VILNIUS TECH
Vilnius Gediminas Technical University

Business: Theory and Practice
ISSN 1648-0627 / eISSN 1822-4202
2023 Volume 24 Issue 2: 488–500
https://doi.org/10.3846/btp.2023.18537

EFFECT OF INTEGRATED REPORTING AND ENVIRONMENTAL REPUTATION ON COMPREHENSIVE DECISION-MAKING NON-PROFESSIONAL INVESTORS

Arif WIDYATAMA, Dian AGUSTIA*, Ardianto ARDIANTO, Noorlailie SOEWARNO

Department of Accounting, Faculty of Economics and Business, Universitas Airlangga, Surabaya, Indonesia

Received 27 January 2023; accepted 28 April 2023

Abstract. This study is to examine the effect of integrated reporting and environmental reputation on the comprehensive decision-making by non-professional investors. Specifically, this study examines the process investors use to make comprehensive decisions (i.e. acquisition, evaluation, weighting, and judgment) when seeing information about companies' integrated reporting and environmental reputations. We use a web-based experiment, or 2x3 between-subjects design, to investigate whether companies' integrated reporting and environmental reputations have any influence on non-professional investors' comprehensive decision making. 157 participant randomly selected students to serve as surrogate investors in this experiment. The data obtained were then tested using ANOVA and followed by a post hoc test. The findings show that companies that provide integrated reporting and have an environmental reputation make it easier for non-professional investors to make comprehensive decisions. Research on integrated reporting is scarce. There has been some research on the relationship between integrated reporting and investment decision making, but the environmental reputation of the relationship between integrated reporting and investment decisions has not been extensively explored. In fact, environmental issues are global issues. Furthermore, we argue that this research is very important to be carried out in Indonesia, considering that the arrangements regarding the presentation of various information can be carried out in an integrated or separate manner. This study can provide suggestions for regulators about the importance of regulations regarding the obligation to present financial and non-financial information in an integrated manner.

Keywords: integrated reporting, environmental reputation, comprehensive decision making, non-professional investors' judgment.

JEL Classification: G40, M41.

Introduction

This study aims to examine the relationship between companies' integrated reporting (IR) and their environmental reputations on the comprehensive decision-making of non-professional investors. Managers, as company managers, will report information related to their company's financial, non-financial, business strategies and value creation performance in an integrated manner (De Villiers et al., 2014; Rinaldi et al., 2018; Esch et al., 2019; Farneti et al., 2019). This is important because, if the information is presented separately, spread across a large number of pages, this can mean the investors waste time and feel saturated by the amount of information, resulting in difficulties in their decision-making (Rikhardsson & Holm, 2008; Cardinaels & Van Veen-Dirks, 2010; Reimsbach et al., 2018; Esch et al., 2019a, 2019b; Bucaro et al., 2020). Although some studies such as Arnold et al. (2012), Cheng et al. (2015), Espahbodi et al. (2019), Haji et al. (2021), Permatasari and Narsa (2021) shows that sustainability reporting is more informative in decision-making than IR but other studies such as Rikhardsson and Holm (2008), Cardinaels and Van Veen-Dirks (2010), Ghosh and Wu (2012), Shen et al. (2017), Reimsbach et al. (2018), Steinmeier and Stich (2019) has shown that IR has a positive relationship with non-professional investors' judgment. This indicates that non-financial information is the focus in increasing the reliability and credibility of information (Alsahali & Malagueño, 2021). IR is the final form of the corporate reporting process which consists of financial and non-financial performance information (Camilleri, 2018; Vitolla et al., 2019a, 2019b; Wachira et al., 2019), as well as information on the companies' strategies for value creation (De Villiers et al., 2014; De Villiers & Sharma, 2016). Because of that, integrated reporting

*Corresponding author. E-mail: *dian.agustia@feb.unair.ac.id*

can provide value-relevant information for investors, for their decision-making (Adams & Simnett, 2011; Akisik & Gal, 2019). This research fills this gap through experimental research methods able to show that by controlling for variables other than the form of presentation of variables and environmental reputation will influence investors' decision making in a comprehensive manner.

Managers not only present integrated reports but also need to contribute to environmental issues, so as to provide a positive image for their company. A company's environmental reputation is a form of acknowledgment by an independent third party, and is based on the company's activities with respect to the environment (Birkey et al., 2016; Fasaei et al., 2018; Reimsbach et al., 2018; Alvarado-Herrera et al., 2019), so this assessment can affect the investment behavior of shareholders. Companies' environmental reputations are important because they help them legitimize their operations to the various stakeholders in society (Aerts & Cormier, 2009; Alewine & Miller, 2016; Bellucci et al., 2021; Deegan, 2002), so it is important to know the behavior of investors in Indonesia when choosing a company that has a good, and bad environmental reputation.

In Indonesia, the presentation of information about company performance is still diverse. Although aspects of non-financial information have become a special concern for most companies, the presentation of financial and non-financial information is still very diverse. Some companies present financial and non-financial information separately in the form of a sustainability report (SR) and financial statement, but some companies present it in one report in the form of an annual report (AR). OJK Regulation No. 51/2017 (POJK 51/2017) explains that each company can present information separately or in an integrated manner. This difference in presentation causes differences in the decision-making process (Arnold et al., 2018; Arnold et al., 2012; Bucaro et al., 2020; Cheng et al., 2015; Espahbodi et al., 2019; Haji et al., 2021; Reimsbach et al., 2018). We fill this gap by examining which types of information are preferred by investors in the decision-making process, whether the information is integrated in the form of AR or separated in the form of SR and financial reports. Not only the type of report but also the environmental reputation also influences the decision-making process, so that many companies actively participate in environmental activities with the aim of obtaining a good image. This condition is then noticed by external parties who give awards in the form of good, bad reputation or even external parties do not provide value because the company is considered not to pay special attention to environmental issues. Thus, the behavioral aspects of each individual are strongly influenced by the form received. This study helps fill this gap by examining whether different presentation forms and enviromental reputation will affect comprehensive decision-making investors.

This study used a 2×3 factorial experimental design, a between-subject design and a model from Maines and McDaniel (2000) and models developed from it (Dilla et al., 2013; Lachmann et al., 2015; Reimsbach & Hahn, 2015; Reimsbach et al., 2018; Dilla et al., 2019) as basic models of investor behavior when processing information (i.e. acquisition, evaluation, weighting, and judgment). We tested 157 non-professional investors using an experimental design.

The results of this study indicate that integrated reporting and environmental reputation have a significant influence on comprehensive decision making. We formulate our hypotheses regarding comprehensive decision-making by non-professional investors, in view of the companies' integrated reporting and environmental reputations. The results of this study indicate that information that is presented in an integrated manner and has a good environmental reputation can improve the quality of investor decision making.

This study makes some contributions to the academic world, firstly studies into integrated reporting and investor decision-making are still limited, especially those using the experimental approach. Similar previous research has been undertaken by Bucaro et al. (2020), Haji et al. (2021), who all conducted studies on the presentation of financial information and corporate social responsibility (CSR) to investors' judgments and investors' firm value estimates. The results of both show that the information presented separately had an effect on investors' decisions. On the other hand Arnold et al. (2017) argues that financial and CSR information which is presented in an integrated manner can reduce the information asymmetry that occurs. Furthermore, Reimsbach et al. (2018) conducted an IR study which looked into the sustainability information assurances of investors' information processing professionals; this study showed that combining sustainability and financial information into one report increased the potential for access to sustainability information. In addition, there is no previous research examining the relationship between IR and environmental reputation on decision making. We fill this research gap regarding IR especially in developing countries whether it has a role in the investment decision-making process or not. Secondly, We have explored the literature on the relationship between integrated reporting and investment decision making, environmental reputation have not been explored. This paper adds to the literature by increasing the understanding that environmental reputation needs to be considered in compiling an integrated report in Indonesia. Then, to the author's knowledge, there has been no previous research examining the impact of environmental reputation in integrated reporting on the investment decision-making process. Thirdly, most of the research on Integrated reporting uses a laboratory-based experimental approach. We use a website-based experiment due to the COVID-19 pandemic, but we strictly control the participants so they are not disturbed by variables outside the model.

In accordance with predictions, it is found that a non-professional investor's judgment is more concerned with investing in companies that report their performance (i.e., financial, environmental, social, and governance) and

their strategies for creating value in an integrated manner, rather than separately. The presentation of information about a company's performance will be easy to remember when the information is presented in one report, compared to when it is spread between several separate reports (Reimsbach et al., 2018; Akisik & Gal, 2019; Esch et al., 2019a, 2019b). At the same time, investors' decisions are also influenced by companies' environmental reputations (Adams & Simnett, 2011; Akisik & Gal, 2019). Environmental issues are important issues for investors to consider during their investment decision-making, because a company's concern for the environment is an important factor in ensuring the company's existence over the long term. Therefore, any distraction caused by information obtained about a company's environmental reputation can affect the decision-making process.

This paper is written in a structured manner. The next section discusses companies' integrated reporting and environmental reputations and their impact on investors' comprehensive decision making. Next, we will formulate our hypotheses regarding comprehensive decision-making by non-professional investors, in view of the companies' integrated reporting and environmental reputations, including the experimental design. Then we will show the statistical results. In the final section, we will discuss the results of the discussion, including the limitations of this study and the potential for future research.

1. Literature review and hypothesis development

1.1. Literature review

The cognitive load theory (Sweller, 1988, 1989) explains the cognitive resources used when solving problems. Information that is presented separately and not related to other pieces of information will create a large and irrelevant cognitive burden, making it difficult to reach a decision. Basically, every human being has a limited memory capacity, so, in order to make it easier to process information, the information received must be integrated so as not to create a large cognitive burden when makingdecisions. This theory can be applied to the decisions made by investors, based on the information they receive. Therefore, in order to make it easier for investors to understand and make decisions, the information presented must be easy to understand and not create a large cognitive load. Several studies, such as those by Maines and McDaniel (2000), Lachmann et al. (2015), or Reimsbach et al. (2018), have shown that the manner in which information is presented can affect the quality of the information received by investors. However, research that links the cognitive load theory and integrated reporting is still very limited (Reimsbach et al., 2018; Esch et al., 2019a, 2019b). Integrated reporting is a form of presenting financial and non-financial information and strategies used to create value for companies.

The stakeholder theory explains that the company is not an entity that operates for its own sake but also for other stakeholders (Carroll, 1999; Mitchell et al., 1997). Therefore, every company activity can be a form of consideration for other stakeholders, especially investors, in order to obtain a good image. Investors are the first stakeholders to be satisfied, because the role of investors in the company will determine the survival of the company. Therefore, in improving the quality of the company so that investors are interested in investing, the company takes various ways, including carrying out activities regarding environmental concerns which are now a global issue. Every form of environmental activity carried out by the company can be disclosed directly through the presentation of non-financial information separately or integrated with financial information. Managers, as company managers, will report information related to their company's financial, non-financial, business strategies and value creation performance in an integrated manner (De Villiers et al., 2014; Rinaldi et al., 2018; Esch et al., 2019a, 2019b; Farneti et al., 2019). This is important because, if the information is presented separately, spread across a large number of pages, this can mean the investors waste time and feel saturated by the amount of information, resulting in difficulties in their decision making (Rikhardsson & Holm, 2008; Cardinaels & Van Veen-Dirks, 2010; Reimsbach et al., 2018; Esch et al., 2019a, 2019b; Bucaro et al., 2020). Although some studies such as Arnold et al. (2012), Cheng et al. (2015), Espahbodi et al. (2019), Haji et al. (2021), Permatasari and Narsa (2021) shows that sustainability reporting is more informative in decision making than IR but other studies such as Rikhardsson and Holm (2008), Cardinaels and Van Veen-Dirks (2010), Ghosh and Wu (2012), Shen et al. (2017), Reimsbach et al. (2018), Steinmeier and Stich (2019) has shown that IR has a positive relationship with non-professional investors' judgment. Disclosure of financial performance through the integration of financial and non-financial information can be more effective when the information is supported by additional information from external parties in the form of environmental reputation. Environmental reputation can be a contributing factor influencing investor behavior to invest (Bellucci et al., 2021; Park et al., 2020; Perrault & Clark, 2016).

1.2. Hypothesis development

1.2.1. Acquisition of integrated reporting

An investor's first step in the information-processing framework is through acquisition, which is not only by reading, but also storing and recalling (Lachmann et al., 2015; Elliott et al., 2016; Reimsbach et al., 2018), as can be seen in Figure 1. The information generated by a company is information that reflects that company's performance, so when the information is presented in an integrated manner, it is easier for investors to read, absorb and recall this information, as a basis for their decision making. This is because the memory of each investor is limited (Sweller, 1988, 1989) so that it is easier for investors to absorb information when it is integrated, compared to when it is separated. After the information is absorbed by

investors, it is easier to recall, so that information about the company's performance, which is presented on one page, makes it easier for the stakeholders to make decisions (Adams & Simnett, 2011; Akisik & Gal, 2019). In addition, when the company only displays separate company performance information, investors cannot make decisions based on a comprehensive analysis, making it difficult for them to reach a decision. However, if the company presents its financial and non-financial information, as well as its integrated strategy, investors will be able to comprehensively assess the company. This argument is supported by research conducted by Mcnally et al. (2017), Zhou et al. (2017), and Naynar et al. (2018). In the capital market, investors, when making decisions to invest, will refer to the information generated by companies. The information which is needed is not separate information but information that is integrated (Mcnally et al., 2017; Zhou et al., 2017; Naynar et al., 2018). Therefore, the International Integrated Reporting Council (IIRC) recommends that financial and non-financial information should not be provided in isolation (De Villiers et al., 2014; De Villiers & Sharma, 2016), so companies present information about their financial and non-financial performance, as well as the strategies they use, in an integrated manner, which can have implications for the companies (De Villiers et al., 2014; Birkey et al., 2016; De Villiers & Sharma, 2016; Bernardi & Stark, 2018). Integrated reports are easier for investors to understand, so they tend to invest in the companies that produce reports like that (Zhou et al., 2017; Obeng et al., 2020). This hypothesis has a very important relationship with conditions in Indonesia, because companies in Indonesia are still not required to present integrated financial performance information, making it difficult for investors to comprehensively understand the companies. Based on the explanation above, the following hypothesis was formulated.

H_1: Non-professional investors find it easier to obtain company information from integrated reports, rather than from separate ones.

1.2.2. Comprehensive decision-making by investors based on companies' integrated reporting and environmental reputations

After obtaining a company's performance information, investors evaluate it, assess it and weight it. When investors have obtained clear and precise information about the company's performance, they will immediately use the information to comprehensively evaluate the company's performance. The evaluation of information is one of the stages of the investment process carried out by investors to appraise investments before entering the weighting stage. Evaluating information is different from weighting its value. The evaluation of information is the process by which investors interpret the information obtained, while information weighting is the process by which investors assign a level of importance to the information (Maines & McDaniel, 2000; Lachmann et al., 2015). However, the evaluation results of the company's performance that are presented in an integrated manner may change due to new information about the company's reputation. In Indonesia, the environmental issue is an important issue to pay attention to, because the company has a positive image when the company has a concern for environmental issues which is marked by the form of news from external parties. The second hypothesis supports the stakeholder theory, which explains that additional information presented by third parties will be responded to differently by investors when they evaluate, weight and judge the information they obtained, so any additional information will require a fresh assessment by the investors before making any decision. This additional information has greater credibility than the information found in the company's reports about its environmental awareness activities (Zheng et al., 2013; Birkey et al., 2016; Bakumenko & Sigal, 2018; Fasaei et al., 2018). This is because recognition from outside the company has a big impact on increasing investor confidence in valuing the company. When assessing companies for investment, outside information is very influential for an investor's psychology (Zheng et al., 2013; Bakumenko & Sigal, 2018; Alvarado-Herrera et al., 2019). This environmental reputation is important because it is used by investors to consider investments with long-term goals. Companies that are environmentally conscious are considered more sustainable than others (Liao et al., 2015; Bakumenko & Sigal, 2018; Fasaei et al., 2018; Green & Cheng et al., 2019). Based on the description above, the following hypothesis was formulated.

H_{2a}: Information from external parties on environmental issues will make it easier for non- professional investors to evaluate information about a company's performance, if it is presented in an integrated manner rather than separately.

After evaluating a company, investors will weigh the company's condition by referring to the information presented. The company's choice regarding the way it presents information about itself will be considered by investors when determining their investment decisions (Maines & McDaniel, 2000; Lachmann et al., 2015; Reimsbach et al., 2018). This consideration process relies on the evaluation of information about the company's performance, which is produced by the company. Therefore, the integrated form of presenting information makes it easier for investors to give weight to the company's condition, compared to when the information is delivered separately (Reimsbach et al., 2018; Akisik & Gal, 2019; Esch et al., 2019a; Obeng et al., 2020). Investor confidence will increase when there is additional information about the company's reputation from external parties, which can influence their decision making. The environmental reputation of a company is an important element for increasing the company's credibility through other parties, because the information presented in the company's self-disclosure will be doubted by investors during their evaluation process (Belkaoui, 1976; Reimsbach & Hahn, 2015; Bernardi & Stark, 2018; Reimsbach et al., 2018; Vitolla et al., 2019a, 2019b; Wang

et al., 2019). Based on the description above, the following hypothesis is formulated.

H_{2b}: Information from external parties on environmental issues will make it easier for non-professional investors to weight company information about company performance in integrated reporting, rather than in separate reporting.

The final form of investment appraisal is an assessment made by the investors. Previous models by Maines and McDaniel (2000) used three measures for investment appraisals, namely acquisition, evaluation, and weighting. In this study, a proxy with reference to research (Lachmann et al., 2015; Reimsbach et al., 2018) was used to identify whether an investor decided to invest in a company that provided integrated or separate company performance information. Information consisting of financial and non-financial information, along with the strategies used in the value creation process can increase investors' trust and lead them to make investment decisions in favor of the company (Adams & Simnett, 2011; Reimsbach et al., 2018; Akisik & Gal, 2019; Esch et al., 2019a). Integrated reporting will make it easier for investors in their decision-making process to see whether the company is worth investing in or not. In addition, environmental issues, in particular, can provide reasons for investment decisions in favor (or not) of the company (De Villiers et al., 2014; Cooke, 2015; Carp et al., 2019; Calic et al., 2020) because environmental reputation can have a distraction effect on previously obtained information. Environmental issues are sensitive issues for investors when making decisions, so that information about a company's environmental reputation can provide confidence in the company (if its reputation is good) for the investors during their decision-making process. Based on the description above, the following hypothesis is formulated

H_{2c}: Information from external parties on a company's environmental issues will make it easier for non-professional investors to evaluate the company's performance information if it is presented in an integrated manner rather than separately.

2. Method

2.1. Participants

The subjects of this research are Indonesian accounting students who acted as non-professional investors (Maines & McDaniel, 2000; Seaton & Pennington, 2012; Dilla et al., 2013, 2019; Espahbodi et al., 2019). The accounting students in this study are surrogates for the investors. This research used accounting students because they already have knowledge about accounting and investment with the aim of testing the cognitive load theory by looking at the effect of companies' integrated reporting and environmental reputations on comprehensive decision making (Liyanarachchi & Milne, 2005; Elliott et al., 2007). The criteria for becoming a non-professional investor for this study are accounting and management students who have knowledge in the investment field and have taken courses in investing. This research used university students as a proxy for investors for several reasons. First, by using university students this research got homogeneous participants. It is different when an experimental study uses professional investors as participants. Participants who are professional investors will have different skills and experiences, so they may influence other

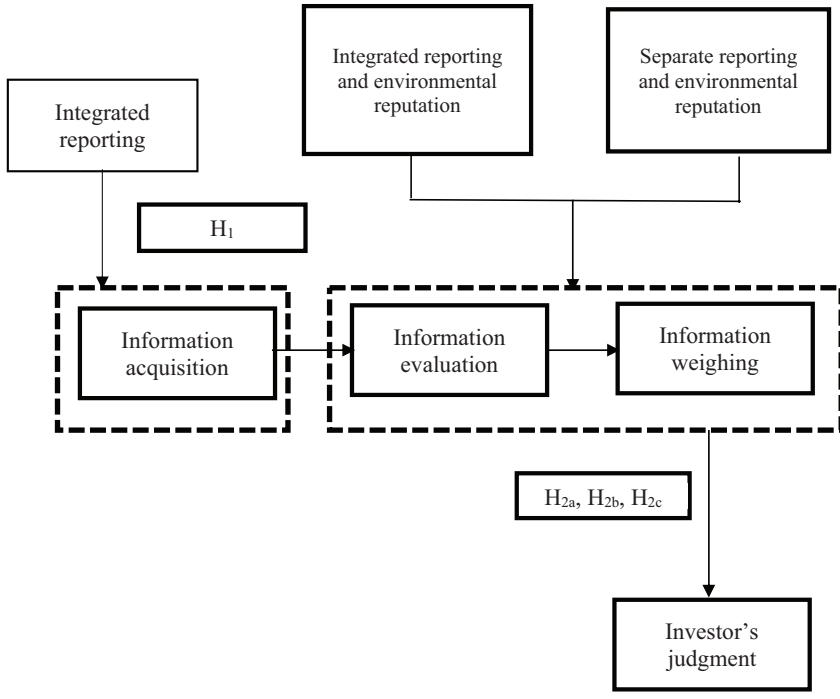

Figure 1. Framework of how investors make decisions based on companies' integrated reporting and their external reputation for environmental issues

investors' perceptions of the information received (Maines & McDaniel, 2000; Cardinaels & Van Veen-Dirks, 2010; Lachmann et al., 2015; Reimsbach et al., 2018). Second, the results of research using students as surrogates, or using professional investors, showed no differences (Liyanarachchi & Milne, 2005; Liyanarachchi, 2007). Liyanarachchi and Milne (2005) tested this by replicating the research conducted by Chan and Milne (1999), and Milne and Patten (2002), which found that there was no difference between students and professional investors as participants in experiments. The criteria for becoming a non-professional investor for this study are accounting and management students who have knowledge in the investment field and have taken courses in investing. The age range of all participants was between 18 and 26. In addition, each participant had a GPA score between 3.00 to 4.00. Table 1 summarises demographic information of the participants.

Table 1. Descriptive statistics for participants

	Frequency	Percent
Final number of participants	157	100
GPA distribution of participants		
3.00–3.2	5	3.18
>3.2–3.4	5	3.18
>3.4–3.6	27	17.20
>3.6–3.8	79	50.32
>3.8–4.00	41	26.11
Age distribution of participants		
18–20	47.77	47.77
21–23	43.95	43.95
24–26	8.28	8.28
Gender distribution of participants		
Female	132	84.08
Male	25	15.92

2.2. Methodology

The web-based experimental approach is a development of an experimental method that isolates the desired condition online, and the researcher's control is very much determined by the website's procedures (Cantrell et al., 2013; Honing, 2006; Keefer & Ashley, 2001), so it fits perfectly with the current COVID-19 pandemic conditions. Experimental studies form a part of quantitative research. This research design used a between-subject design with a 2x3 factorial design, which can be seen in Table 2. The experimental design was carried out using an internet-based design which was similar to a typical company's website, and accompanied by a scenario that had been treated according to the research objectives.

The independent variable used in this study was the type of report, consisting of integrated reporting and separate reporting. The way to manipulate integrated reporting is to present financial and non-financial information (environmental, social, and governance) and the strategies used to create value in one document. On the other hand, manipulating separate reporting is done by presenting financial and non-financial information (consisting of environmental, social, and governance) as well as the strategies used for creating value in separate documents (see Appendix for more details). Next is environmental reputation which consists of two levels, namely a good or bad reputation. The way to manipulate the level of a good reputation is to create a scenario that reflects a form of appreciation from outsiders, which shows that the company cares about the environment. On the other hand, the level of a bad reputation is a scenario that is made to reflect news from outside parties that the company is causing environmental damage. Furthermore, for levels without environmental reputation, we do not provide additional information about environmental reputation.

Table 2. Experimental design for non-professional investors' judgment

Company performance information		
Reputation	Integrated reporting	Separate information
Good Reputation	Integrated reporting with good reputation	Separate reporting with good reputation
Bad Reputation	Integrated reporting with bad reputation	Separate reporting with bad reputation
No information	Integrated reporting but no information about reputation	Separate reporting but no information about reputation

Furthermore, the dependent variable used is comprehensive decision-making is a term used to reflect the process investors in Indonesia take in their decision-making processes. This study follows up the research by Lachmann et al. (2015) and Reimsbach et al. (2018) which used a comprehensive decision-making variable based on the measurements of acquisition, evaluation, weighting and judgment. In contrast to the measurement of decision making from Maines and McDaniel (2000), which used basic measurements, namely acquisition (reading, storing, and remembering), evaluation, and weighting. A judgment measurement is used to see the confidence non-professional investors have when determining the investment they will choose. This judgment measurement can also be referred to as a final belief for investors to decide whether to invest or not, based on the information received. As the final stage, this process is highly dependent on the three previous stages, namely acquisition, evaluation, and weighting. When the three processes are aligned, it means that the judgment stage will follow the results of the three stages so that the presence of integrated information can ease the cognitive burden of investors in deciding on their investments.

2.3. Experimental procedure

The experiment was carried out as follows: First, for the experimental scenario, FGD was conducted with language, and accounting experts, as well as with those who know about integrated reporting and environmental issues, so that the experimental material would reflect a

real situation. Second, the scenarios were tested to assess the content of the experimental material and to see if the experiment was feasible for use with other participants. Third, valid experimental instruments were distributed to the actual students through social media for three weeks with a reward in the form of an e-book worth IDR 150,000 so that students are interested in participating in the experimental activity. Fourth, in the experimental process, each participant was given 20 minutes to complete all the stages of the experimental procedure. This was done to control the length of the experimental process so that it could be controlled in terms of its time, so that if there were participants who took more than the specified time, they would be considered to have failed the experimental process. Participants who had entered the four predefined groups were given instructions and profiles (see Appendix) about the company Batu Bara and Tambang Abadi (BBT). The participants were given different treatments, based on their groups. Each scenario, for both the integrated reporting variables and environmental reputation, were developed by researchers from the available information. In particular, the environmental reputation instruments were adopted from independent organizations outside the company BBT, who provided an assessment of the company's environmental performance. Furthermore, the information was developed to suit the context of the company.

2.4. Check manipulation

To confirm that the manipulation checks were successful, we used created questions for each independent variable, namely the report type and environmental reputation (please see the appendix). If the participant is wrong in answering the manipulation question, the participant is excluded from the study. The number of participants who took part in the experiment was 224 participants, but those who correctly answered the manipulation questions were 157 participants.

3. Result

3.1. Descriptive statistics

Panel A in Table 3 shows the statistical description results. The mean value for the acquisition of investment due to a good reputation was 24.31, while for a bad reputation it

Table 3. Descriptive statistics variable

Panel A: Descriptive statistics (Acquisition) (mean [SD])									
	n	IR		n	SR		N	Σ	
		mean	SD		mean	SD		mean	SD
GR	25	25.00	4.08	27	23.63	3.07	52	24.31	3.57
BR	29	23.28	5.48	22	21.91	4.03	51	22.59	4.76
NR	35	25.14	4.48	19	20.58	4.10	54	22.86	4.29
Σ	89	24.47	14.04	68	22.04	11.20	157	23.26	4.21
Panel B: Descriptive statistics (Evaluation) (mean [SD])									
	n	IR		n	SR		N	Σ	
		mean	SD		mean	SD		mean	SD
GR	25	9.36	1.15	27	8.59	1.25	52	8.98	1.20
BR	29	6.21	2.30	22	6.50	1.37	51	6.35	1.84
NR	35	8.86	1.56	19	7.16	1.54	54	8.01	1.55
Σ	89	8.14	1.67	68	7.42	1.39	157	7.78	1.53
Panel C: Descriptive statistics (Weighing) (mean [SD])									
	n	IR		n	SR		N	Σ	
		mean	SD		mean	SD		mean	SD
GR	25	9.80	1.29	27	9.26	1.32	52	9.53	1.30
BR	29	9.10	1.74	22	8.86	2.08	51	8.98	1.91
NR	35	9.43	1.48	19	8.21	2.25	54	8.82	1.87
Σ	89	9.44	1.50	68	8.78	1.88	157	9.11	1.69
Panel D: Descriptive statistics (Judgment) (mean [SD])									
	n	IR		n	SR		N	Σ	
		mean	SD		mean	SD		mean	
GR	25	9.28	1.10	27	8.67	1.21	52	8.97	1.15
BR	29	6.72	2.22	22	7.27	0.83	51	7.00	1.52
NR	35	8.91	1.52	19	7.84	1.34	54	8.38	1.43
Σ	89	8.31	1.61	68	7.93	1.13	157	8.12	1.37

Note: IR = integrated reporting, SR= separate reporting, GR = good reputation, BR = bad reputation, NR = have no reputation.

was 22.59, and without reputation 22.86. The mean value for obtaining information on company investment due to integrated reporting was 24.47, while for separate reporting it was 22.04.

Panel B in Table 3 shows the statistical results of the description of the mean value for the evaluation. The investment evaluation was 8.94 for companies with a good reputation, 6,35 for companies with bad reputations, and 9,01 for companies without reputation. The mean score for investment evaluation was 8.14 for companies with integrated reporting and 7.42 for companies with separate reporting.

Panel C in Table 3 shows the statistical results of the description of the average score for the investment weighting was 9.53 for companies with a good reputation, 8.98 for companies with bad reputations and 8.82 for companies without reputation. The average values for investment weighting were 9.44 for companies with integrated reporting and 8.78 for companies with separate reporting.

Panel D in Table 3 shows the statistical results of the description of the mean value of investment appraisals by non-professional investors, which were 8.97 for companies with a good reputation, 7 for companies with bad reputations, and 8.38 for companies without reputation.. The mean value of investment considerations was 8.31 for companies with integrated reporting and 7.93 for companies with separate reporting.

3.2. Hypothesis testing

This study uses the ANOVA test (Table 4) with the assumption that the data variants used are homogeneous, and the participants used come from the same group. The results in panel A show that integrated reporting had an effect on the acquisition of investment information for non-professional investors, with a p value of $0.000 < 0.001$. Reputation also affected the acquisition of investment information for non-professional investors, with a p value of $0.002 < 0.01$. Panel A also shows the difference in the mean value of IR (24.47) which is greater than that of SR (22.04), because panel A explains the differences between investors who make decisions when IR or SR information is presented, so the cell values GR/SR and IR/BR are not explained further. Thus, non-professional investors could obtain company performance information containing financial, non-financial and strategic information if it was presented in an integrated manner rather than separately. Therefore, H_1 is supported.

As predicted, it was easier for non-professional investors to obtain information (i.e., read, store and remember) (Maines & McDaniel, 2000) regarding a company's performance if it was presented in an integrated manner. The correct acquisition of this information required various stages such as reading, storing, and remembering. Firstly, investors read the information about the company's financial and non-financial performance as long as the information was complete (Maines & McDaniel, 2000; Lachmann et al., 2015; Reimsbach & Hahn, 2015; Reimsbach et al., 2018). However, the amount of required reading increased if the information was presented in an separate manner. Information that was presented separately was more difficult to read because of the cognitive abilities of the reader (Dilla et al., 2013; Akisik & Gal, 2019; Dilla et al., 2019). Secondly, when investors found it easy to read the information, the rate of information absorption and storage increased. Sweller (1988) explained that a human's memory is limited, so information must be easy to read for better information retention. The final stage was the retrieval of information. Ingested information can be recalled more easily if it is integrated. These three stages must be in harmony and have an inseparable relationship. Therefore, at each stage, both reading, storing and recalling the information received must be well understood. The cognitive load created by this information must be low, because basically humans have a limited memory for obtaining/retaining information. The cognitive load theory describes that every human being has a limited memory (Sweller, 1988, 1989). This result is also in line with the cognitive load theory, which explains that non-professional investors will more easily absorb information if it is presented in an integrated manner (Sweller, 1988, 1989). This is relevant due to the limited and short nature of the human memory. If information is presented in an integrated manner, it is easier for non-professionals to recall the information they have acquired (Maines & McDaniel, 2000; Reimsbach et al., 2018; Busco et al., 2019; Esch et al., 2019a).

Panel B shows that companies' integrated reporting and reputations have an effect on non-professional investors' evaluations by $0.009 < 0.01$. We will then show that the environmental reputation will make it easier for non-professional investors to evaluate company performance information if it is presented in an integrated manner. So H_{2a} is supported.

Evaluation is part of the framework (Maines & McDaniel, 2000). As has been predicted, when information from external parties on environmental issues is linked to integrated reporting and non-professional investors, the evaluation will be easier. Integrated reporting contains financial, non-financial and corporate strategy information for value creation. This information is easier to interpret if it is not presented separately. Separate information may cause the loss of important information between one report and another, because of the limitations of the human memory, which could lead to poorer-quality decision making (Sweller, 1988, 1989). On the other hand, if the information regarding financial performance, non-financial performance and strategies for value creation is all in one report, the information is more complete so that the ability to remember all of the information is improved. In addition, in an integrated report, financial and non-financial information can be presented in an integrated manner so as to make it easier for the information to be understood. However, the evaluation of the two set of information presented by the company can be disturbed by information from outside the company about its environmental

reputation, so a good environmental reputation can improve the quality of the evaluation of a company's performance that has previously been presented in an integrated manner. Robertson and Samy (2019) explained that a company's good reputation enhances its value. As a result, this reputation can support the internal information about the company's performance if it is presented in an integrated manner by the company. Reputation is an important factor for increasing the credibility of a company, while the company presents its own information about its successes, especially in Indonesia. Besides being sensitive to outside information that can create a distraction, those Indonesian people who have a high degree of religiosity have a tendency to choose companies with good reputations. Environmental issues can be used to assess the sustainability of a company. The results of this study support the stakeholder theory, which explains that stakeholders, especially investors, will provide support for companies that are considered to care about environmental issues.

Panel C shows that integrated reporting and environmental reputation has no influence on investors' considerations in investing, by 0.334 > 0.1. So H_{2b} is no supported.

Weighting is also part of the framework (Maines & McDaniel, 2000). However, the results of this study indicate that the information that is presented in an integrated manner and has an environmental reputation is not used as a consideration for investors to invest. The results of this study indicate that information on financial and non-financial performancen that is presented in an integrated manner and has an environmental reputation is not considered by investors in the decision-making process. Investors in considering decisions are more likely to consider whether the company's performance is worth considering for investment, so investors are more concerned about each information.

Panel D in Table 3 We will analyze the discussion's results of the ANOVA test of the effect of integrated reporting and reputation on the investment considerations of non-professional investors. The results showed that the reputation and integrated reporting had an effect on the valuation of non-professional investor investment by 0.021 < 0.05. Therefore, environmental reputation will make it easier for non-professional investors to assess a company's performance information if it is presented in an integrated manner. So H2c is supported.

The last stage of the information process for decision making is judgment, which is the development of an investment appraisal by Lachmann et al. (2015), Reimsbach et al. (2018). When company performance is presented in an integrated manner, the assessment of non-professional investors is affected. This can be seen in the way information is processed by non-professional investors. If the information obtained by investors is easy to understand, it will be easier for investors to decide on their investments (Reimsbach & Hahn, 2015; Reimsbach et al., 2018; Esch et al., 2019b). However, the decision can change if there is distracting information that causes the behavior of the investors to change. Information about a company's environmental reputation is a very sensitive factor, especially for investors in Indonesia. This condition will create a cognitive distraction that has previously been built through an integrated presentation of the company's performance. This additional information gives investors a degree of confidence that the company can last for a long time and provide a return on their investments (Rikhardsson & Holm, 2008; Reimsbach et al., 2018; Steinmeier & Stich, 2019).

Table 4. ANOVA test results on integrated reporting and environmental reputation on comprehensive decision-making for non professional investors'

Panel A: Acquisition					
Source	Sum of square	df	Mean Square	F	p-value
Intercept	84.122.355	1	84.122.355	4.373.000	0.000
IR	199.297	1	199.297	10.359	0.002**
Error	2.981.938		19.238		
Panel B: Evaluation					
Source	Sum of square	df	Mean Square	F	p-value
Corrected model	234.842[a]	5	46.968	18.405	0.000
Intercept	9.146.594	1	9.146.594	3.584.000	0.000
IR	19.835	1	19.835	7.773	0.006**
Rep	178.666	2	89.333	35.005	0.000***
IR× Rep	24.678	2	12.339	4.835	0.009**
Error	385.349		2.552		
Panel C: Weighting					
Source	Sum of square	df	Mean Square	F	p-value
Corrected model	32.162[a]	5	6.432	2.279	0.050
Intercept	12.546.577	1	12.546.577	4.445.000	0.000
IR	16.771	1	16.771	5.942	0.016**
Rep	14.090	2	7.045	2.496	0.086*
IR× Rep	6.228	2	3.114	1.103	0.334
Error	426.195		2.822		
Panel D: Judgment					
Source	Sum of square	df	Mean Square	F	p-value
Corrected model	137.228[a]	5	27.446	12.541	0.000
Intercept	9.957.632	1	9.957.632	4.550.000	0.000
IR	5.427	1	5.427	2.480	0.117
Rep	104.033	2	52.016	23.768	0.000***
IR × Rep	17.394	2	8.697	3.974	0.021**
Error	330.466		2.189		

Notes: *** = Significant at 1%, ** = Significant at 5%, * = Significant at 5%;

IR = integrated reporting, Rep = environmental reputation.

Furthermore, to support the hypotheses H_1, H_{2a}, and H_{2c}, a post hoc test was performed by performing a different test on H_1, and Tukey's honestly significant difference (HSD) test on H_{2a}, and H_{2c}. In Table 5, the post hoc test consists of two panels, namely panels A and B.

Table 5. Post Hoc Test

Variable	Type	n	Acquisition	Evaluation	Judgment
Panel A T test	IR	89	24,49		
	SR	68	22.22		
	Significant		***		
Panel B					
Tukey test	Group	n			
	IR + GR	25		9.36	9.28
	SR + BR	22		6.50	7.27
	Significant			***	***

Notes: *** significant at the level of 1%,IR = integrated report, SR = separate report, GR = good reputation, BR = bad reputation.

In the test panel A only used the t test to see which of the two subjects received the information most easily. Panel B explains hypotheses H_{2a}, and H_{2c} to test the subjek in evaluating, giving weight to and assessing the company based on the information obtained. The post hoc test was carried out on panel B using Tukey's HSD test on the two groups, then the test results were compared to the two groups that needed to be compared, namely groups 1 and 4. Table 5 shows the support for H1, as it explains that it is easier for investors to understand integrated information, with a value of 22.49 compared to 22.22 for separate information. Then, for H_{2a} it shows the result that investors find it easier to evaluate a company when information about it is presented in an integrated manner and the company has a good reputation (9.36) than investors who are presented with separate information and the company has a bad reputation (4.500). Furthermore, H2c, shows that investors will have a better judgment of companies that present information in an integrated manner and have a good reputation (9.28) than investors who are presented with information separately by a company with a bad reputation (7.27).

Conclusions

This study aimed to examine the effect of companies' integrated reporting and environmental reputations on the comprehensive decision-making of non-professional investors. The results of this study show that company performance consists of financial and non-financial (ie social, environmental, and governance) information, as well as the strategies that are owned, and the resulting value created, all of which are presented in an integrated manner as this is easier to understand and use as a basis for comprehensive decision-making, compared to when the information is presented separately (De Villiers et al., 2017; Reimsbach et al., 2018; Akisik & Gal, 2019; Esch et al., 2019b). This study used a 2x3 factorial experimental design, along with a between-subject design, and we tested 157 non-professional investors using an experimental design. These results support the cognitive load theory, which explains that investors have limited memory skills, so integrated reports will make it easier for them to make decisions. As a result of the limitations that the human memory experiences when managing information, information that is presentated in an integrated manner can make it easier for investors to decide to invest in the company or not. But on the other hand, information from outside the company can contribute to information distraction when evaluating information about the company.

Limitation of this study is that it only focuses on treating two variables, namely integrated reporting and the enviromental reputation, all the other factors beyond these variables are fully controlled by the researcher. Another limitation in this experimental design is that it does not develop in detail the selection of different strategies between companies, to show the characteristics and values possessed by each company, so further research can focus in-depth on the strategic content of each company, which forms part of an integrated report.

Finally, one additional avenue for future research is to examine more thoroughly the effects of format dimensions integrated reporting and environmental reputation on individuals' acquisition, evaluation, weighting, and judment. This research focuses more on format manipulation rather than focusing on specific format dimensions proposed by policy makers.

References

Adams, S., & Simnett, R. (2011). Integrated reporting: An opportunity for Australia's not-for-profit sector. *Australian Accounting Review*, *21*(3), 292–301. https://doi.org/10.1111/j.1835-2561.2011.00143.x

Aerts, W., & Cormier, D. (2009). Media legitimacy and corporate environmental communication. *Accounting, Organizations and Society*, *34*(1), 1–27. https://doi.org/10.1016/j.aos.2008.02.005

Akisik, O., & Gal, G. (2019). Integrated reports, external assurance and financial performance: An empirical analysis on North American firms. *Sustainability Accounting, Management and Policy Journal*, *11*(2), 317–350. https://doi.org/10.1108/SAMPJ-02-2019-0072

Alewine, H. C., & Miller, T. C. (2016). How balanced scorecard format and reputation related to environmental objectives influence performance evaluations. *Advances in Management Accounting*, *27*, 123–165. https://doi.org/10.1108/S1474-787120160000027004

Alsahali, K. F., & Malagueño, R. (2021). An empirical study of sustainability reporting assurance: Current trends and new insights. *Journal of Accounting and Organizational Change, 18*(5). https://doi.org/10.2139/ssrn.3917749

Alvarado-Herrera, A., Rodríguez-Soberanis, L. J., & Herrera-Medina, H. R. (2019). Corporate social responsibility, reputation and visitors' commitment as resources for public policies' design for protected areas for tourism sustainable exploitation. *Social Responsibility Journal*, *16*(4), 537–553. https://doi.org/10.1108/SRJ-07-2018-0172

Arnold, M., Bassen, A., & Frank, R. (2018). Timing effects of corporate social responsibility disclosure: An experimental study with investment professionals. *Journal of Sustainable Finance and Investment*, *8*(1), 45–71. https://doi.org/10.1080/20430795.2017.1368229

Arnold, M. C., Hörner, C., Martin, P. R., & Moser, D. V. (2017). Investment professionals' use of corporate social responsibility disclosures. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3020887

Arnold, M. C., Bassen, A., & Frank, R. (2012). Integrating sustainability reports into financial statements: An experimental study. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2030891

Bakumenko, M., & Sigal, A. (2018). Reputation aspects in investment decision making: Contribution to corporate security. *International Journal of Risk Assessment and Management*, *21*(1–2), 111–134. https://doi.org/10.1504/IJRAM.2018.090261

Belkaoui, A. (1976). The impact of the disclosure of the environmental effects of organizational behavior on the market. *Financial Management*, *5*(4), 26. https://doi.org/10.2307/3665454

Bellucci, M., Acuti, D., Simoni, L., & Manetti, G. (2021). Hypocrisy and legitimacy in the aftermath of a scandal: An experimental study of stakeholder perceptions of nonfinancial disclosure. *Accounting, Auditing and Accountability Journal*, *34*(9), 151–163. https://doi.org/10.1108/AAAJ-01-2021-5113

Bernardi, C., & Stark, A. W. (2018). Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts. *British Accounting Review*, *50*(1), 16–31. https://doi.org/10.1016/j.bar.2016.10.001

Birkey, R. N., Michelon, G., Patten, D. M., & Sankara, J. (2016). Does assurance on CSR reporting enhance environmental reputation? An examination in the U.S. context. *Accounting Forum*, *40*(3), 143–152. https://doi.org/10.1016/j.accfor.2016.07.001

Bucaro, A. C., Jackson, K. E., & Lill, J. B. (2020). The influence of corporate social responsibility measures on investors' judgments when integrated in a financial report versus presented in a separate report. *Contemporary Accounting Research*, *37*(2), 665–695. https://doi.org/10.1111/1911-3846.12542

Busco, C., Malafronte, I., Pereira, J., & Starita, M. G. (2019). The determinants of companies' levels of integration: Does one size fit all? *British Accounting Review*, *51*(3), 277–298. https://doi.org/10.1016/j.bar.2019.01.002

Calic, G., Shevchenko, A., Ghasemaghaei, M., Bontis, N., & Ozmen Tokcan, Z. (2020). From sustainability constraints to innovation: Enhancing innovation by simultaneously attending to sustainability and commercial imperatives. *Sustainability Accounting, Management and Policy Journal*, *11*(4), 695–715. https://doi.org/10.1108/SAMPJ-02-2019-0084

Camilleri, M. A. (2018). Theoretical insights on integrated reporting: The inclusion of non-financial capitals in corporate disclosures. *Corporate Communications: An International Journal*, *23*(4). https://doi.org/10.1108/CCIJ-01-2018-0016

Cantrell, J., Vallone, D. M., Thrasher, J. F., Nagler, R. H., Feirman, S. P., Muenz, L. R., He, D. Y., & Viswanath, K. (2013). Impact of tobacco-related health warning labels across socioeconomic, race and ethnic groups: Results from a randomized web-based experiment. *PLoS ONE*, *8*(1). https://doi.org/10.1371/journal.pone.0052206

Cardinaels, E., & van Veen-Dirks, P. M. G. (2010). Financial versus non-financial information: The impact of information organization and presentation in a Balanced Scorecard. *Accounting, Organizations and Society*, *35*(6), 565–578. https://doi.org/10.1016/j.aos.2010.05.003

Carp, M., Pavaloaia, L., Afrasinei, M. B., & Georgescu, I. E. (2019). Is sustainability reporting a business strategy for firm's growth? Empirical study on the Romanian capital market. *Sustainability*, *11*(3). https://doi.org/10.3390/su11030658

Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business and Society*, *38*(3), 268–295. https://doi.org/10.1177/000765039903800303

Chan, C. C., & Milne, M. J. (1999). Investor reactions to corporate environmental saints and sinners: an experimental analysis. *Accounting and Business Research, 29*(4), 265–279. https://doi.org/10.1080/00014788.1999.9729588

Cheng, M. C., Wendy, J. G., & Ko, J. C. (2015). The impact of strategic relevance and assurance of sustainability indicators on investors' decisions. *Auditing: A Journal of Practice and Theory*, *34*(1), 131–162. https://doi.org/10.2308/ajpt-50738

Cooke, P. (2015). Green governance and green clusters: Regional and national policies for the climate change challenge of Central and Eastern Europe. *Journal of Open Innovation: Technology, Market, and Complexity*, *1*(1), 1–17. https://doi.org/10.1186/s40852-015-0002-z

De Villiers, C., Rinaldi, L., & Unerman, J. (2014). Integrated reporting: Insights, gaps and an agenda for future research. *Accounting, Auditing and Accountability Journal*, *27*(7), 1042–1067. https://doi.org/10.1108/AAAJ-06-2014-1736

De Villiers, C., & Sharma, U. (2016). A critical reflection on the future of financial, intellectual capital, sustainability and integrated reporting. *Critical Perspectives on Accounting, 70*. https://doi.org/10.1016/j.cpa.2017.05.003

De Villiers, C., Venter, E. R., & Hsiao, P. C. K. (2017). Integrated reporting: Background, measurement issues, approaches and an agenda for future research. *Accounting and Finance*, *57*(4), 937–959. https://doi.org/10.1111/acfi.12246

Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures – a theoretical foundation. *Accounting, Auditing and Accountability Journal*, *15*(3), 282–311. https://doi.org/10.1108/09513570210435852

Dilla, W., Janvrin, D., Perkins, J., & Raschke, R. (2019). Do environmental responsibility views influence investors' use of environmental performance and assurance information? *Sustainability Accounting, Management and Policy Journal*, *10*(3), 476–497. https://doi.org/10.1108/SAMPJ-12-2018-0357

Dilla, W. N., Janvrin, D. J., & Jeffrey, C. (2013). The impact of graphical displays of pro forma earnings information on professional and nonprofessional investors' earnings judgments. *Behavioral Research in Accounting*, *25*(1), 37–60. https://doi.org/10.2308/bria-50289

Elliott, W. B., Hodge, F. D., Kennedy, J. J., & Pronk, M. (2007). Are MBA students a good proxy for nonprofessional investors? *The Accounting Review, 82*(1), 139–168. https://doi.org/10.2308/accr.2007.82.1.139

Elliott, W. B., Grant, S. M., & Rennekamp, K. M. (2016). How disclosure features of corporate social responsibility reports interact with investor numeracy to influence investor judgments. *Contemporary Accounting Research*, *38*(1), 42–49.

Esch, M., Schulze, M., & Wald, A. (2019a). The dynamics of financial information and non- financial environmental, social and governance information in the strategic decision-making process. *Journal of Strategy and Management*, *12*(3), 314–329. https://doi.org/10.1108/JSMA-05-2018-0043

Esch, M., Schnellbächer, B., & Wald, A. (2019b). Does integrated reporting information influence internal decision making? An experimental study of investment behavior. *Business Strategy and the Environment*, *28*(4), 1–12. https://doi.org/10.1002/bse.2267

Espahbodi, L., Espahbodi, R., Juma, N., & Westbrook, A. (2019). Sustainability priorities, corporate strategy, and investor behavior. *Review of Financial Economics*, *37*(1), 149–167. https://doi.org/10.1002/rfe.1052

Farneti, F., Casonato, F., Montecalvo, M., & de Villiers, C. (2019). The influence of integrated reporting and stakeholder information needs on the disclosure of social information in a state-owned enterprise. *Meditari Accountancy Research*, *27*(4), 556–579. https://doi.org/10.1108/MEDAR-01-2019-0436

Fasaei, H., Tempelaar, M. P., & Jansen, J. J. P. (2018). Firm reputation and investment decisions: The contingency role of securities analysts' recommendations. *Long Range Planning*, *51*(5), 680–692. https://doi.org/10.1016/j.lrp.2017.07.010

Ghosh, D., & Wu, A. (2012). The effect of positive and negative financial and nonfinancial performance measures on analysts' recommendations. *Behavioral Research in Accounting*, *24*(2), 47–64. https://doi.org/10.2308/bria-10283

Green, W. J., & Cheng, M. M. (2019). Materiality judgments in an integrated reporting setting: The effect of strategic relevance and strategy map. *Accounting, Organizations and Society, 73,* 1–14. https://doi.org/10.1016/j.aos.2018.07.001

Haji, A. A., Coram, P., & Troshani, I. (2021). Effects of integrating CSR information in financial reports on investors' firm value estimates. *Accounting and Finance*, *61*(2), 3605–3647. https://doi.org/10.1111/acfi.12713

Honing, H. (2006). Evidence for tempo-specific timing in music using a Web-based experimental setup. *Journal of Experimental Psychology: Human Perception and Performance*, *32*(3), 780–786. https://doi.org/10.1037/0096-1523.32.3.780

Keefer, M., & Ashley, K. D. (2001). Case-based approaches to professional ethics: A systematic comparison of students' and ethicists' moral reasoning. *Journal of Moral Education*, *30*(4), 377–398. https://doi.org/10.1080/03057240120094869

Lachmann, M., Stefani, U., & Wöhrmann, A. (2015). Fair value accounting for liabilities: Presentation format of credit risk changes and individual information processing. *Accounting, Organizations and Society*, *41*, 21–38. https://doi.org/10.1016/j.aos.2014.08.001

Liao, L., Luo, L., & Tang, Q. (2015). Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *British Accounting Review*, *47*(4), 409–424. https://doi.org/10.1016/j.bar.2014.01.002

Liyanarachchi, G. A. (2007). Feasibility of using student subjects in accounting experiments: A review. *Pacific Accounting Review, 19*(1), 47–67. https://doi.org/10.1108/01140580710754647

Liyanarachchi, G. A., & Milne, M. J. (2005). Comparing the investment decisions of accounting practitioners and students: An empirical study on the adequacy of student surrogates. *Accounting Forum*, *29*(2), 121–135. https://doi.org/10.1016/j.accfor.2004.05.001

Maines, L. A., & Mcdaniel, L. S. (2000). Effects of comprehensive-income characteristics on nonprofessional investors' judgments: The role of financial-statement presentation format. *Accounting Review*, *75*(2), 179–207. https://doi.org/10.2308/accr.2000.75.2.179

Mcnally, M. A., Cerbone, D., & Maroun, W. (2017). Exploring the challenges of preparing an integrated report. *Meditari Accountancy Research*, *25*(4), 481–504. https://doi.org/10.1108/MEDAR-10-2016-0085

Milne, M. J., & Patten, D. M. (2002). Securing organizational legitimacy: An experimental decision case examining the impact of environmental disclosures. *Accounting, Auditing & Accountability Journal, 15*(3), 372–405. https://doi.org/10.1108/09513570210435889

Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, *22*(4), 853–886. https://doi.org/10.2307/259247

Naynar, N. R., Ram, A. J., & Maroun, W. (2018). Expectation gap between preparers and stakeholders in integrated reporting. *Meditari Accountancy Research, 26*(2). https://doi.org/10.1108/MEDAR-12-2017-0249

Obeng, V. A., Ahmed, K., & Miglani, S. (2020). Integrated reporting and earnings quality: The moderating effect of agency costs. *Pacific Basin Finance Journal*, *60*, 101285. https://doi.org/10.1016/j.pacfin.2020.101285

Park, S., Yang, D., Cha, H., & Pyeon, S. (2020). The Halo effect and social evaluation: How organizational status shapes audience perceptions on corporate environmental reputation. *Organization and Environment*, *33*(3), 464–482. https://doi.org/10.1177/1086026619858878

Permatasari, I., & Narsa, I. M. (2021). Sustainability reporting or integrated reporting: Which one is valuable for investors? *Journal of Accounting and Organizational Change, 18*(5), 666–684. https://doi.org/10.1108/JAOC-12-2020-0204

Perrault, E., & Clark, C. (2016). Environmental shareholder activism: Considering Status and reputation in firm responsiveness. *Organization and Environment*, *29*(2), 194–211. https://doi.org/10.1177/1086026615571939

Reimsbach, D., & Hahn, R. (2015). The effects of negative incidents in sustainability reporting on investors' judgments-an experimental study of third-party versus self-disclosure in the realm of sustainable development. *Business Strategy and the Environment*, *24*(4), 217–235. https://doi.org/10.1002/bse.1816

Reimsbach, D., Hahn, R., & Gürtürk, A. (2018). Integrated reporting and assurance of sustainability information: An experimental study on professional investors' information processing. *European Accounting Review*, *27*(3), 559–581. https://doi.org/10.1080/09638180.2016.1273787

Rikhardsson, P., & Holm, C. (2008). The effect of environmental information on investment allocation decisions – An experimental study. *Business Strategy and the Environment*, *17*(6), 382–397. https://doi.org/10.1002/bse.536

Rinaldi, L., Unerman, J., & Villiers, C. De. (2018). Evaluating the integrated reporting journey: Insights, gaps and agendas for future research. *Accounting, Auditing and Accountability Journal*, *31*(5). https://doi.org/10.1108/AAAJ-04-2018-3446

Robertson, F. A., & Samy, M. (2019). Rationales for integrated reporting adoption and factors impacting on the extent of adoption: A UK perspective. *Sustainability Accounting, Management and Policy Journal*, *11*(2), 351–382. https://doi.org/10.1108/SAMPJ-02-2019-0042

Seaton, A., & Pennington, R. R. (2012). Computers in human behavior internet financial reporting: The effects of information presentation format and content differences on investor decision making. *Computers in Human Behavior*, *28*(4), 1178–1185. https://doi.org/10.1016/j.chb.2012.01.028

Shen, H., Wu, H., & Chand, P. (2017). The impact of corporate social responsibility assurance on investor decisions: Chinese evidence. *International Journal of Auditing*, *21*(3), 271–287. https://doi.org/10.1111/ijau.12094

Steinmeier, M., & Stich, M. (2019). Does sustainability assurance improve managerial investment decisions? *European Accounting Review*, *28*(1), 177–209. https://doi.org/10.1080/09638180.2017.1412337

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4

Sweller, J. (1989). Cognitive technology: Some procedures for facilitating learning and problem solving in mathematics and science. *Journal of Educational Psychology*, *81*(4), 457–466. https://doi.org/10.1037/0022-0663.81.4.457

Vitolla, F., Raimo, N., Rubino, M., & Garzoni, A. (2019a). How pressure from stakeholders affects integrated reporting quality. *Corporate Social Responsibility and Environmental Management*, *28*(1). https://doi.org/10.1002/csr.1850

Vitolla, F., Raimo, N., & Rubino, M. (2019b). Board characteristics and integrated reporting quality: An agency theory perspective. *Corporate Social Responsibility and Environmental Management*, *27*(2). https://doi.org/10.1002/csr.1879

Wachira, M. M., Berndt, T., & Romero, C. M. (2019). The adoption of international sustainability and integrated reporting guidelines within a mandatory reporting framework: Lessons from South Africa. *Social Responsibility Journal, 16*(5). https://doi.org/10.1108/SRJ-12-2018-0322

Wang, R., Zhou, S., & Wang, T. (2019). Corporate governance, integrated reporting and the use of credibility-enhancing mechanisms on integrated reports. *European Accounting Review*, *29*(4), 631–663. https://doi.org/10.1080/09638180.2019.1668281

Zheng, X., Xu, Y., & Gu, L. (2013). Impact of Venture capital firms' reputation on investment decision. *Journal of Applied Sciences*, *13*(14), 2694–2699. https://doi.org/10.3923/jas.2013.2694.2699

Zhou, S., Simnett, R., & Green, W. (2017). Does integrated reporting matter to the capital market? *Abacus, 53*(1), 94–132. https://doi.org/10.1111/abac.12104