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Users' perception of decision-usefulness of corporate environmental reports

Abstract

This article aims to investigate the users' perception of decision-usefulness of environmental reports produced by listed South African companies. The results of this questionnaire survey indicate that the users do read environmental reports, and that they employ the reports for making various decisions for various purposes such as education or research, own knowledge and to hold companies accountable. In addition, environmental reports are also used, to a lesser extent, to decide whether or not to; buy a company's products, invest or disinvest from a company, partner with a company, support or launch action against a company.

The results further indicate that users generally perceive environmental reports to be useful for the purpose which they were used, as most users perceive them to be understandable and relevant, and to a lesser extent reliable, timely, verifiable and comparable. The results also reveal that most users are not satisfied with the decision-usefulness of the environmental reports. They thus provide various suggestions for improvement of the reports, most of which focus on the reliability and relevance of the reports. Taken together, the results indicate that users perceive the environmental reports produced by listed South Africa companies to be decision-useful, however there is a need for improvement of the reports particularly regarding their reliability.

Keywords: decision-usefulness, users, environmental reports, relevance, reliability.

JEL Classification: Q50.

Introduction

The recent string of environmental transgressions by high profile companies' has heightened the public sensitivity on environmental issues which has led many users to question the usefulness of accounting reports as a basis for making decisions (Integrated Reporting Committee (IRC), 2011, p. 1). Indeed many users of accounting reports have criticized the accounting reports for failing to provide a comprehensive insight on companies' performance in the wake of increasing environmental challenges (IRC, 2011, p. 1). In response to the criticisms, companies have increased the number and volume of their environmental reports (Jira & Toffel, 2013, p. 1; Marquis & Toffel, 2014, p. 04).

However, the increase in the quantity of environmental reports has occurred without a commensurate improvement in the decision usefulness of the reports (Kim & Lyon, 2012, p. 311; Marquis & Toffel, 2014, p. 01). Specifically, most companies appear to have increased the quantity of their environmental reports without consulting with users to determine the information that is relevant to them (Bromley & Powell, 2012, p. 485).

Likewise, the reliability of environmental reports has also been questioned given that the environmental reports produced tend to be biased, self-laudatory, with minimal negative information disclosure even

when such information is known to exist (Delmas & Burbano, 2011, p. 64; KPMG, 2013, p. 76; McDonnell & King, 2013, p. 387). The perceived lack of reliability of environmental reports has also been partly attributed to the low levels of reasonable assurance of the reports (KPMG, 2013, p. 33). Despite the emergence of the GRI guidelines as the *de facto* guideline in environmental reporting, the comparability of environmental reports has remained problematic as the reports have varied widely in scope, depth and content (KPMG, 2010, p. 78; Kolk, 2005, p. 38).

To cater for a growing number of stakeholder groups, companies have typically provided over-aggregated environmental information without supporting detail, in a manner that has impaired its understandability (Deloitte, 2011, p. 05). Yet other companies have disaggregated their environmental reports per country, product or line of business, in a manner that has impaired the understandability of the overall performance of a company (Mammatt, 2009, p. 04). Besides, many companies have not taken advantage of their on-line capabilities to enrich the content of their environmental reports, instead opted for the Portable Document Format (PDF), a replica of printed reports (Bolivar, 2009, p. 194; Lodhia, 2006, p. 83).

Likewise, most companies have not leveraged their on-line capabilities to produce more timely reports using HyperText Markup Language (HTML) format files that are easier and faster to update (Radley Yeldar & GRI, 2011, p. 2). Where the HTML files have been used, they have either duplicated prior years' information and have not always included

dates that enable users to assess the currency (timeliness) of the reports. With most companies aligning their environmental reporting cycle to their annual reports, they have failed to take advantage of their on-line capabilities to report more frequently (KPMG, 2011, p. 22).

Environmental reporting is aimed at providing information that is useful to a wide range of users for making decisions (GRI 2013, p. 17). However, the concerns raised above cast serious doubts on the ability of the current environmental reporting practices to provide decision-useful information. Consequently, debate is rife as to whether the environmental reports produced by companies are perceived by users to be decision-useful and whether the users actually employ the reports for making decisions (Hwang, Khoo & Wong, 2013, p. 178; Said, Ahmad & Senik, 2013, p. 440).

In the South African context, the question of whether environmental reports produced by companies are perceived to be decision-useful was last examined more than five years ago (De Villiers & Van Staden, 2010b). However, De Villiers & Van Staden's (2010b) study only focused on individual shareholders who are financial stakeholders, thus ignored the non-financial stakeholders. This research aims to fill this gap in the literature by eliciting the perceptions of both financial and non-financial stakeholders with regard to the decision-usefulness of environmental reports produced by South African companies.

The rest of the article proceeds with section 1 which reviews the relevant prior literature. Section 2 presents the methodology, followed by results and discussion in section 3. The final section provides the summary and conclusion of the article.

1. Literature review

Only a few prior studies elicit users' perception of the decision-usefulness of the environmental reports (De Villiers & Van Staden, 2010a; De Villiers & Van Staden, 2010b). The limited questionnaire surveys that elicit users' perceptions on the decision-usefulness of environmental reports suggest that financial stakeholders do not perceive the reports to be decision-useful (Campbell & Slack, 2008, p. 05; European Commission, 2011; Miller, 2012). Accordingly they neither read nor employ the reports when making decisions and are generally dissatisfied with these reports given their narrative nature. By contrast, some experimental studies' findings suggest that financial stakeholders actually do use environmental information to inform their investment decisions when such information is provided (Rikhardsson & Holm, 2005). Indeed some re-

searchers have contended that stock market reaction to disclosure of environmental information provides ample evidence that financial stakeholders do use environmental information when making investment decisions (Came, 2011, p. 01; Flammer, 2012, p. 01). However, unlike questionnaire surveys, experiments only require participants to make investment decisions, therefore they do not explore other reasons why users may want the information (De Villiers & Van Staden, 2010b).

In a rare South African questionnaire survey, De Villiers & Van Staden (2010b) found that individual shareholders require environmental information mostly for accountability purposes and to lesser extent for making investment decisions. However, De Villiers and Van Staden's (2010b) study did not investigate the extent to which the shareholders read the environmental disclosures, whether or not they were satisfied with the decision-usefulness of the environmental reports, nor did it ask the shareholders to make suggestions for improvement of the reports.

Studies that have elicited the perceptions of non-financial stakeholders (such as Non-Governmental Organizations (NGOs)) on the decision-usefulness of environmental reports have revealed that these stakeholders do read and employ environmental reports to inform their decisions but are generally dissatisfied with the decision-usefulness of these reports (Danastas & Gadenne, 2004; European Commission, 2011). However, NGOs are known not to reveal their true perceptions on environmental reports given that they have vested interest in answering questions in a particular way (Deegan & Rankin, 1997, p. 571).

All the same, researchers in the prior studies seem to concur that users are generally dissatisfied with the decision-usefulness of the environmental reports (Campbell & Slack, 2008; Danastas & Gadenne, 2004; European Commission, 2011; O'Dwyer et al., 2005). In fact, some researchers have lamented that most companies seem to provide environmental information without enquiring what the users require, a situation that has rendered the reports irrelevant (De Villiers & Van Staden, 2008, p. 1). Other researchers have maintained that environmental information disclosed is perceived to be inadequate even when relevant (Danastas & Gadenne, 2004, p. 85). Yet others have found that environmental information is perceived to be simply irrelevant and unreliable (O'Dwyer et al., 2005, p. 759).

In the South African context, a study conducted by Mitchell and Hill (2010) found that non-financial stakeholders were generally dissatisfied with the Corporate Social Responsibility (CSR) disclosures as issues perceived to be important were poorly or

inadequately reported on and even omitted from the reports all together. However, Mitchell and Hill's (2010) study, did not determine the extent to which non-financial stakeholders had read the CSR reports and whether they employed the reports to inform their decisions.

Given that all South African studies that investigated the users' perception of the decision-usefulness of environmental reports were conducted more than five years ago (De Villiers & Van Staden, 2010b; De Villiers & Vorster, 1995; De Villiers, 1998; De Vries & De Villiers, 1997; Mitchell & Hill, 2010; Mitchell & Quinn, 2005), they are outdated in the contemporary dynamic reporting arena. Thus little is known about users' perception of decision-usefulness of environmental reports produced by South African companies at present.

This study being the first South African study to examine both financial and non-financial users' perceptions of decision-usefulness of environmental reports, addresses, among other objectives, the following gaps in the above literature:

- ♦ the extent to which users read the environmental reports;
- ♦ whether or not users employ environmental reports when making decisions;
- ♦ whether or not users are satisfied with the decision-usefulness of environmental reports;
- ♦ users' suggestions for improvement of the decision-usefulness of environmental reports.

2. Methodology

2.1. Questionnaire design. The users' perceptions of the decision-usefulness of environmental reports were elicited using a questionnaire survey. A questionnaire was designed that comprised 10 primarily closed-ended questions that required responses in form of a five-point Likert scale, yes/no answers and multiple-choice. This was meant to maximize the response rate by minimizing the time required to complete the questionnaire which ideally should have been 10 minutes. Only one question was open ended in order to capture the full richness and complexity of the perspectives held by the respondents (O'Dwyer et al., 2005, p. 764).

The questionnaire was divided into a number of sections. The first section requested data concerning the demographic characteristics of the respondents such as gender, age, highest educational qualification, and occupation to ascertain whether the respondents were knowledgeable and appropriate as respondents for this study. The next section dealt with extent to which environmental reports are read and how they are used. The third section addressed the level of satisfaction of users with the decision-

usefulness of their reports and elicited suggestions for improving the same.

2.2. Population and sample selection. The population comprised users of environmental reports produced by companies listed on the Johannesburg Securities Exchange (JSE). The population of users as defined in the accounting conceptual frameworks could foreseeably consist of the entire South African population (GRI, 2008; IASB, 2008; FASB, 2010; Mitchell & Quinn, 2005, p. 22). This study focused on the user groups actively involved in 1) ethical investment (ethical investment funds and their representatives), 2) environmental protection (environmental NGOs and their representatives), and 3) environmental reporting research.

Given that there appears to be no comprehensive public listing of all ethical investment funds, environmental NGOs and environmental reporting researchers in South Africa, a thorough Internet search was conducted, which yielded 100 users that comprised 30 ethical investment funds, 30 environmental NGOs and 40 accounting researchers. Consistent with the prior studies, a census of the identified users was conducted given that the population was relatively small (Tilt, 1994; Danastas & Gadenne, 2004, p. 08). The selection of the three user groups increased the likelihood that respondents of different persuasions answered the questionnaire, which further mitigated the effect of a non-response bias (De Villiers & Van Staden, 2010a, p. 240).

2.3. Questionnaire distribution. Each identified user was contacted by telephone in order to obtain their cooperation prior to sending an e-mail link meant to direct the respondent to the web-based questionnaire. The cover letter of the questionnaire explained the purpose of the study and invited the respondents to participate in the survey by clicking on the Uniform Resource Locator (URL) link provided. Upon clicking on the URL link, the users were redirected to a web-based questionnaire which they were to complete anonymously. This implies that only respondents who had an e-mail address were included in this survey. The e-mail was sent out on the 1st of July 2013 with a deadline of the 31st of August 2013 for the completion of the questionnaire.

3. Results and discussions

3.1. Response rate and test for non-response bias. From the 100 questionnaires that were distributed, 54 usable questionnaires were returned after follow-up, resulting in a response rate of 54%. This rate was higher than that achieved by Tilt (1994) (46.8%), and O'Dwyer et al. (2005) (52.8%), and conforms to Fowler's (1988) recommendation that a response rate should be at least 20% to provide credible statistics about a population. Of the

respondents, 55.56% were male whereas 44.44% were female. All the respondents were above 26 years old and had a minimum of a post matric certificate/diploma. With regard to occupation, most of the respondents were accounting researchers (39.62%), followed by other professionals (32.08%), then representatives of environmental groups (22.64%), followed by representatives of environmental groups (22.64%). Hence the respondents represented a broad cross-section of users, which did not only increase the likelihood that respondents of different persuasions answered the questionnaire (De Villiers & Van Staden, 2010a, p. 240), but also is consistent with the broad definition of users in the accounting conceptual frameworks (IASB, 2010, p. 45).

To further test for non-response bias, the responses of early responders (the first 27) were compared to those of late responders (last 27), an approach used widely in prior literature (See Deegan & Rankin, 1997, p. 571; De Villiers & Van Staden, 2010a, p. 241). Early responders are taken to represent individuals who are favorably disposed towards the subject of the questionnaire, whereas the late responders are taken to represent those who are less in favor, as well as those who chose not to complete the questionnaires (De Villiers & Van Staden, 2010a, p. 241). For each of the four likert scale questions (out of a total of 10 questions in the questionnaire), a series of T-tests was conducted. There were no significant differences in the questionnaire answers between those who responded early when compared to those who responded late. Accordingly there was no evidence of non-response bias in this test. Given the relatively high response rate, different user groups' opinions and similarity of early and late responders' responses, it is unlikely that non-response bias influenced the results significantly.

3.2. Extent to which environmental reports are read and how they are used. *3.2.1. The extent to which users read the environmental reports.* Users were asked by way of a yes/no question whether they had read an environmental report in the past 12 months. The responses to this question are reported in Table 1. As shown in the Table, 83.33% of the users indicated that they had read an environmental report in the past 12 months, whereas only 16.67% indicated that they had not. Such an overwhelming majority of users would not have read environmental reports if the benefit derived from the reports did not exceed the cost of reading them. In other words they must have perceived the reports to be useful to them. A Binomial Test (2-tailed) was conducted to determine whether there was a significant difference between the total number of users who read the environmental report, and those who did not. A significant difference was found ($p < 0.05$).

Table 1. Extent to which users read environmental reports in the past 12 months

Total number of users	Number responding to the question	Percentage responding "Yes"	Percentage responding "No"	Binomial Exact sig. (2 - tailed)
54	42	83.33%	16.67%	0.000*

Notes: *statistically significant difference ($p < 0.05$) at 95% confidence level.

Given the notion that users are only likely to read environmental reports only if they perceive the reports to be decision-useful, it can be concluded that an overwhelming majority of users must have perceived environmental reports to be decision-useful for them to have read the reports.

3.2.2. Whether or not users employ environmental reports when making decisions. Users were asked to indicate the purpose for which they used the environmental reports read. To this end, users were required to indicate their degree of agreement or disagreement with seven statements. A five point Likert scale was used with weightings of one for strongly disagree, two for disagree, three for neutral, four for agree and five for strongly agree. Therefore the closer the mean was to five, the more the users agreed with a statement.

The percentages of those who indicated that they either strongly agreed or agreed with the statements were added up together, and reported as "percentage that agree with the statement" in the third column of Table 2. In essence therefore, those who indicated neutral (neither agree nor disagree) are conservatively reported as disagreeing with the statement as the word "neutral" suggests a lack of a clear stand. This approach is justified to ensure that only those who agree with the statements are reported as such, and it has also been used in prior studies (See DeVilliers & Van Staden, 2010, p. 15).

As illustrated in Table 2, 88.89% of the respondents used environmental reports for education or research purposes, 80.56% of users used the reports for their own knowledge. Although the above two most popular uses of environmental reports do not indicate any action taken by the users after reading the reports, it still demonstrates the decision-usefulness of environmental reports in informing opinion, which eventually could result into action. Of the respondents, 57.14% used environmental reports to hold companies accountable. The foregoing is consistent with the accounting conceptual framework's notion that the accountability objective of accounting information has been encapsulated by the decision-usefulness objective, as information that is decision-useful is also able to discharge accountability (FASB, 2010, p. 12; IASB, 2010, p. 50).

Table 2. Purposes for which environmental reports are used

Number	Statement	Percentage that agree with the statement	Users	Standard deviation
			<i>n</i> = 48	
1	For education or research	88.89%	4.08	1.170
2	For own knowledge	80.56%	4.08	0.770
3	To hold a company accountable	57.14%	3.54	1.268
4	To decide whether or not to buy a company's products	54.29%	3.43	0.979
5	To decide whether to invest or disinvest from a company	54.29%	3.43	1.037
6	To decide whether to partner with a company	45.72%	3.29	1.178
7	To decide whether to support or launch action against a company	31.43%	3.03	1.124

Notes: Scale: 1 = strongly disagree, 5 = strongly agree.

The decision-usefulness of accounting information is more pronounced when action is taken based on the information, than when no action results (Dierkes & Antal, 1985, p. 30). As far as the use of environmental reports to take action is concerned, 54.29% of users used the reports to decide whether to buy a company's products or not. A similar percentage of users used the reports to decide whether to invest or disinvest from a company, while 45.72% of the users used the reports to decide whether or not to partner with a company. Only 31.43% of users used the environmental reports to decide whether or not to support or launch action against a company. The foregoing results are consistent with the accounting conceptual frameworks' pronouncement that in the context of decision-making, general purpose accounting information should be useful for different purposes to different user groups (FASB, 2010, p. 3; IASB, 2010, p. 3).

3.3. Whether or not users are satisfied with the decision-usefulness of environmental reports.

Table 3. Users' perceptions on the usefulness of the environmental reports

Total number of users	Number responding to the question	Percentage that perceive environmental reports to be useful	Mean	Standard deviation
54	36	52.57%	3.44	0.809

Notes: Scale: 1 = not useful at all, 5 = very useful.

As shown in Table 3, 52.57% of the users perceived environmental reports to be useful for the purpose for which they were used, with a mean of 3.44, which indicates that on average, users perceived the usefulness of environmental reports to be between somewhat useful and useful. The standard deviation of less than one indicates an agreement in users' perceptions. The above result further confirms that users perceived the environmental reports read to be decision-useful, albeit-marginally.

3.3.2. Users' perception of the specific qualitative characteristics of the environmental reports. To further probe the specific qualitative characteristics of decision-useful information that users perceived the environmental reports to have, they were asked to indicate the extent to which they agreed with six

3.3.1. Users' perception of the decision-usefulness of the environmental reports. Respondents were asked to indicate how useful the environmental reports read were, for the purpose for which they were used. A five point Likert scale was used with weightings of one for not useful at all, two for not very useful, three for somewhat useful, four for useful and five for very useful. Therefore the closer the mean was to five, the more useful users perceived the environmental reports to be for their intended purposes. The percentages of those who indicated that the environmental reports were either useful or very useful were added up together, and reported as "percentage that perceive environmental reports to be useful" in the third column of Table 3. Therefore, those who indicated that environmental reports were somewhat useful or not very useful were conservatively reported as perceiving the environmental reports not to be useful at all, to ensure that only those who indeed perceive environmental reports to be useful for their intended purposes are recorded as such.

statements on relevance, reliability, comparability, understandability, timeliness and verifiability of the reports that they had read in the past 12 months. A five point likert scale was used with weightings of one for strongly disagree, two for disagree, three for neutral, four for agree and five for strongly agree. Therefore the closer the mean was to 5, the more users agreed with the statement. The percentages of those who indicated that they either strongly agreed or agreed with the statements were added up together, and reported as "percentage that agree with the statement" in the third column of Table 4.

In essence therefore, those who indicated neutral (neither agree nor disagree) are conservatively reported as disagreeing with the statement as the word "neutral" suggests a lack of a clear stand. This

approach is justified because it ensures that only those who outrightly agree with the statements are reported as such, and it has also been used in prior studies (See DeVilliers & Van Staden, 2010, p. 15). As summarized in Table 4, most users (62.86%) felt that the environmental reports they had read were understandable. Likewise 61.11% of users felt that the reports they had read were relevant. However,

only 37.14% of users felt that the reports they had read were reliable. A similar percentage of users also felt that the reports they had read were timely. Only 14.29% felt that the reports they had read were verifiable, worse still, only 8.57% of the users felt that the reports they had read were comparable. The standard deviations of less than one for all the six statements indicate agreement in users' perceptions.

Table 4. Users' perception of the quality of environment reports read

No	Statement	Percentage that agree with the statement	Rank	Users $n = 48$	Standard deviation
				Mean	
1	The environmental reports were understandable	62.86%	1	3.57	0.698
2	The environmental reports were relevant	61.11%	2	3.56	0.695
3	The environmental reports were reliable	37.14%	3	3.17	0.785
4	The environmental reports were timely	37.14%	3	3.20	0.797
5	The environmental reports were verifiable	14.29%	5	2.71	0.860
6	The environmental reports were comparable	8.57%	6	2.71	0.667

Notes: Scale: 1 = strongly disagree, 5 = strongly agree.

The above results are consistent with the notion that if accounting reports may possess varying degrees of primary (fundamental) characteristics and still be decision-useful (FASB, 2010, p. 21; IASB, 2010, p. 22; FASB, 2008, p. 02; IASB, 2008, p. 58). In the context of the above results, one could conclude that it was perhaps necessary and even desirable to sacrifice on the reliability of the environmental reports to make them more relevant (FASB, 2010, p. 21; IASB, 2010, p. 22; FASB, 2008, p. 2; IASB, 2008, p. 58). Indeed according to the FASB's (2008, p. 15) conceptual framework, for non-financial reports, relevance should be the dominant quality in the information conveyed even at the expense of reliability.

As with the primary (fundamental) characteristics, one could conclude that it was perhaps necessary and even desirable to sacrifice comparability, verifiability and timeliness, but to gain on understandability. Although three of four enhancing qualitative characteristics were perceived to be lacking in the environmental reports by most of the respondents, they did not affect the overall perceived decision-usefulness of the reports as these characteristics, even if lacking individually or as a group, cannot render relevant and reliable information to be not decision-useful (FASB, 2010, p. 21; IASB, 2010, p. 22; IASB, 2008, p. 41).

3.4. Users' level of satisfaction with the decision-usefulness of the environmental reports. To further probe users' perception of decision-usefulness of the environmental reports read, they were asked to indicate how satisfied they were with regard to the relevance, reliability, comparability, understandability, timeliness and verifiability of the environmental reports they had read in the past 12 months. A five point Likert scale was used with weightings

of one for not satisfied at all, two for slightly satisfied, three for moderately satisfied, four for very satisfied, and five for extremely satisfied. Therefore the closer the mean was to five, the more satisfied the users were with a qualitative attribute of an environmental report.

The percentages of those who indicated that they were either very satisfied or extremely satisfied, were added up together, and reported as "percentage of users satisfied with a qualitative attribute" in the third column of Table 5. In essence therefore, those who indicated that they were moderately satisfied or slightly satisfied were conservatively reported as not satisfied at all, as the words "moderately satisfied" and "slightly satisfied" imply some reservation with regard to the level of satisfaction. This approach is justified to ensure that only those who were completely satisfied by a qualitative attribute of an environmental report are reported as such.

Overall, Table 5 depicts a low level of satisfaction of users with the qualitative attributes of the environmental reports read in the past 12 months. Only 40% of users indicated that they were satisfied with the understandability of environmental reports read, whereas 37.14% of users indicated that they were satisfied with the relevance of environmental reports read. Only 22.86% of users were satisfied with reliability of the reports read, while 20% were satisfied with the timeliness of the reports. Worse still, only 11.43% and 5.71% were satisfied with the verifiability and comparability of the reports respectively. The standard deviation of less than one for responses to all the six attributes suggests agreement among the users on their level of satisfaction with the reports read.

Table 5. Users' satisfaction with the qualitative attributes of environmental reports

No	Qualitative attribute of an environmental report	Percentage satisfied with a qualitative attribute	Rank	Users $n = 48$	Standard deviation
				Mean	
1	Understandability	40.00%	1	3.26	0.886
2	Relevance	37.14%	2	3.06	0.906
3	Reliability	22.86%	3	2.80	0.994
4	Timeliness	20.00%	4	2.89	0.993
5	Verifiability	11.43%	5	2.46	0.980
6	Comparability	5.71%	6	2.46	0.780

Note: Scale: 1 = not satisfied at all; 5 = extremely satisfied.

The preceding results are consistent with the notion that the general purpose accounting information such as that contained in environmental reports is meant to serve different purposes. Accordingly it is unlikely that the information contained in one such report can satisfactorily serve the diverse purposes for which the contained information could be used by different stakeholders. More so is giving that human wants and needs for commodities including accounting information are insatiable.

3.5. Users' suggestions for improvement of the decision-usefulness of environmental reports.

Bearing in mind that there is always a room for improvement of the quality of accounting reports, users were asked to suggest how the decision-usefulness of the environmental reports that they had read in the past 12 months should be improved. Given that this was an open-ended question, a qualitative data analysis approach was deployed using Creswell's data analysis spiral, as described in Leedy and Ormrod (2001, p. 161).

Each respondents' response was content analyzed and any patterns or trends that the data reflected were assembled together in six groups of meaning units that matched the qualitative characteristics of decision-useful information, which were then compared to the findings in prior studies to determine whether they

concurred with the literature or not (Leedy & Ormrod, 2005, p. 136) (See Table 6).

Nineteen users responded to this question, however, three did not have any suggestions for improvement and therefore only 16 users' suggestions are summarized in Table 6. Out of 16 users that provided suggestions on how the quality of environmental reports should be improved, 50% suggested improvements related to the reliability of the reports, most notably independent verification of the environmental reports. Just above 31% suggested improvements related to the relevance of the reports, particularly focusing on stakeholder engagement. Of the users, 25% suggested improvements related to comparability of the reports, while about 19% suggested improvements related to understandability. Equally, 19% suggested improvements related to verifiability of the reports. Only 7% of users suggested improvements related to timeliness of the reports. It is interesting to note that most of users' suggestions for improvement were related to reliability and relevance of the reports, the two primary (fundamental) qualitative characteristics of decision-useful accounting information. In other words, the users wanted more decision-useful environmental reports, than they were currently reading.

Table 6. Users' suggestions for improvement of the decision-usefulness of environmental reports read

User number	Suggestion	Meaning unit
1	Improving practicality and verifiability of the reports from the outset	Relevance Verifiability
2	Wider participation of stakeholders in the reporting process	Relevance
3	Regulation through competent authorities to ensure that reports are of an adequate quality. Enforcing independence of auditors.	Reliability
4	Presenting verifiable facts that have been audited by a third party to ensure correctness	Verifiability Reliability
5	Reporting on what a company plans to do in the future	Relevance
6	Standardizing formats as well as reporting techniques to avoid obscuring details through corporate branding in the reporting style	Comparability Understandability
7	Stakeholder consultation that involves ordinary employees	Relevance
8	Ensuring that all environmental reports look the same and contain similar information. All reports should be verified by independent verifiers especially for the purpose of carbon tax	Comparability Verifiability Reliability
9	Inclusion of monetary value in the environmental disclosures	Comparability

Table 6 (cont.). Users' suggestions for improvement of the decision-usefulness of environmental reports read

User number	Suggestion	Meaning unit
10	Ensuring that the reports are current and that they reflect stakeholders' feedback	Timeliness Relevance
11	Adherence to King III report's requirement for integrated reporting, as well as GRI guidelines	Reliability
12	Reducing the variety of reports, many of which are poorly written. Improving the readability of the reports. Reducing the wide range of reporting consultants by introducing professional registration, annual review and regulation of the environmental consulting profession	Comparability Understandability Reliability
13	Demonstrating the integration of environmental reporting with other core aspects of a business, such as financial and social aspects	Reliability
14	Eliminating bias or subjective reporting as the reports tend to reflect only positive aspects of a reporting entity, given that editorial control lies with the companies' management	Reliability
15	Reducing the length, difficulty to download, and sizes of files to allow readability and accessibility of environmental reports	Understandability
16	By being honest	Reliability

The suggested improvements which were mostly related to the reliability of environmental reports (50%) and to a lesser extent related to their relevance (31%), which suggests that the reports were perceived to be more relevant than they were reliable, as it is their reliability that was perceived to need most of the improvement.

Conclusions

This paper sought, by way of a questionnaire survey, to elicit users' perception of decision-usefulness of environmental reports produced by South African listed companies. The results section of this paper indicated, at statistically significant levels that the sampled users do read environmental reports and that they employ the reports for making various decisions. With regard to the latter, the results indicate that the three most popular uses for environmental reports are for education or research, own knowledge and to hold companies accountable. Nonetheless environmental reports are also used to decide whether or not to buy a company's products, invest or disinvest from a company, whether to partner with a company, and whether to support or launch action against a company, albeit to a lesser extent. The results also revealed that the environmental reports are perceived by users to be generally useful by most users particularly with regard to their understandability and relevance. However, only a minority of users perceive the reports to be reliable, timely, verifiable and comparable.

Only a minority of users were satisfied with the relevance, reliability, comparability, understandability, timeliness and verifiability of the environmental reports they had read in the past 12 months,

albeit not to the same extent. For this reason most users suggested improvements in the reliability and relevance of the reports, which happen to be the two primary (fundamental) qualitative characteristics of decision-useful accounting information, an indication that they wanted more decision-useful information.

Taken together, the above results indicate that users perceive the environmental reports produced by listed South Africa companies to be decision-useful, and therefore the objective of environmental reporting as posited by the decision-usefulness theory appears to have been met. The above results provide evidence for a need for accounting regulators to consider placing the development of environmental accounting and disclosure standards on the agenda immediately, and for assurance providers to pursue the market of assuring environmental reports.

This study is susceptible to the usual limitations of a self-administered questionnaire survey namely non-response bias and inability of the researcher to probe responses. However various measures were undertaken to avoid these pitfalls including achieving a high response rate and careful design of the questionnaire to allow questions to flow in a probing manner. Another obvious limitation of this study is that only three user groups, namely; ethical investors, environmental NGOs, and accounting researchers were invited to participate in the questionnaire survey. Given that potential users include many other stakeholder groups, the perceptions of the three groups invited may not be representative of the perceptions of all stakeholder groups. Further research could investigate the perception of decision-usefulness of environmental reports by other user groups such as regulators, employees, green consumers and so on.

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