

# Research on extended external reporting assurance: Trends, themes, and opportunities

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## Abstract

The assurance of non-financial information (NFI) included in extended external reports (EERs) is a global activity that has far-reaching consequences for business, investors, other stakeholders, and society. EERs remain largely unregulated with few standards. Along with our companion paper (Krasodomska, Simnett, & Street, 2021, *Journal of International Financial Management and Accounting*, 25, 209), we contribute to the current discussion on EER assurance by providing an overview of the academic literature to inform the standard setting initiatives of the International Auditing and Assurance Standard Setting Board (IAASB), as well as the practice of assurance of EERs. We identify 121 articles on extended external reporting (EER) assurance published between 2009 and 2020 across 35 journals ranked A\*, A, and B on the Australian Business Deans Council (ABDC) 2019 Journal Quality List. These articles cover archival, experimental, interviews, case studies, surveys, and content analysis research methods and serve as a possible input for standard setting activities. We document a rapid increase in this literature with almost half of the articles published in the last 3 years, 2018 to 2020. Finally, we offer ideas for future research directly linked to the proposed Guidance of the IAASB on EER assurance. We encourage researchers to engage in these and other issues of the IAASB's Guidance to assist them with valuable input for their standard setting activities.

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**KEYWORDS**

assurance, corporate social responsibility, extended external reports, non-financial information, sustainability

## 1 | INTRODUCTION

Firms are increasingly providing additional information to the market in the form of extended external reports (EERs) such as environmental, social and governance (ESG) reports, corporate social responsibility (CSR) reports, sustainability reports, and, more recently, integrated reports.<sup>1</sup> These reports contain non-financial information (NFI) that is traditionally not part of the financial statements but is nevertheless useful for users' decision-making, because it communicates to capital providers and other stakeholders the effects of a firm's business and its associated risks on society and the environment. KPMG (2017) reports that 93% of the Fortune Global 250 firms produce EERs, compared to 35% in 1993. As EERs are often issued voluntarily, are unregulated, consist of diverse underlying subject matters, are presented in diverse forms, and commonly include narrative and forward-looking information, they are at risk of lacking credibility and serving managers own interests. As a result, the related demand for the independent assurance of such EERs is growing rapidly. KPMG (2017) documents that 67% of the Fortune Global 250 firms obtain independent assurance on their EERs, compared to 30% in 2005.

Unlike financial statement audits, the guidance and research on EER assurance are limited. Professional accountants conduct EER assurance engagements in terms of the International Standard on Assurance Engagements (ISAE) 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the International Audit and Assurance Standards Board (IAASB) in 2003 ("ISAE 3000") and revised in 2013 ("ISAE 3000 (Revised)"). The IAASB is in the process of issuing non-authoritative guidance on assurance engagements undertaken in accordance with ISAE 3000 (Revised) ("the Guidance").<sup>2</sup>

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. Our review includes 121 articles published between 2009 and 2020 across 35 journals ranked A\*, A, and B on the Australian Business Deans Council (ABDC) 2019 Journal Quality List. Our intention is to provide an overview of this literature to inform the standard setting initiatives of the IAASB, as well as the practice of EER assurance.

Our review complements and extends previous reviews by Cohen and Simnett (2015a, 2015b), Farooq and De Villiers (2017), Gillet-Monjarret and Riviere-Giordano (2017), Maroun (2020), and Velte and Stawinoga (2017). Cohen and Simnett (2015a) introduce and review five articles in a special edition of *Auditing: A Journal of Practice & Theory* and provide a research agenda (2015b). Farooq and De Villiers' (2017) review focuses on the market for sustainability assurance services. They review 50 articles from 28 journals published from 1998 to 2015. Gillet-Monjarret and Riviere-Giordano (2017) review 56 articles over the period 1985 to 2015. Maroun (2020) develops a conceptual model from the literature which distinguishes between determinants of non-financial assurance at the national and firm level. Velte and Stawinoga (2017) review 53 articles from 2000 to 2016.

In addition, Simnett et al. (2016) identified that only six of 130 international (non-U.S.) archival auditing and assurance research articles published in eight leading accounting and auditing journals from 1995 to 2014 related to EER assurance. In the behavioral research methodology, Simnett and Trotman (2018) identified that only six of 468 experimental auditing research papers published in ten

leading accounting and auditing journals from 1991 to 2015 related to EER assurance. Collectively, these two studies show that research on EER assurance has been a poor cousin to research on financial statement audits in the leading journals.

Given the scope of these previous reviews and their publication dates, we contribute to the EER literature by being the most current and comprehensive review to date. In line with the increased attention paid to the practice and standard setting of EER assurance, we note an upsurge in the research literature, with 48.8% of the articles in our sample published since 2018 and not covered by the aforementioned reviews.<sup>3</sup> In addition, we provide suggestions for future research directly linked to the IAASB's Guidance on EER that will assist academics in taking this literature forward. Our study should be read together with Krasodomaska et al. (2021) which provide an overview of the current practices and challenges related to EER.

The remainder of this study is structured in 12 sections. Section 2 provides a brief background to the two most commonly applied assurance standards. Section 3 contains the method, and Section 4 provides a discussion of publications trends and themes. Section 5 discusses the archival literature in terms of two broad categories, including the determinants and consequences of the decision to assure, as well as the choice of the assurance provider. Section 6 reviews experimental research. Section 7 provides an overview of content analyses studies. Section 8 discusses the literature on interviews and case studies. Section 9 synthesizes the survey literature. Section 10 discusses articles using other methods (including mixed methods and the analytical method). Section 11 provides ideas for future research, and Section 12 closes the paper.

## 2 | BACKGROUND TO ASSURANCE STANDARDS

The aim of this study was to review the academic literature on EER assurance. As a first step, we provide a brief background on the two international standards most commonly applied to guide EER assurance engagements in practice (Maroun, 2020; Simnett, 2012). These two standards include the AA 1,000 Assurance Standards, more specifically AA 1,000 AS, issued by AccountAbility and ISAE 3,000, issued by the IAASB.

While AA 1,000 AS was specifically designed for sustainability assurance engagements (Manetti & Becatti, 2009), ISAE 3,000 is an “umbrella” standard designed for the assurance of non-financial reports based on the concepts, principles, and procedures used in financial statement audits (Farooq & de Villiers, 2017; Manetti & Becatti, 2009). ISAE 3,000 was not specifically designed for sustainability assurance engagements (Ackers, 2009; Manetti & Becatti, 2009). Whereas members of the accounting professions mostly use ISAE 3,000 when providing sustainability assurance, AA 1,000 AS is used mainly by members outside the accounting profession (Ackers & Eccles, 2015; Manetti & Becatti, 2009; Simnett, 2012).

ISAE 3,000 proposes two levels of assurance, being either a “reasonable” or “limited” level (IAASB, 2013). Similarly, under AA 1,000 AS assurance can be provided at a “high” or “moderate” level (AccountAbility, 2020). Unlike ISAE 3,000, AA 1,000 AS provides for two types of assurance engagements, “Type 1” and “Type 2.” Under a Type 1 engagement, the extent of adherence to the AA 1,000 Accountability Principles is evaluated. A Type 2 engagement evaluates both the extent of adherence to the AA 1,000 Accountability Principles and the quality of and reliability of information (AccountAbility, 2020). Prior research shows that moderate/limited assurance has become more prominent than reasonable/high assurance, especially with large accounting firms being more likely to issue the former (Cuadrado-Ballesteros et al., 2017; Fuhrmann et al., 2017; Green & Zhou, 2013; Martínez-Ferrero & García-Sánchez, 2018; Mock et al., 2013). Since the objectives of

**TABLE 1** Trends in academic publications addressing Extended External Reporting Assurance (Continues)

<i>Panel A: Publications by year and journal ranking</i>							
Year	Journal rank			Total			
	A*	A	B				
2009–2011	6 (46.2%) [17.1%]	4 (30.8%) [7.8%]	3 (23.1%) [8.6%]	13 (100.0%) [10.7%]			
2012–2014	1 (6.7%) [2.9%]	9 (60.0%) [17.6%]	5 (33.3%) [14.3%]	15 (100%) [12.4%]			
2015–2017	9 (26.5%) [25.7%]	15 (44.1%) [29.4%]	10 (29.4%) [28.6%]	34 (100%) [28.1%]			
2018–2020	19 (32.2%) [54.3%]	23 (39.0%) [45.1%]	17 (28.8%) [48.6%]	59 (100%) [48.8%]			
Total	35 (28.9%) [100.0%]	51 (42.1%) [100.0%]	35 (28.9%) [100.0%]	121 (100.0%) [100.0%]			
<i>Panel B: Publications by method and year</i>							
Year	Method						Total
	Archival	Experimental	Content analysis	Interviews	Survey	Other	
2009–2011	2 (15.4%) [3.3%]	3 (23.1%) [20.0%]	3 (23.1%) [16.7%]	4 (30.8%) [22.2%]	0 (0.0%) [0.0%]	1 (7.7%) [33.3%]	13 (100.0%) [10.7%]
2012–2014	7 (46.7%) [11.7%]	1 (6.7%) [6.7%]	3 (20.0%) [16.7%]	0 (0.0%) [0.0%]	3 (20.0%) [42.9%]	1 (6.7%) [33.3%]	15 (100.0%) [12.4%]
2015–2017	18 (52.9%) [30.0%]	4 (11.8%) [26.7%]	7 (20.6%) [38.9%]	3 (8.8%) [16.7%]	2 (5.9%) [28.6%]	0 (0.0%) [0.0%]	34 (100.0%) [28.1%]
2018–2020	33 (55.9%) [55.0%]	7 (11.9%) [46.7%]	5 (8.5%) [27.8%]	11 (18.6%) [61.1%]	2 (3.4%) [28.6%]	1 (1.7%) [33.3%]	59 (100.0%) [48.8%]
Total	60 (49.6%) [100.0%]	15 (12.4%) [100.0%]	18 (14.9%) [100.0%]	18 (14.9%) [100.0%]	7 (5.8%) [100.0%]	3 (2.5%) [100.0%]	121 (100.0%) [100.0%]

(Continues)

**TABLE 1** (Continued)

<i>Panel C: Publications by method and journal ranking</i>				
Method	Journal rank			Total
	A*	A	B	
Archival	13 (21.7%) [37.1%]	28 (46.7%) [54.9%]	19 (31.7%) [54.3%]	60 (100.0%) [49.6%]
Experimental	9 (60.0%) [25.7%]	3 (20.0%) [5.9%]	3 (20.0%) [8.6%]	15 (100.0%) [12.4%]
Content analysis	1 (5.6%) [2.9%]	10 (55.6%) [19.6%]	7 (38.9%) [20.0%]	18 (100.0%) [14.9%]
Interviews	12 (66.7%) [34.3%]	3 (16.7%) [5.9%]	3 (16.7%) [8.6%]	18 (100.0%) [14.9%]
Surveys	0 (0.0%) [0.0%]	6 (85.7%) [2.0%]	1 (14.3%) [5.7%]	7 (100.0%) [5.8%]
Other	0 (0.0%) [0.0%]	1 (33.3%) [2.0%]	2 (66.7%) [5.7%]	3 (100.0%) [2.5%]
Total	35 (28.9%) [100.0%]	51 (42.1%) [100.0%]	35 (28.9%) [100.0%]	121 (100.0%) [100.0%]
<i>Panel D: Journals with the highest frequency of articles addressing Extended External Reporting Assurance</i>				
	Number of articles	% of total		
Journal of Business Ethics (A)	13	10.7%		
Accounting, Auditing and Accountability Journal (A*)	12	9.9%		
Auditing: A Journal of Practice and Theory (A*)	11	9.1%		
Sustainability Accounting, Management and Policy Journal (B)	11	9.1%		
Managerial Auditing Journal (A)	7	5.8%		
Total	54	44.6%		
<i>Panel E: Publications by country</i>				
	Number of articles	% of total		
International	35	29.2%		

(Continues)

**TABLE 1** (Continued)

<i>Panel E: Publications by country</i>		
	<b>Number of articles</b>	<b>% of total</b>
Europe	5	4.2%
Two or more countries	12	10.0%
Australia	13	10.8%
Bangladesh	1	0.8%
China	2	1.7%
Finland	1	0.8%
France	4	3.3%
Germany	2	1.7%
Ghana	1	0.8%
Italy	1	0.8%
Japan	2	1.7%
Malaysia	2	1.7%
Netherlands	1	0.8%
Portugal	1	0.8%
South Africa	15	12.5%
Spain	1	0.8%
Taiwan	1	0.8%
U.K.	6	5.0%
U.S.	14	11.7%
Total	120	100.0%

*Note:* This table provides descriptive statistics on the academic publications addressing EERs. In Panels A to C, the percentage in rows (columns) are indicated in brackets (square brackets). In Panel E, the total of number of articles is 120, because it excludes the analytical study.

these two standards differ, they appear to be complementary in nature rather than substitutes for one another (Ackers, 2009; Iansen-Roegers & Oelschlaegel, 2005; Kolk & Perego, 2010; O'Dwyer & Owen, 2007).

### 3 | METHOD

We search the Academic Source Complete and Business Source Complete databases of EBSCOhost together with Scopus 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," "non-financial," and "sustainability".<sup>4</sup> We also search for "combined assurance" as a credibility-enhancing technique.<sup>5</sup> To find early view articles that are not in print yet, we also search Google Scholar for 2020.<sup>6</sup> This process identifies 205 articles. To ensure our review focuses on current high-quality research, we limit the articles included in our review to those ranked A\*, A, and B on the ABDC 2019 Journal Quality List and published since 2009.<sup>7</sup> We review articles from the "accounting," "finance," and "business and management" fields of research according to the ABDC list to ensure that we focus

on articles relevant to the accounting, finance, and management disciplines. We exclude discussions, literature reviews, and article reviews from our analysis since these types of articles do not contain new empirical evidence. Our final sample consists of 121 articles across 35 journals. We analyze the 121 articles in Atlas.ti and code articles according to method, theory, country, references to standards, design features, implications for practice, and ideas for future research.

## 4 | TRENDS AND THEMES IN PUBLICATIONS

Table 1, Panel A, contains the number of publications grouped in three-year periods, together with the journal ranking. In terms of journal ranking, 42.1% of the articles are published in A-rated journals, with an equal number (28.9%) being published in A\*- and B-rated journals. There has been a monotonic increase in the number of articles from 13 (10.7%) in the 2009 to 2011 period to 59 (48.8%) in the 2018 to 2020 period. This evidence shows an increased interest from academic researchers in assurance on EERs. While the percentage of articles published in B-rated journals remained fairly static across time, the percentage of articles published in A\*- and A-rated journals fluctuated.

Our sample includes articles across all the major methods typically used in accounting research. Table 1, Panel B, sets out the number of articles published by method and across time. Not surprisingly, the most common research approach was archival methods (49.6%), with a fairly equal spread between experimental (12.4%), content analysis (14.9%), and interviews (14.9%). Survey methods (5.8%) and other methods (2.5%), such as analytical and mixed methods, make up the remainder of the articles. In the first three years of our sample, the literature was dominated by interviews (30.8%), experimental methods (23.1%), and content analysis (23.1%). During these first three years, the application of archival methods was low (15.4%), possibly due to the necessity to hand collect data and limited observations to conduct statistical tests. From 2012 onwards, archival research comprises the majority of the articles.

To provide evidence on whether the various methods cluster by journal ranking, Table 1, Panel C, contains the number of articles by method and journal rank. Of the 35 articles published in A\*-rated journals, 37.1% used archival methods, 34.3% conducted interviews, and 25.7% used experimental methods. Hence, while the entire sample contains only 12.4% experiments and 14.9% interviews, these methods constitute a greater proportion of the articles published in A\* journals. This could be due to a number of reasons, including the strengths of these methods (e.g., high on internal validity).

Another reason for the success of experiments and interviews in A\*-rated journals is evident from Table 1, Panel D, which contains the five journals that published the most articles on EER assurance. Two A\*-rated journals, *Auditing: A Journal of Practice and Theory* and *Accounting, Auditing and Accountability Journal*, both of which frequently publishes experimental and qualitative research, are among these five journals. Taken together with Table 1, Panel C, this means these two journals have published 65.7% (23 articles) of all the articles published in A\*-rated journals, with the remaining articles published in *European Accounting Review* (6 articles), *The British Accounting Review* (2 articles), *Contemporary Accounting Research* (2 articles), *The Accounting Review* (1 article), and *Accounting, Organizations and Society* (1 article). Together, the top five journals contained in Table 1, Panel D, published 44.6% of the articles in our sample. This is remarkable considering that our sample includes 35 journals.

Table 1, Panel E, contains the distribution of articles according to the country included in the sample. The first three categories contain cross-country studies. We include articles in the “two or more countries” category when the sample is not specifically described as international or European, and the article includes data from two or more countries. International data (29.2%) are used the most

frequently, followed by a high frequency of single country studies from South Africa (12.5%), U.S. (11.7%), and Australia (10.8%).

Regarding themes, the archival literature tends to focus on determinants and consequences of EER assurance. There is more overlap in themes between the other methods. Common themes that are addressed within the experimental, content analyses, interviews, case studies, and survey literature include the (1) credibility of EERs, (2) independence of assurers, (3) lack of regulation and standards, (4) understandability of assurance report, (5) legitimacy of the firm seeking assurance and the assurer, (6) level and scope of the assurance engagement, (7) materiality, (8) managerial capture, (9) professionalization, (10) stakeholder engagement, (11) tension between accounting and non-accounting assurers, and (12) value added by assurance. These issues are discussed in more detail in the separate sections that follow (Sections 5 to 10).

## 5 | ARCHIVAL RESEARCH

Of the 121 articles, 60 use archival data to examine EER assurance. The areas of research can be categorized into two broad categories, including (1) the firm-, industry-, and country-level determinants of the decision to assure NFI, as well as the choice of EER assurance provider, and (2) the consequences related to the decision to obtain EER assurance, as well as the choice of EER assurance provider.

### 5.1 | Determinants

In examining the factors that drive the demand for assurance, as well as the choice of the assurance provider, studies focus on firm-, industry-, and country-level characteristics. Each factor, including the related archival literature, is discussed in the sections that follow.

#### 5.1.1 | Firm-level characteristics

In terms of the firm-level characteristics associated with the demand for assurance and the choice of assurance provider, studies mainly consider firm size, profitability, leverage, the extent/level and quality of non-financial disclosures, social and environmental performance, corporate governance characteristics, and other firm-level characteristics. Table 2 provides a summary of the main findings of this literature.

Due to increased public scrutiny and extensive monitoring, some argue that larger firms, more profitable firms, and highly leveraged firms are likely to obtain assurance (Casey & Grenier, 2015; Simnett et al., 2009). In addition, these firm-level characteristics may also impact the choice of the assurance provider.

Focusing on the association between firm size and assurance, Simnett et al. (2009) and Fernandez-Feijoo et al. (2015) find that firm size is a significant determinant of assurance for a sample of international firms. Similarly, in the U.S. context, Casey and Grenier (2015) and Datt et al. (2019) document a positive association between firm size and the decision to obtain sustainability and carbon emission assurance. This association also holds in the Portuguese setting (Branco et al., 2014). On the contrary, prior research finds that firm size is not a significant determinant of assurance for Australian and U.K. listed firms (Kend, 2015), for an international sample of sustainability reporters (Sethi et al., 2017), for international cooperative and mutual organizations (Bollas-Araya et al., 2019), and for U.S. firms



**TABLE 2** Firm-level determinants of assurance and assurer

Authors	Country	Determinants of assurance decision						Corporate governance characteristics
		Firm size	Profitability	Leverage	Extent/level and quality of reporting	Social and environmental performance		
<i>Panel A: Assurance decision</i>								
Simnett et al. (2009)	31 countries	Positive association	No association	No association				
Fernandez-Feijoo et al. (2015)	22 countries	Positive association						
Casey and Grenier (2015)	U.S.	Positive association	No association	Negative association				
Datt et al. (2019)	U.S.	Positive association	No association	Negative association				
Branco et al. (2014)	Portugal	Positive association	Positive association	Negative association				
Kend (2015)	Australia & U.K.	No association	Positive association					Positive association audit committee characteristics
Sethi et al. (2017)	43 countries	No association	Negative association				Positive association quality	
Bollas-Araya et al. (2019)	28 countries	No association						
Cho et al. (2014)	U.S.	No association	No association	No association			Positive association extent	

(Continues)

TABLE 2 (Continued)

Authors	Determinants of assurance decision						
	Country	Firm size	Profitability	Leverage	Extent/level and quality of reporting	Social and environmental performance	Corporate governance characteristics
Dutta (2019)	Finland					Positive association	
Simoni et al. (2020)	Europe					Positive association	Positive association
Clarkson et al. (2019)	40 countries				Positive association extent	Positive association	
Hassan et al. (2020)	Bangladesh				Positive association extent		
Liao et al. (2018)	China						Positive association board characteristics
Peters and Romi (2015)	U.S.						Positive association environmental committee expertise, CSO and CSO expertise
Datt et al. (2018)	44 countries						Positive association environmental committee
García-Sánchez et al. (2019)	19 countries						Positive association CSR committee

(Continues)

**TABLE 2** (Continued)

Authors	Determinants of assurance decision							Corporate governance characteristics
	Country	Firm size	Profitability	Leverage	Extent/level and quality of reporting	Social and environmental performance		
<i>Panel B: Accounting assurance provider</i>								
Simmnett et al. (2009)	31 countries	Positive association	No association	Negative association				
Fernandez-Feijoo et al. (2015)	80 countries	Positive association						
Casey and Grenier (2015)	U.S.	No association	No association	Negative association				
Kend (2015)	Australia & U.K.	No association	No association					Positive association sustainability and governance committees
Bollas-Araya et al. (2019)	28 countries	Positive association						
Wong et al. (2016)	U.K. & U.S.	Positive association	Positive association	No association				
Mock et al. (2013)	26 countries	Positive association						
Clarkson et al. (2019)	40 countries					Positive association	Positive association	
Peters and Romi (2015)	U.S.							Positive (negative) association environmental committee (CSO) expertise
Liao et al. (2018)	China							Positive association board

Panel A summarizes the firm-level determinants of the decision to obtain external assurance on non-financial information. Panel B summarizes the firm-level determinants of the decision to obtain assurance from an accounting provider. We only examine those determinants that are included as independent variables. Control variables are not examined, except for Simnett et al. (2009) which was the first study to examine firm-level determinants for assurance and the choice of the independent external assurance provider.

(Cho et al., 2014). These results may be driven by the legal origin of the countries included in the respective samples. Due to increased public scrutiny and extensive monitoring, larger firms domiciled in common law countries may be less inclined to obtain assurance due to the high legal liability and litigation risk in these countries (Kolk & Perego, 2010; Simnett et al., 2009).<sup>8</sup>

In terms of the choice of the assurance provider, Simnett et al. (2009), Mock et al. (2013), Fernandez-Feijoo et al. (2015), Wong et al. (2016) and Bollas-Araya et al. (2019) find that size is associated with the decision to use an accounting assurance provider. This may be driven by the perception that accounting assurance providers offer higher quality assurance. Conversely, Kend (2015) and Casey and Grenier (2015) find that larger firms are not more likely to use an accounting assurance provider. Casey and Grenier (2015) argue that the results can be driven by the low demand for assurance services in the U.S. due to potential litigation risk faced by accounting firms. In addition, the authors argue that it can be driven by ineffective marketing of assurance services to large U.S. firms.

Focusing on profitability as a driver of the demand for assurance, Branco et al. (2014) find that firm profitability is positively associated with the assurance for a sample of Portuguese firms. Kend (2015) reports the same association for a sample of Australian and U.K. firms. Contrary to this, for an international sample, Sethi et al. (2017) document a negative association between firm profitability and assurance. Simnett et al. (2009), using an international sample, and Casey and Grenier (2015), Cho et al. (2014), and Datt et al. (2019), in the U.S. context, do not find a significant association between the decision to assure and firm profitability.

In terms of the choice of the assurance provider, Simnett et al. (2009), Casey and Grenier (2015), and Kend (2015) find no significant association between firm profitability and the choice of the assurance provider. On the contrary, Wong et al. (2016) find that profitable firms in the U.K. and U.S. are more likely to choose an accounting firm as the assurance provider due to the perceived higher quality assurance.

Focusing on leverage as a driver of the demand for assurance, Branco et al. (2014) find that firms with higher levels of leverage are less likely to obtain assurance. Casey and Grenier (2015) and Datt et al. (2019) document the same results for a sample of U.S. firms. These results could be driven by financial constraints of highly leverage firms inhibiting them from obtaining costly assurance (Casey & Grenier, 2015). In addition, Casey and Grenier (2015) argue that stronger regulatory oversight and monitoring in the U.S. can act as a substitute for assurance, thereby reducing the demand for assurance by highly leveraged firms. However, contrary to this, Simnett et al. (2009), using an international sample, and Cho et al. (2014), using a U.S. sample, find that leverage is not associated with the decision to obtain assurance.

In terms of the choice of the assurance provider, Simnett et al. (2009) and Casey and Grenier (2015) find that firms with higher levels of leverage are less likely to use an accounting assurance provider. Similar to the arguments raised above, this is potentially driven by the financial constraints of highly leveraged firms inhibiting these firms from obtaining costly assurance from accounting assurance providers. Contrary to this, Wong et al. (2016) find that, for U.K. and U.S. firms, leverage is not a significant determinant in the choice of the assurance provider.

Some studies examine the association between the extent/level and quality of disclosures and the social and environmental performance of a firm, respectively, and the decision to obtain assurance, as well as the choice of the assurance provider. Firms with extensive and high-quality sustainability reports and firms with superior social and environmental performance may be more likely to obtain assurance to emphasize their superior performance (Cho et al., 2014; Clarkson et al., 2019). These firms may also be more likely to have these reports assured by an accounting firm (Clarkson et al., 2019).

Supporting these arguments, Cho et al. (2014), Clarkson et al. (2019), and Hassan et al. (2020) document a positive association between the extent and/or level of sustainability disclosures and the

decision to obtain assurance. Sethi et al. (2017) document a positive association between the quality of CSR disclosures and the decision to obtain assurance. Dutta (2019), Clarkson et al. (2019) and Simoni et al. (2020) find that firms with superior social and environmental performance are more likely to have their sustainability reports externally assured. In addition, Clarkson et al. (2019) find that firms with more extensive sustainability disclosures and superior social and environmental performance are more likely have the information assured by a Big Four firm and seek full verification.

A relatively new stream of research examines the association between firm-level corporate governance characteristics, the decision to obtain EER assurance, and the choice of the assurance provider. Focusing on the association between firm-level corporate governance characteristics and the decision to obtain sustainability assurance, Simoni et al. (2020) document a significant positive association between higher overall corporate governance quality and the decision to obtain sustainability assurance.

To further disentangle the potential drivers of this association, some studies examine specific corporate governance functions and/or the characteristics of these functions as opposed to overall corporate governance. For example, in terms of traditional corporate governance functions (including the board and the audit committee), Kend (2015) finds that the activity and diligence of audit committees are determinants of the assurance decision for listed U.K. and Australian firms. The results indicate that the audit committee is not merely a symbolic corporate governance function. Liao et al. (2018) document that Chinese firms with larger boards, more female directors, and a separation between CEO and chairman positions are more likely to obtain assurance.

In terms of sustainability-oriented corporate governance functions, Kend (2015) finds that the existence of sustainability committees and governance committees is not associated with the assurance decision for listed U.K. and Australian firms. This could be driven by the fact that most of the sample firms do not have a sustainability or governance committee. Similarly, Peters and Romi (2015) find that the existence of environmental committees is not associated with the sustainability assurance decision for U.S. firms. The authors argue that environmental committees act as a symbolic gesture of a firm's commitment to sustainability rather than an information conduit. However, Peters and Romi (2015) find that environmental committees with greater expertise are more likely to obtain sustainability assurance. In two cross-country studies, Datt et al. (2018) and García-Sánchez et al. (2019) find that the existence of environmental committees and CSR committees is significantly associated with the assurance decision.

In terms of the choice of assurance provider, the literature shows that firms with sustainability and governance committees (Kend, 2015), firms with more experienced environmental committees (Peters & Romi, 2015), and firms with more female directors (Liao et al., 2018) are more likely to obtain assurance from an accounting firm. Peters and Romi (2015) also document that firms with a Chief Sustainability Officer (CSO) and, more so, firms with a CSO with sustainability expertise are more likely to obtain assurance. In addition, the authors find that CSOs classified as sustainability experts are more likely to use a consultancy firm (i.e., non-accounting firm) as the assurance provider.

Two studies examine combined assurance. Maroun and Prinsloo (2020) examine the determinants of the use of more sophisticated combined assurance models to assure integrated reports. The authors find that firm size is negatively associated with the sophistication of the combined assurance models. However, firm profitability is not associated with the sophistication of the combined assurance models. When disentangling the components of combined assurance sophistication (including assurance coverage, assurance methodology, and assurance governance), the authors find that while more profitable firms rely on robust assurance methodologies (driving higher combined assurance sophistication), they are more likely to reduce their assurance coverage (driving lower combined assurance sophistication). In addition, they document that while firms with larger and more independent boards are associated with more sophisticated combined assurance models, board experience is associated with

less sophisticated combined assurance models. The authors find that as board experience increases, assurance methodologies decrease. As a result, board experience is substituting for the use of complex assurance methodologies, resulting in less sophisticated combined assurance. In addition, Wang et al. (2020) find that for a sample of South African firms' integrated reports, the diligence and expertise of the board and the audit committee and the expertise and independence of the sustainability committee are positively associated with the extent and quality of credibility-enhancing mechanisms.

Some studies investigate other firm-level determinants of assurance. For example, Gillet-Monjarret (2015) finds that media pressure is associated with the assurance decision. Branco et al. (2014) and Fernandez-Feijoo et al. (2015) find that listed firms are more likely to obtain assurance compared to non-listed firms. The literature also shows that various firm motives, for example, the desire to improve carbon management mechanisms, building a foundation for systematic business management, having better control of business operations, meeting customer and market requirements, and enhancing the image and reputation drive the assurance decision (Datt et al., 2020; Prajogo et al., 2020).

In some instances, the results pertaining to the association between firm-level characteristics, the decision to obtain sustainability assurance, and the choice of the sustainability assurance provider appear to be mixed (Farooq & De Villiers, 2017). Although the factors discussed are drivers of the demand for assurance and the choice of assurance provider, it appears to be context-specific. As a result, industry- and country-level factors should also be considered as they could affect both decisions. Zhou et al. (2016) note that it is important to consider the interplay between these factors.

### 5.1.2 | Industry-level characteristics

In terms of the industry-level characteristics driving the demand for assurance and the choice of the assurance provider, studies mainly consider industry membership. Simnett et al. (2009), Green and Zhou (2013), Mock et al. (2013), Zorio et al. (2013), Branco et al. (2014), and Cho et al. (2014) find that the adoption of assurance is more common among firms operating in industries with greater social and/or environmental impacts. Similarly, Martínez-Ferrero and García-Sánchez (2017a) document that firms operating in industries that are more concerned about sustainability (i.e., mimetic pressures) are more likely to obtain assurance. However, the results show that country-level factors (i.e., coercive and normative pressures) influence the assurance decision to a greater extent than industry-level factors (i.e., mimetic pressures). Also focusing on industry-level mimetic pressures, Chen and Cheng (2020) find that the likelihood of obtaining assurance is lower in public family businesses compared to non-family firms. However, the authors find that industry-level mimetic pressures weaken the negative association for public family businesses with less severe central agency problems.

Focusing on the association between industry membership and the assurance decision for U.S. firms, Casey and Grenier (2015) document mixed results. Whereas U.S. firms in the mining and production industry are more likely to obtain assurance, firms in the finance and utilities industry are not more likely to obtain sustainability assurance, notwithstanding the fact that these firms face significant social and environmental risks. Casey and Grenier (2015) note that these differences could be driven by regulatory oversight within industries.

Contrary to the findings documented above, Bolla-Araya et al. (2019) find that the practice of adopting assurance is more common in less socially and environmentally sensitive industries compared to more socially and environmentally sensitive industries. The authors note that this finding is counterintuitive and that more empirical evidence would be necessary to reach a more consistent result. Similarly, Hassan et al. (2020) find that firms operating in non-carbon industries (i.e., low carbon intensive industries) are more likely to obtain assurance on sustainability disclosures. The authors

argue that, based on signaling theory, it is less costly for more socially responsible firms (i.e., firms operating in low carbon intensive industries) to obtain assurance compared to less socially responsible firms. However, the authors note that the results are driven by financial firms, which is consistent with the findings of, for example, Cho et al. (2014). On the other hand, Sethi et al. (2017) find that, contrary to theoretical predictions, the industry effect is not significant in the assurance decision. The authors find that firms operating in socially and/or environmentally sensitive industries such as utilities, financial services, manufacturing, and oil and gas are not more likely to obtain assurance than firms in other industries.

Focusing on combined assurance on integrated reports, Maroun and Prinsloo (2020) document no association between firms operating in environmentally sensitive industries and the sophistication of combined assurance models. The authors find that while firms operating in environmentally sensitive industries rely on robust assurance methodologies (driving higher combined assurance sophistication), they are more likely to reduce their assurance coverage (driving lower combined assurance sophistication). However, the results also show that firms operating in the financial services sector industry implement less sophisticated combined assurance models. Similar to arguments made by Casey and Grenier (2015), the authors note that this could be driven by the fact that firms in the financial services sector are already highly regulated. Therefore, the regulations may be seen as a substitute for combined assurance.

Focusing on the choice of the assurance provider, Simnett et al. (2009), Casey & Grenier, 2015), and Bolla-Araya et al. (2019) find no association between socially and/or environmentally sensitive industries and the choice of the assurance provider. On the contrary, Zorio et al. (2013) find that the industry in which a firm operates is a significant determinant of the choice of an accountant as the assurance provider for Spanish firms. The study finds that Spanish firms in the consumer services industry are more likely to use an accountant as the assurance provider.

### 5.1.3 | Country-level characteristics

In terms of the country-level characteristics driving the demand for assurance and the choice of assurance providers, studies mainly consider the legal system/origin (i.e., code law versus common law), the strength of the legal environment and legal enforcement, and pressure toward sustainable corporate practices. Focusing on the decision to obtain assurance, Simnett et al. (2009), Kolk and Perego (2010), Zhou et al. (2016), Bolla-Araya et al. (2019), and Simoni et al. (2020) find that firms domiciled in stakeholder-oriented countries (i.e., code law countries) are more likely to adopt assurance. Firms operating in stakeholder-oriented countries have a social responsibility not only toward shareholders, but toward all stakeholders. Therefore, in order to manage and maintain stakeholder relationships and demands, firms in stakeholder-oriented countries are more likely to obtain assurance (Kolk & Perego, 2010). In addition, Simnett et al. (2009) find that firms in countries with a strong legal environment are more likely to adopt assurance.

From the neo-institutional perspective, Martínez-Ferrero and García-Sánchez (2017a) find that firms operating in countries with stronger legal systems (i.e., coercive pressures) and greater cultural development (i.e., normative pressures) are more likely to obtain sustainability assurance than firms where these pressures are weaker. The authors document evidence that normative pressures have the greatest explanatory effect on assurance demand, followed by coercive pressures.

Focusing on the assurance of carbon emissions information, Datt et al. (2018) find that in addition to firm-level carbon risk exposure and carbon governance mechanisms being determinants of the carbon emissions assurance decision, firms domiciled in countries with stricter climate protection



policies and countries with open economies are more likely to engage in carbon emissions assurance. Kılıç et al. (2019) find that firms operating in countries with weaker ethical behavior, weaker financial and auditing standards, and weaker investor protection mechanisms are more likely to engage in assurance on integrated reports. Similarly, Kolk and Perego (2010) and Zhou et al. (2016) document that firms operating in countries with weaker legal enforcement mechanisms are more likely to adopt assurance. Herda et al. (2014) find that firms domiciled in countries characterized by weaker investor protection are more likely to obtain sustainability assurance (and higher quality sustainability assurance) compared to firms domiciled in countries characterized by stronger investor protection. These findings support the argument that assurance serves as a substitute for weak country-level institutional and monitoring mechanisms by ensuring control over the quality and credibility of social and environmental information (Kolk & Perego, 2010).

Further, Kolk and Perego (2010) show that the assurance demand is higher in countries where there is more pressure toward sustainable corporate practices, due to public policy and institutional factors. Firms operating in these countries will therefore engage more in assurance services to respond to the higher demand for transparency and accountability. Contrary to this, Simoni et al. (2020) find that firms operating in countries with strong sustainability policies are less likely to obtain assurance. Although their results contradict initial predictions, the authors argue that firms operating in countries with weak sustainability policies may need to gain legitimacy and are therefore more likely to obtain assurance as a legitimacy-enhancing tool. In addition, it can be argued that strong sustainability policies may act as a substitute for assurance.

Some studies provide evidence that the legal system of a country, the strength of the legal environment and legal enforcement, and institutional pressure toward sustainable corporate practices do not affect the decision to obtain assurance (Fernandez-Feijoo et al., 2015; Sethi et al., 2017). However, Fernandez-Feijoo et al. (2015) document that regulatory actions and policies, such as those proposed by the EU Commission, have a greater effect on the likelihood of obtaining assurance than the legal system tradition of a country. Sethi et al. (2017) find that firms operating in stakeholder-oriented countries and countries with stronger legal environments obtain higher quality assurance.

With regard to the choice of the assurance provider, Simnett et al. (2009) and Zhou et al. (2016) show that firms operating in stakeholder-oriented countries (i.e., code law countries) are more likely to obtain assurance from an accounting assurance provider. In addition, Zhou et al. (2016) find that firms operating in countries with weaker legal enforcement are more likely to obtain assurance on greenhouse gas (GHG) disclosures from an accounting assurance provider. Therefore, the high-quality assurance provided by accounting assurance providers serves as a substitution for the weaker legal environment in which these firms operate. Conversely, Simnett et al. (2009) find that firms operating in countries with weak legal environments are not more likely to choose a member from the auditing profession as the assurance provider. Kolk and Perego (2010) find that the likelihood of choosing an accounting assurance provider increases for companies operating in shareholder-oriented countries (i.e., common law countries) with lower levels of litigation. The authors caution that the findings hold for a small sample (44 observations).

In terms of the assurance of carbon information, Datt et al. (2020) find that firms subject to greater legitimacy and stakeholder pressure (e.g., those with high levels of carbon emission in stakeholder-oriented countries with stringent climate protection policies) are more likely to choose an accounting assurance provider. In contrast, firms that have a desire to improve carbon management mechanisms (e.g., with carbon committees, carbon reduction initiatives and a greater degree of carbon transparency) are more likely to choose consulting firms as the assurance provider.

Fernandez-Feijoo et al. (2015) document that the legal system of a country, legal enforcement in a country, and institutional pressure toward sustainability do not affect the choice of the assurance



provider. Similarly, Bollas-Araya et al. (2019) find no association between legal system of a country and the choice the assurance provider.

Overall, this literature suggests that country-level institutions, enforcement, regulations, legal origin, and culture affect the assurance decision. While the literature does not provide consistent evidence throughout, it is evident that country-level factors are important drivers for the demand of assurance of EERs.

## 5.2 | Consequences

In terms of the consequences related to the assurance and/or assurance provider decision, studies mainly consider the effect on the extent/level of reporting and reporting quality, extent/level of assurance report content and quality, financial performance, capital market responses, and other consequences.

### 5.2.1 | Extent/level and reporting quality

An obvious question is whether assurance improves reporting quality. Examining the association between assurance and environmental disclosure quality, Moroney et al. (2012) find a significant positive association between assurance and environmental disclosure quality. However, the authors find no significant difference in the environmental disclosure quality for firms using accounting assurance providers compared to firms using consultant assurance providers. Focusing on extent/level of disclosure, Braam et al. (2016) examine the relationship between assurance and the level and nature of environmental reporting, respectively. The authors find that assurance plays a significant, incremental role in explaining the variation in the level and nature of environmental reporting.

Related to reporting quality, an emerging question is whether assurance detects restatements. In the financial statement audit literature, restatements are indicative of low audit quality, because it suggests that the auditor issued an unqualified opinion in the previous period, while the financial statements were materially misstated (DeFond & Zhang, 2014). Ballou et al. (2018) argue that in the context of non-financial assurance, restatements do not suggest that the assurer missed a misstatement in the prior period. Because CSR reporting is in its infancy, it involves metrics that are subjective and for which the source documentation is imperfect. As the scope and level of assurance gradually increase over time, assurers are likely to detect errors, even if the information was assured in previous periods. The study shows a significant positive association between assurance and restatements. This evidence suggests that assurance improves CSR reporting quality through the identification of errors in prior reports and through methodological updates that require restatements for comparability. The results also show that restatements are higher when assurance is provided by an accounting provider as opposed to a non-accounting provider. Also focusing on restatements, Michelon et al. (2019) document a significant positive association between assurance and sustainability report restatements. This association is stronger for restatements relating to errors than for methodological updates. Moreover, the study finds that assurance is significantly associated with quantitative immaterial restatements. Although the findings indicate that assurance enhances sustainability report quality, the authors argue that assurance providers use restatements as a vehicle to gain market share and to create legitimacy in the assurance market.

A recent literature examines the role of assurance on the quality of integrated reports. Maroun (2019a) examines whether external assurance is associated with higher integrated report quality for a sample of South African firms. The results indicate that assurance in general, the number of elements

of the integrated report being subject to external assurance, assurance provided by Big Four accounting firms, and the level of assurance (reasonable versus limited) are positively associated with integrated report quality. Ahmed Haji and Anifowose (2016) examine the role of the audit committee as an internal assurance mechanism of integrated reports. The authors show that the overall effectiveness of the audit committee, as well as specific characteristics of the audit committee (including authority and activity), is positively associated with the extent and quality of integrated reports.<sup>9</sup>

Finally, an emerging research question is whether there are benefits to a single assurance provider for both financial and EERs. Maso et al. (2020) examine whether the provision of CSR assurance services and financial statement audit by the same audit firm impacts the auditor's assessment of going-concern risk due to knowledge spillovers. The authors find that auditors of firms who use the same Big Four audit firm for the financial statement audit and the provision of CSR assurance issue more frequent going-concern opinions, the firms book larger environmental and litigation provisions, are less likely to book income-decreasing restatements and have more persistent and value relevant earnings. These findings are indicative of a complementary role between EER assurance and financial reporting quality.

### 5.2.2 | Assurance report content

Instead of examining the corporate reports released by firms, a stream of research examines the level/extent and the quality of the content of assurance reports. For example, Bollas-Araya et al. (2019) and Zorio et al. (2013) document that accountant assurance providers issue higher quality assurance reports compared to non-accountant assurance providers. Martínez-Ferrero et al. (2018) find that the quality of assurance reports is higher when the assurance provider has greater expertise and more experience. In addition, the authors find that this association is more significant when assurance is obtained from an accounting assurance provider.

Linking to the concept of knowledge and expertise, the prior literature maintains that the joint provision of financial statement audit and EER assurance services by the same audit firm result in enhanced assurance quality due to knowledge spillover. Ruiz-Barbadillo and Martínez-Ferrero (2020) examine the association between the provision of financial statement audit and sustainability assurance services by the same audit firm and the quality of assurance reports (as a proxy for assurance quality). Due to the knowledge spillover effect, the study documents a positive association between the provision of financial statement audit and sustainability assurance services by the same audit firm and higher assurance report quality. In addition, the authors find that industry specialization (i.e., expertise) of the assurance providers further enhances this positive association.

In addition to the quality of assurance reports, some studies examine the content thereof. Rossi and Tarquinio (2017) examine the association between certain corporate variables and the extent of the assurance report content. The authors find that the provision of assurance by accounting firms is negatively associated with the extent of assurance report content, indicating that accounting firms are more likely to issue assurance reports with less content. Supporting these findings, Hummel et al. (2019) document that non-accounting assurance providers issue broader assurance reports compared to accounting assurance providers.

### 5.2.3 | Capital market effects

A number of studies focus on the capital market consequences of assurance of EERs. Casey and Grenier (2015) examine the capital market effects of CSR assurance, as well as the choice of the

assurance provider for a sample of U.S. firms. The authors find that CSR assurance is associated with lower cost of capital, lower analyst forecast errors, and lower analyst forecast dispersion. Moreover, in the case of cost of capital and analyst forecast dispersion, the effect is more pronounced when assurance is provided by an accounting assurer. Similarly, Martínez-Ferrero and García-Sánchez (2017b) find a greater decrease in cost of capital for firms that publish and assure their social and environmental reports compared to firms that do not obtain assurance. Their findings also indicate that the effect is more pronounced when an accountant is the assurance provider.

Focusing on firm value, Peters and Romi (2015) examine the association between governance mechanisms and assurance services, respectively, and firm value for U.S. firms. They document that, early in their sample period (2002–2007), capital market participants did not value assurance. Conversely, governance mechanisms were positively associated with firm value early in their sample period, but not later (2008–2010). However, the later sample period (2008–2010) indicates that capital market participants value assurance, but only when provided by professional accountants. In Japan, external reviews of environmental information include general third-party comments and formal assurance. Nishitani et al. (2020) find that Japanese manufacturing firms issuing environmental reports with third-party comments have higher firm value than those without. Surprisingly, firms with environmental reporting with external assurance or with both third-party comments and external assurance do not have higher firm value than those without them. The authors attribute this to a lack of understanding of Japanese investors of the benefits of assurance.

Similar to Nishitani et al. (2020), Cho et al. (2014) find that assurance is not associated with higher market values for U.S. firms, indicating that assurance is not valued by capital market participants. The authors argue that the results may be driven by the type of assurance provider as the majority of their sample firms obtained assurance from non-accounting assurance providers. Clarkson et al.'s (2019) evidence provide support for this argument, indicating that capital market participants assign a higher market value to CSR reports only when they are assured, and more so, when they are assured by a Big Four accounting firm.

Characteristics of the assurance engagement could also influence the capital market consequences. Radhouane et al. (2020) document that assured environmental reporting by French firms in environmentally sensitive industries (ESI) is negatively valued by shareholders. In addition, a broader assurance scope is negatively associated with firm value. These results may be explained by the fact that shareholders are concerned about the cost of assurance and may believe that assurance does not add value to the reporting system. Higher levels of environmental disclosures by French firms operating in ESI are positively associated with firm value when a higher level of assurance is provided. This evidence suggests that a higher level of assurance improves the perceived credibility of the information. Finally, firms operating in ESI that use a professional accountant as assurance provider have lower firm values than those that use professional consultants. This suggests that shareholders may doubt the environmental verification expertise in the case of environmentally sensitive firms.

Similar to Radhouane et al. (2020), Cuadrado-Ballesteros et al. (2017) examine whether sustainability assurance and the attributes of the assurance is associated with the level of information asymmetry. The results show that sustainability reporting is associated with lower information asymmetry (proxied by analysts' forecast accuracy) when the sustainability reports are assured, assurance is provided by an accounting assurer, and higher levels of assurance are provided. The authors also show that these findings are affected by the institutional context in which a firm operates—assurance has greater implications in stakeholder-oriented countries. In shareholder-oriented countries, assurance only seems to be associated with lower information asymmetry when it is provided by an accounting assurer who offers reasonable assurance. Shifting the focus from the attributes of assurance to the design of the assurance process, Fuhrmann et al. (2017) document no association between assurance

and information asymmetry. However, the authors find that a high-quality description of the assurance process design in the assurance report is associated with lower information asymmetry.

Mandatory as opposed to voluntary assurance settings could also impact capital market consequences. Ferguson and Pündrich (2015) examine the market reaction to the mandatory assurance of public resources/reserves disclosures made under the Joint Ore Reserves Committee (“JORC”) Code by Australian Mining Development Stage Entities. The authors document a weak association between assurance by specialists that are part of the largest mining consulting firms on reserve disclosures and higher abnormal stock price returns. The results suggest that specialist assurance of reserve disclosure of mining firms is not valued by capital market participants.

In the integrated reporting context, Zhou et al. (2019) examine whether the implementation and quality of combined assurance disclosure in integrated reports is associated with lower information asymmetry. The authors provide evidence that the implementation and quality of combined assurance disclosure are associated with lower analysts’ forecast errors and dispersion and lower bid-ask spreads. For bid-ask spreads, this association holds only for firms where the information environment is weaker.

Caglio et al. (2020) examine the association between textual attributes (including reading difficulty, verbosity, and biased tone) and the assurance of integrated reports, respectively, and economic consequences. Focusing on assurance, the study documents that the adoption of assurance on integrated reports, as well as the quality of assurance, is associated with lower analysts’ forecast dispersion. In addition, the negative association between low-quality textual attributes of integrated reports and firm value and stock liquidity, respectively, is less pronounced in the presence of assurance.

#### 5.2.4 | Other consequences

Integrated reporting may increase firm financial performance due to the fact that financial and EERs are communicated to users in a more concise, integrated, and effective manner. The question arises whether assurance affects the association between financial performance and integrated reporting. Some argue that assurance enhances the credibility and quality of information and should therefore enhance the association between financial performance and integrated reporting. Akisik and Gal (2019) find evidence that, for a sample of U.S. firms, the positive association between financial performance (measured using stock price growth, return on equity and return on assets) and integrated reports is further enhanced when these integrated reports are assured by accounting firms. However, it should be noted that the definition/criteria for what constitutes an integrated report does not reflect the essence of an integrated report as envisaged by the Framework of the International Integrated Reporting Council (IIRC).

In certain cases, assurance may improve the quality of information internally available to managers and affect their decisions. Steinmeier and Stich (2019) examine the association between sustainability assurance and managerial investment decisions. They report a positive association between sustainability assurance and sustainability investment efficiency. This evidence is consistent with assurance improving the information available for managerial decision-making. Although reporting is primarily a vehicle used to reduce information asymmetry, it can also be used to enhance the social and environmental image of a firm. In addition, assurance can increase users’ perception of the credibility of the social and environmental information disclosed, which could lead to a better assessment of a firm’s social and environmental image. Birkey et al. (2016) document a positive association between CSR assurance and the environmental reputation of a firm. The authors find that the association is not impacted by the type of assurance provider.

Using a sample of Taiwanese firms, Du and Wu (2019) examine whether CSR reports are credible (using CSR-related misconduct as a proxy) and whether external assurance has an incremental impact on the credibility of CSR reports. The authors show that the issuance of CSR reports is not associated with a lower incidence of future CSR-related misconduct, unless the CSR reports are subject to assurance.

Al-Shaer and Zaman (2019) document that both board-level sustainability committees and independent external assurance have a significant positive association with the inclusion of sustainability terms in CEO compensation contracts. Sustainability-related targets in CEO compensation contracts are more likely to be included when the company has voluntary assurance, provided by a Big Four firm, and operates in a sustainability-sensitive industry.

## 6 | EXPERIMENTAL RESEARCH

Nine of the 15 experimental articles investigate the investor as the decision-maker. In general, participants are required to make stock price assessments (Brown-Liburd & Zamora, 2015; Coram et al., 2009) or indicate their willingness to invest (Cheng et al., 2015; Dilla et al., 2019; Hoang & Phang, 2020; Reimsbach et al., 2018; Shen et al., 2017; Stuart et al., 2020). Other investor decisions include an assessment of CSR report credibility (Hoang & Phang, 2020; Hodge et al., 2009; Shen et al., 2017) and the perceived importance of ESG indicators (Cheng et al., 2015). Most studies use actual investors as participants, whereas Cheng et al. (2015), Dilla et al. (2019), Hodge et al. (2009), and Shen et al. (2017) use students as proxies for non-professional investors.

A number of experimental studies examine the effect of the level of assurance and the type of assurance provider on investor decisions. Hodge et al. (2009) examine whether assurance, the level of assurance (reasonable versus limited), and the type of assurance practitioner (accountant versus specialist consultant) affect users' perceptions of sustainability report reliability. Their evidence suggests that non-professional investors have more confidence in sustainability reports with a reasonable level of assurance and when a top tier accounting firm is the assurance provider. On the contrary, Shen et al. (2017) report no difference between Chinese investors' decisions when CSR disclosures are assured by professional accountants as opposed to industry experts. The authors attribute this to governmental influence, the close ties between industry experts and government and investor' naivete in China.

Analysts are professional users of corporate reports, and two studies investigate their decisions. Pflugrath et al. (2011) show that analysts from the U.S. perceive CSR information to be more credible when the assurer is a professional accountant, while analysts from Australia and the U.K. do not distinguish between different types of assurers. Rivière-Giordano et al. (2018) show that when different levels of assurance are applied, analysts negatively perceive the lowest level of assurance.

Sheldon and Jenkins (2020) investigate the decisions of non-investor users of CSR reports contingent on the level of assurance. They find no difference between assurance conditions (no assurance, limited assurance, and reasonable assurance) when environmental performance is negative, but when environmental performance is positive, reports with limited assurance is perceived more reliable than reports with no or reasonable assurance. The authors indicate that this counterintuitive finding may be due to the fact that participants in the no assurance condition assumed that the information was assured, despite no mention being made of assurance.

Taken together, the experimental evidence on the effect of the assurer type and assurance level on the decision-making of users of EERs suggests that the effect is contingent on factors such as the type of investor (professional versus non-professional) and country. In addition, the literature suggests that

users of assurance reports may assume that EERs are assured, especially when presented with assured financial information. Users may also not be able to distinguish between different levels of assurance.

A number of studies document that the effect of assurance is context-specific. For example, Pflugrath et al. (2011) show that analysts perceive CSR reports to be more credible when a firm is from an industry where assurance is more commonplace (e.g., mining). Brown-Liburd and Zamora (2015) find that when managerial remuneration is tied to CSR performance and the CSR investment level is high, investors' stock price assessments are greater only when CSR assurance is also present. Thus, CSR assurance becomes a vital credibility signal in the presence of self-serving managerial incentives. Consistent with attribution theory, Coram et al. (2009) and Shen et al. (2017) report that assurance on non-financial performance indicators has a significant effect on stock price estimates only when these indicators were positive. Their evidence suggests that investors are more skeptical about positive disclosures than negative disclosures and that assurance could enhance the credibility of potential self-serving disclosures. Cheng et al. (2015) consider the effect of strategic relevance of ESG indicators and assurance on investor decisions. Their evidence indicates that the effect of assurance on investors' willingness to invest in the company is stronger when the ESG indicators have high strategic relevance compared to low strategic relevance.

Two studies focus on management and investor views about ESG. Dilla et al. (2019) show that investors' environmental responsibility views influence the effect of assurance on investor decisions. The results show that assurance on environmental performance information affects the decisions of investors with strong environmental responsibility importance views, while it does not affect the decisions of investors with weak environmental responsibility views. Stuart et al. (2020) consider non-professional investors' decisions subject to managements' stated intent for undertaking CSR (financial returns and/or social good). They show that investors prefer CSR activities that are linked to financial returns. However, when a subsequent negative CSR event occurs, in the absence of prior assurance of CSR information, investors prefer CSR activities undertaken for social good. Thus, assurance supplements disclosure of CSR activities by providing protection against the impact of negative events.

Two experimental studies examine the assurance of integrated reports. Reimsbach et al. (2018) provide evidence that assurance of sustainability information positively affected professional investors' assessment of a firm's sustainability performance, resulted in a greater weighting of this information and led to higher investment attractiveness judgments. However, this assurance effect was weaker in the case of integrated reporting compared to separate reporting. Reimsbach et al. (2018, p. 559) attribute the weaker results in the case of integrated reporting to "a cognitive bias in decision-making when assured financial performance and non-assured sustainability performance are presented in the same report." However, their findings should be considered in the context of the research design where one of the experimental manipulations is whether sustainability information is integrated with financial information or whether it is presented in a standalone report. This manipulation does not reflect the essence of an integrated report as envisaged by the Framework of the IIRC. Reimsbach et al.'s. (2018) operationalization of an integrated report captures whether sustainability information is presented in a single report together with financial information, but the information is not integrated. It is also questionable whether the sustainability information included in their instrument is material to the firm.<sup>10</sup> Hence, it is difficult to evaluate whether the weaker results are due to integrated reporting or to immaterial disclosure that is not integrated.

Only one experimental study investigates combined assurance. Hoang and Phang (2020) find that when reliability risks are high, combined assurance restores investors' perceived reliability of reported information to a greater extent than when reliability risks are low.

Next, we discuss the remaining experimental studies which focused on multiple or other decision-makers. Quick and Inwinkl (2020) investigate decisions of bank directors regarding reliance on



CSR reports, probability of granting credit, buy recommendations, and likelihood to invest. They find that assurance of CSR reports positively influences these decisions.

Two studies examine GHG assurance. Kim et al. (2016) examines how auditors respond to the discipline-specific expertise of other team members in undertaking GHG assurance. Assurance of GHG information typically involves multidisciplinary teams that combine financial and science expertise. Kim et al. (2016) show that financial statement auditors incorrectly rely on an explanation for an unpredicted analytical procedure fluctuation from a senior-level assurer with GHG science-related expertise, regardless of whether the situation requires such expertise. While the review process is able to alleviate this over-reliance, this only occurs when the review is done by a manager with financial expertise. Green and Li (2012) examine the expectation gap between shareholders, assurers, and preparers of GHG information. Relative to preparers and shareholders, assurers generally perceived a lower level of responsibility for the report and perceived the credibility of the assurance report to be higher. Assurers placed higher importance on the assurance skills than preparers and shareholders. Assurers indicate higher responsibility for the emitter entity (entities with emissions arising directly from their activities from owned or controlled sources) than for the user entity (entities with emissions from the generation of purchased electricity consumed by the entity).

## 7 | CONTENT ANALYSIS

In total, 18 articles used content analysis, of which 13 analyzed assurance reports. The remaining articles analyzed annual reports, integrated reports, CSR reports, and websites (Ackers, 2017a; Marx & Van Dyk, 2011; Prinsloo & Maroun, 2020) and responses on standard setting documents (Flasher et al., 2018; Simnett & Huggins, 2015).

The early literature in our sample provides an overview of assurance practices. Junior et al. (2014) provide a descriptive analysis of current practices in sustainability reporting and the assurance of sustainability reports of Global Fortune 500 firms. They report that the percentage of firms issuing a sustainability report has been increasing in their sample years, while the percentage of reports being assured remained relatively constant. New practices emerging included the “mixed approach” (two types of assurances providers for the same engagement) and the “stakeholder or specialist review” (opinions or recommendations from specialists invited to review the EERs). The analysis also shows that issuing EERs and having them assured have become a worldwide phenomenon, occurring in developed and emerging economies around the world. Perego and Kolk (2012) find that while the percentage of Fortune Global 250 firms with verified sustainability reports has increased from 21% to 56%, the diffusion of sustainability assurance remains limited in the U.S. and relatively high in numbers and percentages in Japan and some European countries. Marx and Van Dyk (2011) report that only 35% of South African firms included in the Johannesburg Stock Exchange's Social Responsibility Index obtained independent assurance on their sustainability reports in 2009. Using a sample of the largest 100 South African firms, Ackers (2009) find that only 15% obtain external assurance. Despite subsequent “soft regulation,” only 40% of South African firms provide independent assurance on their CSR disclosures by 2014 (Ackers, 2017b).

A number of studies question the ability of assurance to make a meaningful contribution to firms' corporate social responsibility practices or to act as a catalyst for change. Bepari and Mollik (2016) analyze assurance reports of Australian firms included in the ASX 300. They find a lack of stakeholder engagement in the assurance process, scope limitations placed on assurance engagements, and a reluctance of assurers to address the assurance reports to stakeholder groups. Consequently, Bepari and Mollik (2016) argue that the continued emphasis on internal systems, processes, data generation,

and data capture results in assurance serving as an internal control tool rather than as a social accountability instrument. Gürtürk and Hahn (2016) continue the debate using listed firms from the U.K. and Germany. They report a standardized alteration of the assurance process headed by accountants and ISAE 3,000 as a non-sustainability-related assurance standard with arbitrary assurance content and unclear communication about the assurance process. All these factors result in low transparency about assurance and do not support the notion that current assurance practices can inform sustainability information and add credibility to sustainability reports. Further, the value of assurance for internal use is questionable and the potential for decision-making and organizational change is limited. On the contrary, Gürtürk and Hahn (2016) find that the application of the AA 1,000 AS potentially results in higher quality assurance practices and may have an impact on firms' sustainability planning and performance. Ackers and Eccles (2015) report that the wording of assurance conclusions suggests that the scope of engagements by accounting assurers is limited to disclosed information, and their assurance reports tend to be vague and standard, without disclosing detailed information that report users may consider necessary. By comparison, non-accounting assurers' conclusions usually refer more comprehensively to the broader non-financial performance and reporting frameworks. As a result, Ackers and Eccles (2015) argue that user understanding may be impaired by the variation in the nature and extent of the assurance work performed and differences in assurance report wording.

Analyzing 337 assurance reports of firms in the energy and mining sectors with the highest application (A+) of the GRI Framework, Boiral and Heras-Saizarbitoria (2020) reach similar conclusions to Ackers and Eccles (2015), Bepari and Mollik (2016), and Gürtürk and Hahn (2016). They report that assurance reports do not demonstrate a material, substantial, and credible verification process and appear largely distanced from important sustainability matters and stakeholder concerns. This practice is based on procedural and self-referential language supported by assurance standards seemingly detached from the specific requirements of sustainability reporting. These assurance practices appear to be entrenched in routines and strategies that tend to reproduce standardized statements irrespective of the reliability and content of sustainability reports. Perego and Kolk (2012) document that the rate of improvement in assurance quality over a period of a decade starting in 1998 seems to stabilize in 2008. They argue that such a trend is worrying from the perspective of stakeholder accountability, since the average assurance report addresses less than half of the best-practice criteria. Several multinational corporations seem to use sustainability assurance to project a decoupled or symbolic image of accountability, thereby undermining the integrity of this assurance practice.

While Boiral and Heras-Saizarbitoria (2020) are critical of standardized assurance reports, Gillet-Monjaret (2018) argues that variability in the content of assurance reports casts doubt over the comparability of disclosures and the legitimacy of corporate social responsibility assurance. She finds a greater standardization of the content of assurance reports following the introduction of the Grenelle II Law in France that mandates the assurance of CSR information by an independent third party. By contrast to the situation in France, Ackers (2017a, 2017b) finds that the "soft regulation" of assurance in South Africa through the King III corporate governance code and the Johannesburg Stock Exchange Listings Requirements had a limited effect on assurance implementation in South Africa. Instead, it appears firm size and industry have a greater effect on the adoption of assurance.

Larrinaga et al. (2020) contrast the role of the Big Four firms in institutionalizing sustainability practices in Italy and the U.S. Their study provides perspective on the tightening of the contents of assurance reports by Big Four firms. Initially Big Four firms in Italy followed the practices of non-Big Four firms, but subsequently became the main developers, editing the assurance disclosure norms to restrict their focus to a select subset of this activity. In contrast, the role of the Big Four firms is not significant in the U.S., where non-Big Four firms (especially specialist consultants, engineering firms, and certification bodies) lead the assurance market, tend to experiment more (through elaborate



assurance statements including substantive issues such as assumptions, stakeholder engagement, evidence, and materiality), and provide advice and evaluation of the information systems. Although the volume of disclosures made in sustainability reporting assurance reports were comparable in both countries, the assurance disclosure practice converged in Italy around a few conventional disclosure items, in such a way that by the end of the sample period, almost all Italian assurance reports were disclosing the same information. In contrast, in the U.S. an unsettled situation exists, evidenced by a lower percentage of sustainability reports that are assured, lower participation among the Big Four firms, and a higher variation in assurance disclosure practices. However, despite the lower level of assurance in the U.S. their results indicate a higher level of disclosure on fundamental issues, such as assumptions, stakeholder engagement, evidence, and materiality.

Flasher et al. (2018) provide further evidence on the role of the Big Four firms in the assurance of EERs in the U.S. They examine both the involvement of the Big Four firms in the sustainability standard setting process of the Securities and Exchange Commission (SEC) and the Sustainability Accounting Standards Board (SASB) and the methods through which their employees acquire the necessary skills to face the opportunities and challenges that the growing importance of sustainability reporting presents. The results show that Big Four firms participated in SEC and SASB processes, while none of the non-Big Four firms submitted comment letters. Using LinkedIn data, the study shows that employees with financial statement audit backgrounds do transfer to sustainability attestation and that these employees are retained by accounting firms within their sustainability assurance practice. This reveals a possible prospect for firms to offer financial audit employees who are looking for different career opportunities.

Country-, industry-, and firm-level factors are associated with the implementation of assurance. The promulgation of a more stringent legislation on social and environmental reporting increases regulatory pressure and acts as coercive mechanisms, while national contexts characterized by high litigation costs may hamper the diffusion of assurance practices (Ackers & Eccles, 2015; Gillet-Monjaret, 2018). Pereo and Kolk (2012) argue that multinational corporations with superior environmental resources and capabilities are more likely to demand higher levels of accountability standards and assurance quality. Similarly, Ackers (2017a, 2017b) document that larger firms, mostly those operating in environmentally sensitive industries, as well as the consumer sector (both of which have concerns regarding their perceived legitimacy), had a greater tendency to provide independent assurance on their CSR disclosures.

The literature recognizes the importance of stakeholder engagement in sustainability reporting and assurance. Manetti and Toccafondi (2012) assess the extent of stakeholder engagement and involvement in assurance processes. Stakeholders, especially internal ones, are being incorporated more into all stages of the sustainability reporting assurance process. However, the low level of engagement of external stakeholders or of internal stakeholders other than employees or managers, the high frequency of unqualified opinions, and the low level of collaboration with third parties in conducting assurance services suggest the existence of professional capture in assurance services to the detriment of the quality and credibility of assurance.

The final two studies relate to the assurance of integrated reports. Prinsloo and Maroun (2020) develop a proxy for combined assurance quality and evaluate the largest 50 firms on the Johannesburg Stock Exchange using this proxy. Overall, they find that combined assurance models are being designed conservatively as they focus on specific disclosures and are directed by a restricted number of assurance methodologies or frameworks instead of taking a mixed approach to verification of integrated and sustainability reports as a whole. Simnett and Huggins (2015) analyze stakeholder responses to the IIRC's Discussion Paper and Consultation Draft during the development of the Integrated Reporting Framework to identify research opportunities related to integrated reporting and assurance (see Section 11).

## 8 | INTERVIEWS AND CASE STUDIES

Of the 18 articles in this category, four are case studies (Canning et al., 2019; Decaux & Sarens, 2015; O'Dwyer, 2011; O'Dwyer et al., 2011), while the remaining are interviews. Assurers are the interviewees in 13, preparers in one (Jones & Solomon, 2010) and both assurers and preparers in four articles (Briem & Wald, 2018; Farooq & De Villiers, 2019a; Hickman & Cote, 2019; Maroun, 2018).

As one of the earlier studies in our sample focusing on the views of preparers, Jones and Solomon (2010) report that while interviewees believed enhanced credibility and improved sustainability and environmental reports are important drivers of the demand of assurance, numerous barriers to the adoption of assurance exist. These include cost, insufficient development of reports, the complexity of assurance, employment of environmental consultants despite the belief that assurance was a logical development of current financial statement auditing and the independence of the environmental consultants.

Interviews are a useful method to study the professionalization of EER assurance. O'Dwyer (2011) develops an understanding of how assurance practitioners have attempted to construct the practice of sustainability assurance and how, and the extent to which, these efforts have rendered sustainability reporting auditable. Overall, his analysis indicates that innovation in new assurance practices (and the auditability of new forms of information) may be restricted by a general dependence on financial statement audit training and techniques, as well as by certain limitations required by professional services firms' control procedures.

As non-financial reporting and assurance remain largely unregulated, a competitive market between accounting and non-accounting assurers exists. The findings of Boiral et al. (2019), Farooq and De Villiers (2019b), and O'Dwyer (2011) highlight the division between accounting and non-accounting assurers, each of which question the professionalism of the other. The main standards in this area, namely ISAE 3,000 and AA 1,000 AS, tend to be used as legitimization tools to enhance the credibility of the assurance process rather than effective guidelines to improve the quality of the verification process. Notable variations in the differentiation strategies pursued by accounting and non-accounting assurers result in differences in their choice of standards, aspects of the assurance process (e.g., materiality, scope, team composition), and emphasis on particular expertise (Channuntapipat et al., 2020; Farooq & De Villiers, 2019b). Accounting assurers' claims about the rigor of their assurance procedures and standards, extensive resources and the effectiveness of the intra-firm quality control mechanisms, and arguing in support of a single provider for both financial statement audits and sustainability assurance serve to establish their intention to develop an image of superiority (Channuntapipat et al., 2020; Farooq & De Villiers, 2019b). By contrast, non-accounting assurers promote themselves among sustainability report managers as agile multifaceted professionals and subject matter specialists using AA 1,000 AS, a dedicated standard, while discrediting accounting assurers and ISAE 3,000 as "out of touch" with sustainability objectives (Channuntapipat et al., 2020; Farooq & De Villiers, 2019b).

Edgely et al. (2015) and Canning et al. (2019) examine the construction of materiality by accounting and non-accounting assurers. Edgely et al. (2015) document three main findings. First, the introduction of a stakeholder logic (i.e., focusing on social issues that are important to a broader group of stakeholders) has significantly changed the meaning and role of materiality. Non-accounting assurers, in particular, shift the focus of materiality away from precision in reporting to the completeness of key performance areas. Second, a more adaptable, performative, social understanding of materiality was depicted by assurers, with a forward-looking rather than a historic focus. Third, competing logics have encouraged different beliefs about materiality and practices to develop. This influenced the way assurers theorized the concept and interpreted outcomes. A piecemeal and localized understanding of

materiality is developing. Materiality decisions are the result of discussion and engagement between assurers, management, and key stakeholder groups. Decisions appear sensible in their separate locations. However, it is challenging to develop a coherent, clearly defined understanding of materiality when numerous logics support its operationalization. Canning et al. (2019) case study shows that assurers with no financial statement audit background retrospectively rationalize their intuition using the assumed authority of structured financial statement audit methodologies. Regardless, non-accountant and accountant assurers largely considered themselves engaged in a collaborative, synergistic process aimed at collectively constructing materiality “in the doing.”

Non-financial report assurers need to navigate a range of ethical issues (Boiral et al., 2019). Boiral et al. (2019) identify four related ethical concerns that reinforce each other: the commercialism inherent to sustainability assurance, the symbolic nature of the verification process, the interdependency between assurance and consulting services, and the familiarity with clients. Commercialism is central to the ethical problems as assurers searching for customer satisfaction and retention at competitive prices encourage restricted scope engagements dominated by managerial capture of the assurance process (Boiral et al., 2019). In such a case, assurance becomes a symbolic verification process that does not address the needs of report users. In addition, the vague lines between assurance and consulting activities and familiarity with clients create concerns about assurers' independence.

Many of the ethical considerations are influenced by attempts of assurance providers to overcome the obstacles to institutionalize and legitimize assurance of EERs (Farooq & De Villiers, 2019a; O'Dwyer et al., 2011). The means by which assurers actively construct the assurance context are reflected in O'Dwyer et al.'s (2011) case analysis. To create opportunities for assurance, assurers often assumed the active role of change agents advising on the development of systems aimed at making organizations auditable thereby crossing the established jurisdictional confines of regulatory auditing and verification. Farooq and De Villiers (2019a) document that the obstacles to institutionalization influence the scope of engagements. At the start of a new assurance engagement, assurers offer pre-assurance and flexible assurance scopes, allowing them to recruit clients on restricted scope engagements. During assurance engagements, assurers educate managers and encourage altering the norms underlying sustainability reporting. At the end of the assurance engagement, assurers provide a management report demonstrating the benefits of assurance and encouraging clients to broaden engagement scopes. However, with each assurance engagement, the suggestions offer diminishing returns, often causing managers to question the benefits of broad-scoped engagements and to consider restricting the scope to realize savings.

The extent of managerial capture over the EER assurance process has the potential to distract from the quality of EERs as it serves the commercial and professional interest of the firm and assurer (Edgely, Hickman & Cote, 2019; Jones & Solomon, 2010). Hickman and Cote (2019) find that influential managers could capture the assurance process even as they promote CSR efforts. Accounting assurers may take a narrow view of non-financial assurance, focusing on the auditable trail of data to confirm the reliability of the information reported. Regarding materiality and completeness, it appears assurers emphasize the accuracy of the numbers as opposed to the impact of the numbers. Omitted, but potentially important information, may be ignored. However, Edgely, Jones and Solomon (2010) document that assurance adds value for both management (by improving management systems, enhancing reputation, and defending management's position) and stakeholders (by improving the quality of information and holding management accountable to stakeholders). Evidence of continuing managerial capture over assurance remains evident, but stakeholder inclusivity is steadily becoming more important.

Channuntapipat et al. (2019) provide a categorization of different types of assurance engagements that could place the various ethical issues in context. In social assurance engagements, the assurer is a sustainability promoter and the engagement serves the interests of a variety of stakeholders. A holistic

view is used to set the scope of the engagement and often includes direct stakeholder consultation with less emphasis on the benefits for management. In integrated assurance engagements, sustainability focuses on the survival of the firm and management interests are emphasized. The scope is still broad and not limited to Key Performance Indicators (KPIs). Formative assurance engagements focus on specific KPIs where the scope is flexible to fit and serve management interests. Finally, compliance assurance engagements focus on specific sets of data where standardized criteria (e.g., ISO) determine the scope and the assurer is an information verifier.

Although at an early stage, a literature is developing on the assurance of integrated reports. Briem and Wald (2018) examine firms' reasons for voluntarily obtaining external assurance on integrated reports and the role of assurers in the process. Coercive pressures from stakeholders motivate firms to assure their integrated report. External validation, reliability, and the appreciation of EERs were the main motives for companies to apply integrated reporting assurance. Assurers are change agents for the implementation of integrated reporting assurance by supporting the accurate interpretation of the IIRC's standards and by promoting integrated reporting. Maroun (2019b) identifies three broad views on the assurance of integrated reports. An expectation management perspective emphasizes the role of assurance as a legitimization tool and requires no amendments to current assurance standards. A value-adding perspective highlights the role of assurance in improving the usefulness of information being reported to stakeholders and its role as part of a larger corporate governance system. This can develop into a change-potential perspective in terms of which assurance is used to encourage positive organizational change, something which may require the development of new standards or guidelines for assuring integrated reports.

Decaux and Sarens (2015) and Maroun (2018) examine combined assurance. Decaux and Sarens (2015) identify six components of combined assurance. First, the success of combined assurance implementation depends on the maturity of enterprise risk management. Second, the tone at the top matters. Third, a combined assurance coordinator has to be appointed, who will take responsibility for the project. Fourth, it is important to identify areas that need assurance based on board, executive, and stakeholder priorities. Fifth, an assurance mapping is necessary, indicating the assurance providers, the assurance required, and the assurance mission for each assurance provider (to avoid duplication and gaps). Finally, the implementation ends with the issue of a combined assurance report showing a global picture of assurance coverage to the board and the audit committee to allow them to implement their oversight role appropriately. Maroun (2018) identifies elements of an interpretive assurance model which focusses on delivering assurance on the interpretation and analysis of information included in an integrated report as opposed to the underlying data. These include an assessment of the completeness of the description of the value creation process provided in an integrated report, the methods used to support management's discussion and analysis, and the reasonability of the review process implemented to ensure the integrity of qualitative, subjective, and future-orientated statements contained in an integrated report.

## 9 | SURVEYS

Our sample includes seven articles that use survey methods.<sup>11</sup> Two studies survey preparers (Darus et al., 2014; Green et al., 2017), two survey internal auditors (Soh & Martinov-Bennie, 2015, 2018), one surveys users (Romero et al., 2014), one surveys assurers (Ekasingh et al., 2019), and one surveys preparers, users, and assurers (Green & Taylor, 2013).

Three of the studies examine GHG assurance. Given the differences between traditional financial statement audit and GHG assurance, a key question is the factors that influence perceptions of GHG

assurance quality. Green and Taylor (2013) document that, in Australia, perceptions of assurer quality are primarily influenced by the ethics and integrity of the assurer as well as the assurance, GHG emissions, and regulatory knowledge of the assurance team leader and the assurance team. Their results indicate that there is limited ability for assurers to differentiate their services through becoming industry specialists, because general types of knowledge are considered more important than industry-specific knowledge and the number of clients that the assurer has in the same industry. Contradictory to the concerns of regulators and the evidence in the financial statement audit area, the least important factor that affected the perceptions of GHG assurance quality was whether the GHG assurer provided non-audit services to its clients.

Green et al. (2017) determine the attributes that influence Australian corporate officers' choice between an accounting and a non-accounting GHG assurer. The most important traits were those related to the team and team leader's knowledge of assurance and the measurement of GHG emissions and those related to the assurer's independence, objectivity, and reputation. The cost of the engagement was moderately important, as was the knowledge of the client's industry and GHG assurance experience of the assurance team and team leader. Firms that chose accounting assurers attached more importance on assurance knowledge were more geographically dispersed and required the same assurer for their GHG and financial statements. Both categories of firms believed that auditing and science/engineering skills are important in GHG assurance engagements.

Given the complexity of the assurance task, GHG assurance typically involves multidisciplinary teams. Ekasingh et al. (2019) examine the impact of team member elaboration on different information and perspectives and educational diversity on multidisciplinary GHG assurance team effectiveness. They document that team processes are significantly associated with the effectiveness of multidisciplinary GHG assurance teams. Team members who perceive they have sufficient elaboration on diverse perspectives also perceive teams to work more effectively together. While there is no direct relationship between team diversity and multidisciplinary GHG team effectiveness, the level of educational diversity in the team is associated with sufficient elaboration of different information and perspectives. Collectively, the evidence presented by Ekasingh et al. (2019) suggests that the benefits of elaborating on different information and perspectives outweigh the negative effects of diversity such as coordination and communication difficulties.

Relatively, little is known about the role of internal auditors in the assurance of EERs. This is becoming increasingly important, given the development of combined assurance of integrated reports. Soh and Martinov-Bennie (2015, 2018) investigate the role of internal audit in non-financial assurance in Australia. Their evidence suggests that internal auditors are involved in providing assurance on governance issues and in social issues to a reasonable extent. However, they perform a limited role in relation to environmental issues (Soh & Martinov-Bennie, 2015). Internal auditors also report lower levels of consulting activities for all categories of ESG issues relative to assurance activities (Soh & Martinov-Bennie, 2015). Management support and external reporting of sustainability information are key factors associated with internal audit's involvement in environmental and social assurance and consulting activities (Soh & Martinov-Bennie, 2018). Audit committee oversight, the maturity of the internal audit function, industry, and the presence of a Big Four auditor are associated with the level of internal audit involvement in sustainability areas (Soh & Martinov-Bennie, 2018).

## 10 | OTHER METHODS

Three articles are included in this category. Two employed mixed methods (Haider & Nishitani, 2020; Sawani et al., 2010) and one used the analytical method (Srivastava et al., 2013).



Two country-specific studies investigate assurance trends through interviews and surveys. Haider and Nishitani (2020) consider the views of corporate managers on the state and future prospects of EER assurance in Japan. Their evidence confirms a low demand for assurance in Japan, where external assurance and third-party comments are perceived to provide similar benefits to firms regarding the credibility of EERs. Manufacturing firms and firms with foreign ownership perceive external assurance to be more important than third-party comments. Sawani et al. (2010) investigate EER practices in Malaysia. They document that most sustainability information is included in the integrated report without assurance because of a lack of awareness about assurance and the absence of legislative pressure.

Finally, Srivastava et al. (2013) illustrate the use of evidential reasoning to provide EER assurance. The evidential reasoning approach provides a plan for collating assurance evidence and facilitates the evaluation of whether the evidence is at a level required by the assurance provider. Based on this assessment, the assurance provider can perform additional procedures or issue a report.

## 11 | IDEAS FOR FUTURE RESEARCH

In this section, we discuss ideas for future research related to the IAASB's proposed non-authoritative guidance on EER assurance. Our intention is to generate ideas for academic researchers that may be informative to the IAASB's EER project.<sup>12</sup> Krasodomska et al. (2021) provide an overview of the IAASB's activities on EER.

The IAASB's stated objective with the Guidance is "to promote consistent high-quality application" of ISAE 3,000 (Revised) in EER assurance engagements, and "thereby to strengthen the influence of such engagements on the quality of EERs, enhance trust in the resulting assurance reports, and engender greater confidence in the credibility of EER reports so that they can be trusted and relied upon by their intended users" (IAASB, 2020, p. 57). A number of concepts emanate from this objective, namely "consistent high-quality application" of ISAE 3,000 (Revised), EER quality, trust in assurance reports, EER credibility, and intended users. All of these concepts are open to empirical examination. For example, the IAASB is concerned about the consistent application of the Standard. Researchers can therefore examine factors that enhance or diminish consistent application of the Standard. Given the competitive market pressures surrounding EER engagements and the fact that the Guidance is non-authoritative, an important question is whether the Guidance will affect practice.

The Guidance contains 12 chapters relating to the specific stages of an EER engagement and the unique EER considerations in each case. While the entire Guidance provides useful reading to motivate research, we discuss research ideas emanating from certain chapters below.<sup>13</sup>

Chapter 1 of the Guidance deals with the assignment of the engagement team with the necessary competence and capabilities needed to perform the assurance engagement. The Guidance recognizes that given the diverse nature of EER engagements, they often involve multidisciplinary engagement teams with different levels of assurance and subject matter expertise. This creates challenges and risks for the supervision of engagement team members and the review of their work. Kim et al. (2016) provide initial evidence of biased processing by multidisciplinary GHG assurance teams. Further research on biases that arise in multidisciplinary teams and conditions that could alleviate these biases are warranted. This area is well suited to experiments and qualitative methods such as interviews and case studies.

Given that the underlying subject matter in an EER engagement is often characterized by measurement subjectivity, management bias, and estimation and evaluation uncertainty, Chapter 2 of the Guidance discusses the importance of applying professional skepticism and professional judgment in an EER engagement. Apart from Edgley et al. (2015) and Canning et al. (2019) who evaluate professional judgment relating to materiality, none of the 121 articles in our sample examines professional

judgment or skepticism. Boiral et al. (2019) provide some evidence how the ethical issues in EER assurance affect professional skepticism. Behavioral research has the potential to examine impediments to professional skepticism and related remedies. This is a fruitful area for future research because the literature has identified the extent of managerial capture resulting from the competitive market of EER assurance services as a concern for professional judgment and skepticism. Eutsler et al. (2018) and Harding and Trotman (2017) provide recent examples from the financial statement audit literature on professional skepticism, and Nelson (2009) and Hurtt et al. (2013) provide a review of the literature on auditor professional skepticism and opportunities for future research. Most of this literature translates to EER assurance engagements, yet we have limited evidence specific to EER assurance.

Chapters 3 and 4 of the Guidance focus on applying the acceptance and continuance requirements of the Standard, including agreement on the scope of the engagement and the suitability and availability of criteria. These chapters of the Guidance refer to some of the key amendments made to ISAE 3,000 as part of the 2013 revision intended to address the concerns regarding managerial capture of the assurance engagement and process. Farooq and De Villiers (2019a: 436) describe the sustainability assurance as a “carefully choreographed dance aimed at verifying the reliability of what senior managers and boards are comfortable putting in their sustainability reports and what assurance providers are comfortable providing assurance over.” Continuing this status quo means that EER and assurance have limited societal value. Therefore, standard setters need to address this concern. ISAE 3,000 (Revised) determines that an assurance engagement may only be accepted if it has a rational purpose, the underlying subject matter is appropriate and the criteria that the assurer expect to be applied in the preparation of the subject matter information are suitable for the engagement circumstances. ISAE 3,000 (Revised) also requires assurers to specifically consider the information needs of the intended users of the EERs in determining whether an engagement has a rational purpose. In essence, this means that a practitioner cannot accept an assurance engagement if they believe that relevant information is excluded from the assurance scope by management. Future research could investigate the efficacy of these ISAE 3,000 (Revised) amendments. How have practitioners implemented the rational purpose, underlying subject matter and suitable criteria requirements of ISAE 3,000 (Revised)? How has this affected the scope of assurance engagements? Are there any implications of the revised Standard for professional accountants’ position in the assurance market for EER engagements? Have EERs and related assurance reports become more useful to the intended users of EERs? How have the revised requirements affected preparers of EERs? This area is well suited to qualitative methods such as interviews and case studies.

Chapter 9 covers materiality. The Guidance determines that “misstatements are generally considered to be material if they could reasonably be expected to influence relevant decisions of intended users” (IAASB, 2020, p. 129). A key consideration is how an assurer determines both quantitatively and qualitatively what could reasonably influence the decisions of users. A novel approach identified in the literature is the use of stakeholder panels to advise and assess material issues to be addressed in EERs (e.g., Edgley et al., 2015; O’Dwyer, 2011). Limited evidence exists on the benefits and costs to involving stakeholders in the assurance process. Research can address this gap through interviews and case studies, while archival studies could provide evidence on whether capital markets value the involvement of stakeholders in the assurance process. Data availability may restrict the feasibility of archival studies.

Chapter 10 of the Guidance deals with the preparation of the assurance report. The literature refers to the risk of users not understanding assurance reports and conclusions. Ackers and Eccles (2015, p. 536) argue that the difference in assurance report wording between limited and reasonable assurance may be “so discreet that uninformed users may possibly not notice the difference” and that this “nuanced differentiation undermines the objective of independent CSR assurance while exacerbating report user confusion.” Hodge et al. (2009) argue that the “limited” and “reasonable” terminology to indicate the level of assurance may not be effective in communicating the intended level of assurance

and may contribute to an expectation gap. Interviewees in O'Dwyer et al. (2011) expressed concern that the restricted nature of the assurance reports where preference is given to formal procedure over transparent communication runs the risk to make assurance valueless to the intended users of EERs.

Given that the assurance report is often the assurers' only communication with the intended users of EERs, its wording and content is important. The Guidance clarifies that ISAE 3,000 (Revised) specifies the minimum content of assurance reports, but it does not require a standardized format and may be tailored to specific engagement circumstances. Research on the wording of EER assurance reports is needed to assist standard setters in identifying the important aspects that aid different users' (e.g., professional and non-professional users) understanding of the assurance engagement and outcome. Despite the Guidance acknowledging that the "assurance report is the only means by which the practitioner communicates the outcome of the assurance engagement to the intended users," it determines that the report is "usually addressed only to the engaging party or the directors, management, or other stakeholders" (IAASB, 2020, p. 133, 134). A natural question is whether it matters to whom the report is addressed? Do the intended users of the report pay more or less attention depending on whether the report is addressed to them or not? Experimental studies focussing on different wording of assurance reports are particularly suited to these questions. Engaging eye tracking techniques may provide useful insights to determine the exact content of the assurance report users focus on.

## 12 | CONCLUSION

The assurance of EERs is a global activity that has far-reaching consequences for business, investors, other stakeholders, and society. The reporting and assurance of EERs, which remains largely unregulated, is not immune to the scandals of Enron and WorldCom, which resulted in increased regulation in financial statement auditing (Boiral and Heras-Saizarbitoria, 2020). Given the importance of the topic and the IAASB's recent focus on assurance of EERs, we review the literature on EERs to serve as a possible input for the Board's standard setting activities. In addition, we provide areas of investigation that future research could address.

We review 121 articles between 2009 and 2020 across 35 journals covering archival, experimental, interviews, case studies, surveys, content analysis, and other methods. We contribute to the EER literature by being the most current and comprehensive review to date. We document a rapid increase in this literature with almost half of the publications in 2018 to 2020. While archival methods are the dominant method in the literature, experimental methods, and interviews also feature strongly in the highest ranked journals. For archival studies, we find that the literature mainly covers the determinants and consequences of assurance. Studies using experimental methods, interviews, surveys, and content analysis investigate a range of issues including managerial and professional capture, turf wars between accountant and non-accountant assurers, scope of assurance engagements, level of assurance, assurance report wording, and the lack of regulation and standards.

Finally, we offer research ideas around the assignment of the engagement team, professional skepticism and professional judgment, the rational purpose requirement, stakeholder panels, and the assurance report. We encourage researchers to engage in these and other issues of the IAASB's Guidance to assist them with valuable input for their standard setting activities.

## ACKNOWLEDGEMENT

The authors thank Elizabeth Gordon, Joanna Krasodomska, Roger Simnett, and Donna Street for comments on a previous draft of the paper.



## ENDNOTES

- <sup>1</sup> Consistent with the terminology of the International Auditing and Assurance Standards Board (IAASB), we will use the label EERs to cover all of these types of reports.
- <sup>2</sup> The proposed non-authoritative guidance was issued during March 2020, and comments were due by July 13, 2020. It is expected to be published by the IAASB in early 2021.
- <sup>3</sup> Although Maroun's (2020) review is the most recent, he does not provide a description of the method used to select the articles for his review. His article was published online on June 25, 2018, which suggests that most of the articles reviewed by him predated 2018. Only one of the articles that we identify as published since 2018 is included in his reference list.
- <sup>4</sup> We also considered searching for "audit" instead of "assurance." However, this results in numerous irrelevant articles focussing on process and project audits which do not relate to the assurance of externally reported information to the benefit of the public interest. We also searched "nonfinancial."
- <sup>5</sup> Combined assurance is a novel credibility-enhancing mechanism that is developing in the integrated reporting context (Maroun & Prinsloo, 2020; Zhou, Simnett, & Hoang, 2019). Given the difficulty to assure the information in integrated reports through traditional external assurance, combined assurance recognizes that there are various "lines of defense" within a firm that support the credibility of externally reported information. Hence, combined assurance is the process through which the audit committee coordinates the assurance activities of management, internal assurance providers, and external assurance providers and concludes on the effectiveness of risk management, internal controls, and reporting quality. Therefore, instead of obtaining assurance from only one independent external assurance provider, combined assurance coordinates the assurance activities of management, internal assurance providers, and external assurance providers to collectively ensure the effectiveness of the control environment which ultimately supports the integrity of information used for internal decision-making, as well as external reporting (Decaux & Sarens, 2015).
- <sup>6</sup> This search was undertaken on August 4, 2020. Despite not strictly meeting our key words, we add Wang, Zhou, and Wang (2020) because they address assurance of integrated reports.
- <sup>7</sup> Journals are ranked into A\*, A, B, and C quality categories, with A\* being the highest ranking. Refer to [www.abdc.au.edu](http://www.abdc.au.edu).
- <sup>8</sup> In cross-country studies, firm size could vary between countries. Archival studies typically use sales, total assets, or market capitalization as proxies for firm size. To the extent that the inclusion of country-level control variables does not adequately control for country effects, the size variable may reflect country-level differences.
- <sup>9</sup> Integrated report quality is a distinct construct from financial report quality. Maroun (2019a) uses the rankings provided in the EY Excellence in Integrated Reporting Awards for the largest South African firms as a proxy for integrated report quality. Ahmed Haji and Anifowose (2016) use a checklist based on the International Integrated Reporting Council (IIRC) Framework to measure integrated report quality.
- <sup>10</sup> Reimsbach, Hahn, and Gurturk (2018) use CO<sub>2</sub>, female senior management, and tabulation as sustainability information. They do not provide context to the nature of the firm (e.g., industry) used in their study. Hence, it is difficult to evaluate whether these NFI components are supposed to affect investors' judgments.
- <sup>11</sup> Ekasingh, Simnett, and Green (2019) is technically not a survey, but a retrospective field study. We include it in the survey category because of the similarities between the methods.
- <sup>12</sup> Readers who are interested in research ideas on EER that are not directly linked to the IAASB's project can refer to Cohen and Simnett (2015b), Farooq and De Villiers (2017), Maroun (2020), Simnett and Huggins (2015), and Velte and Stawinoga (2017).
- <sup>13</sup> The order of the chapters may change in the final guidance to be issued by the IAASB. Researchers should therefore link the chapters that we refer to the appropriate chapters in the final guidance.

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**How to cite this article:** Venter ER, van Eck L. Research on extended external reporting assurance: Trends, themes, and opportunities. *J Int Financ Manage Account*. 2021;32:63–103. <https://doi.org/10.1111/jifm.12125>