interviewees (Channuntapipat, 2021; Gaudy & Malsch, 2023; Silvola & Vinnari, 2021); as well as company managers (Li et al., 2023; Richard & Odendaal, 2020), and regulators and quasi-regulators (Simpson et al., 2022).

The main objective of Channuntapipat (2021) is to understand if and how sustainability reporting assurance services can represent more than a verification tool and also serve as a tool capable of driving sustainable action. The study is based on in-depth semi-structured interviews with assurance practitioners in the UK, mostly representing Big 4 firms. The results suggest that assurance providers can move beyond their role as data verifiers to become change agents that can drive a shift in organizational culture. Such change could help organizations re-evaluate certain aspects of their business toward more sustainable operations.

Silvola and Vinnari (2021) examine auditors' attempts to promote sustainability assurance and promote it as a practice that requires their unique skills and competence. The study focuses on Finland and uses data from 40 interviews, conducted between 2010 and 2016 as well as a variety of publicly available documentary evidence as empirical material. The authors' goal is to determine how auditors promote sustainability assurance and how their efforts interact with the actions of others, as well as diverse societal logics. Regarding the latter, society consist of various groups whose interest may not be aligned to promote sustainability assurance. The findings suggest that Finnish auditors have engaged in policy work at the EU level in favor of mandatory sustainability assurance. The Finnish auditors have educated companies about sustainability assurance by providing training and, more indirectly, by offering governance recommendations in publicly available assurance statements. The auditing profession has also engaged in emulation, highlighting the similarities between sustainability assurance and financial auditing and drawing attention to robust internal controls and systematic methodology. The findings, however, suggest that auditors have failed to create a normative network around sustainability assurance in Finland that extends beyond major listed companies with international ownership. A possible explanation for the lack of demand for sustainability assurance is the refusal of institutional investors and the Prime Minister's office to take cultural measures to promote the practice.

Gaudy and Malsch (2023) examine auditors' search for meaningfulness in sustainability assurance work through ethnographic data collected over a 9-month period from two small accounting firms offering sustainability assurance services in France between 2018 and 2019.

“Meaningfulness” refers to the desire of humans to do work that creates a positive sense of purpose that is aligned with their own values. The findings indicate that auditors’ experiences of meaningfulness are facilitated by shared sustainability values among colleagues, social acknowledgment of like-minded profiles, and the belief that working in a “small firm” provides a more fulfilling and committed-to-sustainability environment than conventional assurance work in large accounting firms. The search for meaningfulness is often contrasted with the views of clients who see sustainability assurance as just another compliance exercise as opposed to a transformative practice. Despite, small firms perceived commitment to sustainability, auditors are aware of the decoupling of their own sustainability mission from the working conditions at the assurance firm (e.g., the firm has no sustainability targets), as well as the lack of sincerity of the firm’s internal commitment to the social and environmental cause, significantly eroding their path to fulfillment. The search for meaningfulness disintegrates when auditors realize not only the limits of their agentic and transformative capacities but also their unintended complicity in certifying the reports of companies with poor sustainability performance. Because they struggle to reconcile the assessment of their professional practice with their value system, the participants are tempted to disengage from their work by giving up a sustainability career and/or by reframing sustainability assurance work as an advisory rather than a control function.

Li et al. (2023) use a longitudinal fieldwork case study from 2014 to 2019 of a Chinese central state-owned enterprise operating in the energy sector that is a pioneer in sustainability reporting to examine the reluctance of Chinese corporate managers to provide sustainability assurance. The number of companies that have sustainability reports assured in China is low. The evidence suggests that, while managers recognize the benefits of external assurance, they are opposed to it given their deeply rooted allegiance to the dominant logic of sociopolitical stability in China. In an authoritarian regime, external assurance of the reporting of a central state-owned enterprise is perceived as an interference in political matters and a potential threat to China’s stability. Stability logic drives managers’ awareness of the possibility of leaking confidential and strategic information during the assurance process. Consequently, any threatening practice must be molded to gain control and autonomy to maintain the hegemony of stability. Instead of disregarding assurance, managers of the enterprise that the case is based on appear to use sustainability reporting as an opportunity to engage in internally crafted alternative manners to resist the rationality of external assurance. For example, managers offer stakeholder commentaries on the sustainability report as an alternative to external independent assurance.

Richard and Odendaal (2020) focus on assurance of integrated reports and examine the information provided in integrated reports published in 2015 by top 40 companies from the JSE and seven South African companies/organizations that participated in the IIRC pilot program. The authors also conduct two case studies using semistructured interviews, field notes, and company documents to collect data. The findings indicate that only 70% of the companies provide assurance for information other than their financial information presented within the integrated reports and that for those providing assurance the Big 4 dominate as the assurance provider. The assurance standard most frequently referred to in the context of nonfinancial information assurance is ISAE 3000. Limited assurance is referenced more often than reasonable assurance. The authors note the need to develop a new assurance standard, as well as to indicate who should be responsible for providing assurance on an integrated report. They further argue that regulating assurance on integrated reports could be valuable, but regulators should be cautious not to stifle innovation in this evolving field. The authors encourage the

accounting profession to explore more flexible, innovative approaches for assuring integrated reports.

Based on a series of semistructured reviews, Simpson et al. (2022) explore the assurance of ESG disclosures in Ghana. The study focuses on regulators' and quasi-regulators' (e.g., nonstate industry associations, chambers, and agencies) understanding of ESG assurance, their perception and preferences for assurance providers, and the considerations in selecting an assurance provider. The findings indicate that factors such as the emerging nature of ESG in Ghana, the interviewees' fields of work, the developing nature of the internal audit function, non-Big 4 audit firms, and the accounting profession are central to respondents' conceptualization of ESG assurance and their preference for different assurance providers. Additionally, a low preference for accountants, internal auditors, and non-Big 4 firms as ESG assurance providers is identified. According to the authors, accountants, non-Big 4 audit firms, and internal auditors should improve stakeholders' perception of their ESG assurance capabilities and independence. Moreover, considerations such as the value of expertise, independence, and regulators' reputation affect the choice of assurance provider.

Gillet-Monjarret (2022) conducts a content analysis of the websites of the 29 independent and accredited assurance providers in France to determine how they promote and legitimize their sustainability assurance missions.²⁴ The findings reveal that assurance providers legitimize their services by focusing on their knowledge, skills and/or experiences. Limited focus on the objective of sustainability assurance is found, that is, to attest to the quality of the nonfinancial information.

Finally, Bomheuer et al. (2020) conduct a case study of a multinational pharmaceutical producer with headquarters in Germany and subsidiaries in all five continents to understand how the requirements of external assurance providers could be used to increase the quality of health, safety, and environmental data with the view to improve assurance outcomes. The case presents the detail regarding the implementation of data management, processing and management systems to support a unified corporate sustainability strategy.

9 | IDEAS FOR FUTURE RESEARCH

Based on our literature review and recent practice developments, we offer suggestions for future research. The forthcoming issuance of ISSA 5000 will provide researchers with new archival data to use qualitative and experimental methods to address the key features of the proposed standard. In addition, many of the requirements of the proposed standard are similar to those of ISAE 3000; therefore, that data is available for archival researchers to contribute to the literature despite not yet having data on ISSA 5000 engagements.

While the literature on the determinants of assurance focuses mainly on the decision of whether or not to provide assurance, more research is needed on the determinants of assurance quality. As mentioned in Section 5, researchers are challenged by finding appropriate proxies for assurance quality beyond the characteristics of assurance statements. We encourage researchers to consider other potential outputs or outcomes of the assurance process that could be indicative of assurance quality, such as the expertise of the engagement team and the use of diverse testing procedures. We acknowledge that data on these variables are not widely available for large samples. Researchers could also consider adaptations of established proxies for financial statement audit quality. For example, Pinnuck et al. (2021) find that 39% of the CSR reports of G250 companies are restated with a median restatement of 10% suggesting that

restatements, as is the case for financial statement audit, can be one potential outcome indicative of assurance quality. Other alternative proxies could be to develop a sustainability assurance fee model (similar to the financial statement audit fee model) and discretionary emissions in the case of GHG assurance (similar to discretionary accruals that are often used as a proxy of financial statement audit quality).

Sustainability assurance may be used as a tick-box mechanism to meet regulatory requirements or expectations or used as part of a greenwashing strategy to hide poor CSR performance (Channuntapipat, 2021). This relates to the scope and level of the assurance engagement, as well as the criteria against which assurance is provided. Like ISAE 3000, the proposed ISSA 5000 requires that an assurance engagement must have a “rational purpose,” that is, the engagement as a whole will be useful and not misleading to intended users, the scope of the assurance engagement is appropriate, and, in the event of limited assurance, the assurance provider expects to obtain a meaningful level of assurance.²⁵ These requirements intend to avoid “managerial capture” where managers of companies restrict the scope and level of assurance to such a degree that the assurance process may be of limited value to users of the information, while creating a false sense of legitimacy. These requirements are also likely to assist assurance providers in finding meaning in their work (see Gaudy & Malsch, 2023). While the intention of the “rational purpose” test is clear, it also creates tension for assurance providers, especially accountants, in selling their assurance services in a highly competitive market where assurance is also provided by nonaccountants. Research on the application of the “rational purpose” requirement in a competitive assurance market and whether it achieves its intended objective is needed.

Related to assurance providers seeking meaning in their work (Gaudy & Malsch, 2023), little is known about the sustainability practices of the leading sustainability assurance providers. Much has been said in the literature about “managerial capture” and the risk that assurance is used as tool to provide legitimacy while CSR performance may be poor. Evidence on assurance providers' own sustainability practices could shed light on their commitment toward sustainability. Research that links assurance quality with assurance providers' sustainability commitment could provide insights on whether capital market outcomes are moderated by assurance providers' commitment toward sustainability.

When considering the coverage of geographical regions in the literature, Europe stands out, arguably due to the heightened emphasis placed on sustainability reporting and assurance, driven by the regulatory shifts introduced by CSRD and ESRS. Within Europe, understanding whether and why assurance quality differs between Western and Eastern Europe could be a useful expansion of the literature. A noticeable gap in the literature exists on Eastern European countries, which are trailing behind their Western European counterparts in terms of sustainability practices and reporting (KPMG, 2022). In addition, understanding how individual EU countries will approach the option given under CSRD of determining whether assurance services will be provided by accounting firms and other assurance providers, or only by accounting firms, and how this would affect assurance quality could assist regulators in evaluating the efficacy of their standards and regulations. Beyond Europe, the evidence of Li et al. (2023) (see Section 8) regarding the reluctance of Chinese managers to provide assurance requires further attention in the literature. China is a major player in the global economy and understanding how the uptake of assurance could be increased is necessary to assist standard setters and regulators in their task to ensure the global availability and comparability of sustainability information.

A need for evidence on assurance of the sustainability information provided by SMEs remains. Based on the sample of studies we reviewed, only three studies examine SMEs. In the EU, the new CSRD expands the scope of companies required to disclose sustainability information with mandatory assurance at the limited level. The new reporting requirements, after implemented into national laws of the member states, will encompass not only the large public interest entities but also other sizable enterprises and listed SMEs. For these entities, the recent regulatory developments in sustainability reporting may present challenges, particularly for those companies with limited prior reporting experience as well as limited resources to purchase external assurance. Understanding the role of assurance in facilitating these companies' transition to compliance with the new regulations provides a fruitful avenue for future in research.

Once data on ISSA 5000 assurance engagements become available, evaluating whether assurance quality and its consequences change from the pre- to the post-ISSA 5000 period could provide information to the IAASB on the efficacy of the new standard. In addition, as mentioned in Section 2, the proposed ISSA 5000 is profession-agnostic and can be used by assurance practitioners other than professional accountants provided that they meet ethics and quality management standards that are at least as demanding as those established by the IESBA and the IAASB. Questions arise as to whether assurance quality of engagements executed in terms of ISSA 5000 will vary between the type of assurance providers and how nonaccounting providers will evaluate their ethics and quality management standards against those established by the IESBA and the IAASB.

Assurance has the potential to establish and/or strengthen trust with various stakeholders. The proposed ISSA 5000 is user agnostic, meaning that it could be used for assurance engagements regardless of the intended users of the information. Building on Uyar's (2022) suggestion, understanding the expectations of a broader set of stakeholders, beyond investors, could assist companies in evaluating the objectives of their assurance. Additionally, evidence of how these stakeholders perceive the assurance provided, as highlighted by Kılıç et al. (2021), is lacking. This stakeholder perspective of assurance could provide evidence on how assurance functions within the dynamic framework of stakeholder relationships, contributing to a holistic comprehension of its impact and significance, as well as its role in trust-building processes.

As mentioned before, limited assurance of sustainability information will become mandatory for companies in the EU within the scope of the CSRD. This mandatory enforcement of limited assurance will provide an opportunity for a number of existing evidence obtained from voluntary regimes to be re-examined. The benefit of a mandatory regime is that it avoids the research design concerns of voluntary settings where companies self-select to provide assurance. Companies that select to voluntarily provide assurance have made cost versus benefit trade-offs and finding evidence on the benefits of assurance in these settings are, therefore, expected. Evidence from a mandatory setting can, therefore, reveal the lower bound of benefits associated with assurance. It will also be helpful to establish whether voluntary assurance at the reasonable level increases once the CSRD is effective.

Finally, given the lack of available high-quality data on sustainability assurance, we propose a greater emphasis on qualitative, experimental, and exploratory studies. For example, future studies could involve companies (e.g., case studies) through observation of their governance procedures and analyzing how governing bodies are involved in the assurance process. This approach may provide a more comprehensive understanding of the dynamics at play in the assurance ecosystem. Additionally, research on how educational institutions need to adapt

their curricula and pedagogy to equip future accountants to operate within the changing business environment with an increased focus on sustainability is much needed.

10 | CONCLUSION

In this literature review, we provide an update on the status of the literature on EER assurance following the review of Venter and Van Eck (2021). While Venter and Van Eck (2021) is a recent review, the EER landscape has undergone substantial transformations since its publication. The ongoing trend toward EER standardization has resulted in the formulation of new global reporting standards in 2023, namely IFRS S1 and IFRS S2 issued by the ISSB, alongside the 12 ESRS adopted by the EC. Both sets of standards are already applicable for financial years beginning January 1, 2024. Notably, efforts are underway to further expand these standards. The intensified standardization has heightened the emphasis on the reliability of the information to ensure stakeholder trust in the disclosures made in accordance with the standards mentioned above. This emphasis on reliability is underscored by the efforts in developing ISSA 5000, reflecting the growing need for robust assurance mechanisms in response to the evolving landscape of EER. These rapid practice developments are mirrored by academic research on the assurance of EERs.

As evidenced by the review of the 50 articles published between 2020 and August 2023, we find that the literature continues to be dominated by positivist (quantitative) research using archival and experimental methods. A key theme of this literature remains focused on the determinants and consequences of EER assurance. We identify “assurance quality” as a key construct in the archival literature and that the literature predominantly relies on characteristics of the assurance report to measure assurance quality. This approach raises concerns about construct validity as the wording of assurance reports is often boilerplate reflecting decisions about the scope and level of assurance engagements. We provide several ideas to advance this literature. We hope that our review could serve as a reference for researchers interested in EER assurance. Additionally, our review could offer practical utility to regulators and standard setters as they navigate this evolving landscape.

Looking at the EER assurance from a broader perspective, it is worth adding that while the rapid developments of sustainability reporting and assurance are envisaged to bring benefits to users of sustainability information, and society, at large, they also bring about challenges for assurance providers, necessitating the development of new skills, and maintaining independence and quality work, while navigating a competitive market. Educational institutions will, therefore, need to adapt their curricula to meet the changing expectations of accountants in a society where the demand for high-quality information beyond traditional financial statements is rising.

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ENDNOTES

- ¹ Extended external reporting refers to corporate reporting beyond information included in the traditional financial statements. These reports are commonly referred to as sustainability, corporate social responsibility, nonfinancial or environmental, social, and governance (ESG) reports.
- ² Once effective, the CSRD replaces the nonfinancial Reporting Directive (NFRD) (Directive 2014/95/EU).
- ³ Once ISSA 5000 is issued, ISAE 3410 will remain relevant to assurance opinions on a greenhouse gas statement. ISAE 3000 (Revised) will continued to be used for assurance engagements that are not audits or reviews of financial statements or engagements on sustainability information (IAASB, 2023c). The EER guidance will also remain as nonauthoritative guidance on EER assurance engagements, including assurance engagements on sustainability information (IAASB, 2023b).
- ⁴ According to the ED, a limited assurance engagement is one where the assurance provider concludes whether “based on the procedures performed and evidence obtained, a matter(s) has come to the practitioner’s attention to cause the practitioner to believe that the sustainability information is materially misstated” (IAASB, 2023d, p. 8). A reasonable assurance engagement is one where the assurance provider’s conclusion is “expressed in a form that conveys the practitioner’s opinion of the outcome of the measurement or evaluation, including presentation and disclosure, of sustainability matters against the applicable criteria” (IAASB, 2023d, p. 8). Reasonable assurance is a higher level of assurance than limited assurance. The level of assurance obtained in a reasonable assurance engagement is equivalent to an audit of financial statements, while limited assurance is equivalent to a review of financial statements (IAASB, 2023c). Once effective, the EU CSRD will mandate assurance of sustainability information at a limited level, with a gradual transitioning to reasonable assurance, for companies within the scope of the regulation (refer to Directive 2022/2464/EU).
- ⁵ Combined assurance integrates and optimizes all assurance functions to provide an effective control environment that supports the integrity of information used for internal decision-making and external reporting.
- ⁶ Journals are ranked into A*, A, B, and C quality categories, with A* being the highest ranking. Refer to www.abdc.au.edu.
- ⁷ We urge readers to refer to these discussions and reviews, because they are complementary to ours: Bakarich et al. (2020), De Villiers et al. (2022), Yan et al. (2022), and Zhou (2022).
- ⁸ Fan et al. (2021) attempt to address selection bias by implementing the Heckman two-stage model.
- ⁹ Since 2008, the Shenzhen and Shanghai stock exchanges have required specific companies to publish a CSR report with their annual report.
- ¹⁰ The IIRC Framework defines “integrated thinking” as “the active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects” (IIRC, 2021, p. 53).
- ¹¹ Bartoszewicz and Rutkowska-Ziarko (2021) provide survey evidence on the factors affecting the implementation of sustainability assurance in Poland based on 12 survey responses. Given the small sample size, we refrain from commenting on the inferences.
- ¹² Donkor et al. (2021) state that their proxy of accruals-based earnings management is the aggregate of three accruals-based earnings management proxies frequently used in the literature. However, the authors do not explain how the three measures are aggregated and whether higher values of their aggregated proxy are indicative of more earnings management. As each of the three accruals-based earnings management proxies produce signed discretionary accruals, researchers frequently take the absolute value of the signed accruals so that higher values of discretionary accruals suggest more earnings management. Alternatively, researchers separately present findings for positive and negative discretionary accruals.
- ¹³ Emphasis added.

- ¹⁴ For example, SDG 3, “ensure healthy lives and promote well-being for all at all ages,” has “reduces maternal mortality” as a target with the “maternal mortality ratio” and “skilled birth attendance” as indicators. While a clear business case for companies in the healthcare sector to report on this goal exists, the relevance of this SDG for companies in the financial industry is less evident. The relevance of a particular goal also varies substantially between countries.
- ¹⁵ For example, maternal deaths in North America were approximately 760 in 2017, compared to approximately 200,000 in Sub-Saharan Africa. See Number of maternal deaths by region, 2000–2017 (ourworldindata.org).
- ¹⁶ This is an interpretation of the results presented in tab. 9 of Sierra García et al. (2022). The authors, however, suggest, the opposite, namely that the involvement of KPMG or PwC has a strong influence. In each case, the coefficient for the variable type of assessor is negative and statistically significant, in comparison with a nonaccountant provider. In other words, companies that select KPMG or PwC to assure their sustainability information, rather than a nonaccounting firm, “are more likely to address the SDGs in their sustainability reports, a finding that is supported by legitimacy, stakeholder, and signaling theories” (Sierra García et al., 2022, p. 888).
- ¹⁷ The level of assurance categories (no assurance, limited assurance, reasonable assurance, or high assurance) are taken from the CDP data. The 2022 CDP questionnaire distinguishes between “limited assurance,” “moderate assurance,” “reasonable assurance,” “high assurance,” and “third party verification/assurance underway.” Whether an ordinal difference between these levels of assurance exists is not evident.
- ¹⁸ The categories are based on the options within the CDP survey. “High” and “moderate” levels of assurance are based on the terminology used in AA 1000 AS issued by AccountAbility. The authors, however, code the level of assurance as an ordinal variable where zero is the lowest level (no assurance) and four is the highest level (high assurance). This coding scheme assumes that limited assurance in terms of ISAE 3000 is better than moderate assurance in terms of AA 1000 AS. Similarly, the coding scheme assumes that “high assurance” in terms of AA 1000 AS is better than “reasonable assurance” in terms of ISAE 3000. This ordinal ranking has no justification in literature.
- ¹⁹ See “data sources” used by CSRHUB at <https://www.csrhub.com/frequently-asked-questions-about-esg>.
- ²⁰ The disclosed connectivity of capitals is measured based on manual coding of the integrated reports and assumes that close proximity of disclosures suggests causal relationships and textual connectivity.
- ²¹ Similar to Gerwanski et al. (2022), a large percentage of participants (51%) failed the manipulation check question to identify their assurance treatment. Unlike Gerwanski et al. (2022), the Hoang and Trotman (2021) main findings exclude participants that failed the manipulation checks. However, in additional analyses, the authors find that their inferences remain unaffected when they include participants that failed the manipulation checks.
- ²² The interpretation of the results of the gender variables are hard to interpret, because the authors specify the models with the assurance main effect and an interaction between assurance and gender without including gender separately as a main effect. The authors argue that such a specification means the assurance variable captures the effect of assurance for male-led (or owned) companies, while the interaction variable captures the effect of assurance for female-led (or owned) companies.
- ²³ Despite the participants coming from a setting where assurance is mandatory, the authors examine experimentally whether the presence of assurance affects participants’ decisions.
- ²⁴ Through the Grenelle 2 law, assurance of the nonfinancial performance declaration in terms of European Directive 2014/95/EU by an independent third party is required for French companies listed on a regulated market for financial years ending since December 31, 2011 and for unlisted companies meeting specific size thresholds for financial years since December 31, 2016. Independent third-party assurance providers must be accredited by the French Accreditation Committee (COFRAC) (Gillet-Monjarret, 2022).

- ²⁵ According to the proposed ISSA 5000, a meaningful level of assurance is likely to enhance the confidence of the intended users of the information about the sustainability of the information to a degree that is clearly more than inconsequential.

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