Corporate Social Responsibility Reporting - a Stakeholder` s Perspective Approach

Thorsten Litfin, Gunther Meeh-Bunse, Katja Luer, Özlem Teckert
University of Applied Science Osnabrueck, Faculty of Management, Culture and Technology (Lingen Campus), Germany

Abstract

Background: International financial reporting standards have constantly been facing fast-growing significant development. This has mainly been driven by the aim of better serving the needs of the investors. Awareness that corporate financial reporting provides short-sighted information and measures has been rising among politicians, in the society and on the financial markets. Therefore, Corporate Social Responsibility (CSR) reporting as a form of non-financial reporting has made it to limelight. Various reporting types developed, but the type of reporting is hardly codified. Objective: The goal of this paper is to identify the superior CSR reporting type from a stakeholder` s perspective. After identifying and analyzing central guidelines on CSR reporting and presenting different approaches, the authors will apply a positive-empirical methodology. Methods/Approach: In this first innovative joint attempt, eye-tracking technology is combined with a questionnaire for approaching CSR quality. Results: This study demonstrates the validity of the used methodology for the analysis of search and information browsing behavior in various types of sustainability reports. Conclusions: Overall our findings indicate that the reporting type “reference sustainability report” may not be advisable from a stakeholder` s perspective.

Keywords: sustainability reporting, information quality, eye-tracking, stakeholder perception
JEL classification: M 14, M 48
Paper type: Research article, Empirical Case Study

Introduction

The EU directive 2014/95/EU amending EU directive 2013/34/EU will obligate public interest companies to report on nonfinancial information (e. g. environment, employee-related matters, human rights, anti-corruption and bribery, future Art. 19a of the directive 2013/34/EU). Hence, the preparation of a sustainability report will become one of the major accounting challenges for the companies concerned.
While the directive turns the voluntary reporting on nonfinancial information into compulsory, it does not regulate how to report. As a result preparers keep orientating towards different initiatives on national and international level that provide various frameworks and guidelines. To this very day, a lack of unified and precise legal regulations can be noticed. In consequence, companies bear on various, so far voluntarily applied guidelines when it comes to reporting on CSR. On a more national (German) level e.g. the (German) Sustainability Code provides a framework for reporting on sustainability management regardless of company size or legal form (Rat für Nachhaltige Entwicklung, 2016a). On an international level the United Nations Global Compact (UNGC) recommend its voluntary members to take accepted sustainable principles into account - e.g. for ensuring environmental measures or protection of human rights (United Nations, 2016). The guidelines provided by the Global Reporting Initiative (GRI) are closely connected to the UNGC including general principles and indicators to transparently present economic, ecologic and social activities of a company. The absence of unified and binding legal sustainability reporting guidelines results in various sustainability reporting types. The companies’ focus on guidelines (e.g. the GRI G4-guidelines) is on hand as far as the content is concerned, but they are almost free in their decision on how to report. Being based on such different frameworks and guidelines the different reporting types according to Figure 1 developed: Some companies prepare a separate sustainability report, there are prepares with an embedded sustainability report and others prepare a report that uses references to the annual report, the internet presence or other already existing documents and data of the company. The separate sustainability report contains only information and business figures with regard to economic, ecologic and social sustainability. This report may (partly) be based on the same database as the preparer’s financial annual report, but published independent of it. The embedded sustainability report presents information on sustainability in a separate chapter within the annual report.

A topic recently addressed in the broad media strongly related to economic sustainability is the amount of and the country where taxes resulting from the value creation are paid. Here as well as in the aspect of market activities, a sustainable behaviour necessitates a strong local and regional anchorage and the inclusion of its markets (Global Reporting Initiative, 2015, pp. 48 et seqq.).

Directly linked to the concept of sustainability are new challenges that companies are increasingly facing because considering the ecological and social dimension may not have been the focus of a company’s day-to-day management. Since buying decisions are more and more depending on the company behind the product (Köppl et al., 2004), a concept called “Corporate Social Responsibility” (CSR) developed. The public call for a comprehensible Sustainability Reporting has been getting louder (see for a literature review Hahn et al. (2013) in conjunction with Eccles et al. (2012) and Eccles et al. (2011). The Commission of the European Communities describes the concept of CSR as a “concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis” (Commission of the European Communities, 2001). Therefore, it should be pointed out that CSR includes business activities trying to fulfil a company’s duty to take economic as well as ecologic and social responsibility into account.
Depending on the choice of reporting type, structure and level of knowledge, the information behaviour of viewers with regard to the perception of CSR/Sustainability Reporting is hardly investigated. The purpose of the paper is to promote awareness for preparers as well as stakeholders that the choice of different reporting types is not only a question of subjective liking (Figure 1). It is a question on how barrier-free reported aspects are perceived by the stakeholders. In order to determine differences in perception and degree of differences eye-tracking technology is applied.

In general, up to 90% of the perceived information is visually conveyed (Schub von Bossiazky, 1992). Yet, eye-tracking provides the opportunity to capture perceptual processes with technical equipment. Eye-tracking employs infrared cameras measuring where, how long and in what sequence individuals focus on specific objects. Nowadays eye-tracking is used in a wide range of areas, for instance in neuroscience, marketing, computer science and industrial engineering (Duchowski, 2002; Duchowski, 2007). A small number of empirical surveys demonstrate that the application of these instruments for the analysis of visual perceptions in the field of financial reporting is promising. The objective here was to improve the readability of those reports by increasing the visibility of key information and enhance the precision of the information. Eisl et al. (2015) provide a detailed report on the state of the art of designing company reports. As demonstrated in Eisl et al. (2015) many empirical eye-tracking studies focus on the question of how to design tables and figures. To date there is no published eye-tracking study available comparing types of sustainability reports in a holistic way. Due to the fact that eye-tracking alone is not sufficient to find out what recipients think while observing a stimulus or how they process and interpret the perceived information, a mixed-method approach is recommended in literature (Geise, 2011; Duchowski, 2007). In order to make sensible use of Eye-Tracking technology here it is combined with a paper-based survey approach and visual monitoring to capture comments and emotions during the eye-tracking study. The contribution will present the perception
of the different sustainability reporting types (oriented towards GRI G4-guidelines) with the help of an eye-tracking system from a stakeholder’s perspective. Especially the mutual dependence of sustainability reporting type and the participants’ information behavior takes centre stage. The results will be used determining future possible measures to be taken against the overall goal of improving companies’ sustainability reports. Primarily it shall be analysed whether or not particular reporting types are perceived as being especially user friendly for the general public and relevant for the perception of the enterprises’ degree of sustainability.

**Background**

Originally risen from the Latin word “sustinere” (endure, support, hold back), the roots of the sustainability-idea can be reduced to Carl von Carlowitz (1645-1714) who defined the main principle of sustainability for the area of forestry for the first time by claiming that a forest needs to be harvested in a way which ensures taking only as much wood as can grow back for future generations (Carlowitz, 1713, pp. 86 et seq.). The so called Brundtland Report (United Nations, 1987) defines today’s common understanding and generally accepted definition of sustainability: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. As it can be seen, the conception of sustainable development clearly demands an assumption of responsibility for future generations as well as for the environment. The following years the topic of sustainable development was determined as a guiding political principle as the first United Nations Conference on Environment and Development took place in Rio de Janeiro in the year 1992 and the Agenda 21 (United Nations, 1992) was decided: A programme of action for a worldwide sustainable development. As one result the European Union defined in the Treaty of Amsterdam in 1997 (European Union, 1997) an initial approach of the Three-Pillar-Model of Sustainability as shown in Figure 2.

**Figure 2**

Sustainability’s Three-Pillar-Mode

![Sustainability's Three-Pillar-Mode](Source: Author’s illustration following Ernst et al. (2015), p. 25 et seq.)
The Ecology pillar concentrates on corporate environment protection efforts and policies. Central aspects are usage and management of natural resources as well as greenhouse gas emissions. Awareness, the ability to measure and the ability to account for are the basis of this pillar. Strategies and aims on reduction of non-renewable consumption while strengthening renewable sources are a way to sustainability in the Ecology pillar (Rat für Nachhaltige Entwicklung, 2016b). The Economy pillar highlights financial flows to and from stakeholders as well as market activities. Such a stakeholder is e.g. the municipal in which a company operates. While the ability to measure financial flows is usually already implemented by accounting regulation awareness of quality respectively strategies and aims are advised to ensure sustainability.

The Social Aspects pillar works both within the company and its suppliers as well as with the company’s local communities. In addition, here awareness and ability to measure and ability to account for are the basis for respective strategies and aims. Employment policies of the company itself and those of its suppliers are as well in focus as civic interaction with the local communities a company operates in. Finally yet importantly sustainably, behavior as anticorruption and compliance is subsumed under the Social Aspects pillar (Global Reporting Initiative, 2015, pp. 64 et seqq.).

**Methodology**

The objective of this pilot study is to explore whether and to what extent the combination of an eye-tracking approach with an opinion survey can deliver valuable information about the search behavior of potential stakeholders analyzing sustainability reports of companies. The following questions are of particular interest: a) does the difference in reporting types influence the search behavior of stakeholders, and b) do particular reporting types support potential stakeholders in their search for specific information and their judgment of the sustainability of companies.

Such quality of the sustainability reports/reporting types are measured by using the following questions:

- Is the preparer able to present a sustainability strategy?
- Is the structure of the sustainability report useful and clearly structured?
- Is the information content of the sustainability report (too) high or (too) low?
- Is the information provided by the preparer credible?
- Is the information provided by the preparer essential?

The participants of this exploratory study were 12 business students specialized in financial accounting. During a prior course taken by these students the focus was on sustainability reporting. The sustainability reporting of a number of companies was analyzed with the result that the participating students acquired a notable degree of expertise in this field.

The underlying material for every report format in this study was a distinguished sustainability report developed by an SME with less than 250 employees. The format of their report received an award by the Institut für Ökologische Wirtschaftsforschung (Institute for Ecological Economy Research) (Gebauer et al., 2012). The study focused on SMEs in order to provide comparability and decrease the complexity for the 12 students participating in the study. The following best-practice reports have been selected: a) an embedded report by Stadtwerke Heidelberg, b) a separate report by memo AG and c) a reference report by the Märkisches Landbrot GmbH. All reports are of high quality and have been provided to the students one week prior to the beginning of the study.
During the study the 12 students were randomly and evenly assigned to the three different reporting types. In practice, stakeholders are only interested in specific information within a sustainability report. In order to simulate these particular interests each of the students received specific questions for the criteria associated with the three presented dimensions of sustainability supplemented by regional engagement. Even though the questions were simple, e.g. “Could the company save energy?”, a pretest conducted with three member of staff revealed a lack of time to answer all questions. For this reason, the time allocated was increased from previously planned 10 to 20 minutes. The type of questions and tasks, proofed comprehensible and traceable.

The mobile eye-tracking system “Tobii Pro Glasses 2”, enabling the actimetry and analysis of individual gaze behavior was employed for the documentation of the search and response behavior of the 12 students. In order to assess the quality of responses in relationship to the three criteria and the search behavior of the students, an expert for CSR applied a one-to-five order Likert scale. In order to detect whether the search behavior correlates with the judgment of sustainability reports, students were asked to: 1) participate in the eye-tracking test, 2) judge the sustainability reports according to the available criteria, and 3) express an overall judgment. Here, the Likert scale was applied for purposes of consistency (Litfin et al., 2016).

**Results**

The applied methodology was successful in terms of reconstructing and analyzing the search and information browsing behavior of the participants. With the exception of one individual, all students used the table contents as a reference after a short period of orientation. This means the search behavior may be referred to as targeted.

**Table 1**

<table>
<thead>
<tr>
<th>Type of Sustainability Report</th>
<th>Reference</th>
<th>Embedded</th>
<th>Separate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>268.56</td>
<td>64.49</td>
<td>286.44</td>
</tr>
<tr>
<td>SD</td>
<td>55.09</td>
<td>15.86</td>
<td>97.03</td>
</tr>
<tr>
<td>% of total recording</td>
<td>22.22</td>
<td>6.08</td>
<td>27.19</td>
</tr>
<tr>
<td>Mean</td>
<td>4.53</td>
<td>1.39</td>
<td>4.98</td>
</tr>
<tr>
<td>SD</td>
<td>10.03*</td>
<td>2.20*</td>
<td>12.56*</td>
</tr>
</tbody>
</table>

Source: Authors’ calculation

*Note: The upper figure provides the fixation durations of an entire page, whereas the lower figure lists the fixation duration of the table of contents.

In order to determine the fixation duration on the table of contents or the index the eye-tracking data collected were automatically mapped onto these areas of interest (AOI) by using snapshots of the relevant pages. These fixation durations are listed in Table 1.

The table of contents of the embedded report was analyzed in the shortest period of time both in relative and absolute terms in comparison with the entire recording period. The separate report has additional information and a figure placed next to
the table of contents. For this reason the table of contents was defined as additional AOI. Taking into account an adjusted fixation duration of the table of contents the overall duration of the reference report is significantly longer than the other two reports.

The heat maps as displayed in Figure 3 reveal which elements are most intensely observed. The attention map of the separate report shows that most of the visual attention is directed towards the figure which distracts the viewer from the table of contents. In comparison to the duration of the entire page the table of contents attracted only 40.6% of it. The analysis of the reference report reveals a wide scattering of the fixation. In contrast, the embedded report shows an aggregation of fixation.

*Figure 3*
Heat maps of pages including their contents (absolute duration)

![Reference sustainability report](image1)
![Embedded sustainability report](image2)
![Separate sustainability report](image3)

*Source: Authors’ calculation*
*Note: Absolute duration is calculated by the duration of fixations, whereas the warmest color represents the highest value.*

The sustainability ratios of the embedded report are consolidated over four consecutive pages. The focus here is on environmental protection, labor force and the company's regional commitment. The sustainability dimensions “social” and “ecology” are bundled. The students remained on those four (of 116) pages for 35% of the recorded time.

While the four students of the embedded report were able to entirely answer the questions in the sequence provided, the participants of the other two groups partly responded unsystematically, e.g. they jumped back and forth and - especially the reference group - with no recognizable pattern. Furthermore, the students of the separate and reference report responded partly incomplete. As illustrated in Table 2 the reference group took the longest time for the first orientation and to answer the questions.
Table 2
Time needed for orientation and answering questions

<table>
<thead>
<tr>
<th>Time needed for orientation and answering questions (in seconds)</th>
<th>Type of Sustainability Report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reference</td>
</tr>
<tr>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Orientation</td>
<td>90.50</td>
</tr>
<tr>
<td>Economy: How did the company’s sales develop?</td>
<td>313.67</td>
</tr>
<tr>
<td>Ecology: Could the company save energy?</td>
<td>398.00</td>
</tr>
<tr>
<td>Social: Which information about employee development can be found?</td>
<td>225.00</td>
</tr>
<tr>
<td>Regional: Does the report contain information on regional commitments and/or regional economic activities?</td>
<td>252.00</td>
</tr>
<tr>
<td>Overall</td>
<td>1279.17</td>
</tr>
</tbody>
</table>

Source: Authors’ calculation

The fast and fine orientation of the embedded report group is also supported by the analysis of the course of gaze in comparison to the other two groups. In general, every course of gaze can be subdivided into fixations in which the view lasts about 300 milliseconds. Then it moves at high speed into saccades in which the gaze "jumps" to fix another point (Leven, 1991, pp. 14). This process becomes visible when fixation points and saccade lines are traced. Such a visualization of the course of a gaze is called a gaze plot, whereas each group of interlinked fixation points represents the gaze of a single subject. The digits indicate the order of fixation and the size of the points symbolizes the dwell time.

For example, the view of the four students is analyzed during the search for the relevant information in the embedded report on the question “Could the company save energy?”. The appropriate information to this question is shown in Figure 4 with the resulting gaze sequences of the four students. For illustration, a period of 5 seconds has been selected for reasons of clarity. The relevant headings are used at an early stage for orientation, but the overall small circle sizes indicate that they are fixed for less time. The remaining fixation points are concentrated on the left-hand side of the report, on which a table with the summarized facts for answering the question was printed. Definitely the focus of fixations is on categories that are relevant for a proper answer. First relevant categories in the table followed by
corresponding values are headed for. Remarkably little attention is given to less relevant categories of the table.

Backgrounds of facts and data are explained in detail on the right-hand side of the report. However, this information is not necessary for solving the question. It is indicated by the number of fixations and the low fixation period that little attention had been paid to this background information. After the task has been solved, the scarce resource time is used to solve the next task. It is verified that the gaze is significantly influenced by given tasks (Geise, 2011, pp. 174; Yarbus, 1967, pp. 174). Headers and tables fulfilled their role to provide guidance. Especially they were used to convey factual knowledge.

Figure 4
Gaze plots of embedded report (Page including information on ecology issues)

Source: Authors' work
Note: Each group of interlinked fixation points represents the gaze of a single subject. The digits indicate the order of fixations. The size of the points symbolizes the dwell time.

In spite of the explicit focusing (Table 3), the analysis of responses of the embedded report group resulted in high quality responses. The separate report group performed almost as well as the embedded group. In contrast, the reference report group was just rated as having satisfactory results.

The analysis of perceived reporting quality by the students resulted in comparable grades as the results of the embedded and the separate report groups are on the same level as the analysis of duration fixations. However, the reporting structure and the sustainability strategy of the reference report are not convincing. This is in contradiction to the credibility and the application of the CSR idea.
Table 3
Evaluated response and perceived reporting quality

<table>
<thead>
<tr>
<th>Type of Sustainability Report</th>
<th>Reference</th>
<th>Embedded</th>
<th>Separate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Evaluation of the response quality of the questions (eye-tracking-study)</td>
<td>Economy</td>
<td>2.25</td>
<td>1.64</td>
</tr>
<tr>
<td></td>
<td>Ecology</td>
<td>3.25</td>
<td>1.48</td>
</tr>
<tr>
<td></td>
<td>Social</td>
<td>3.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Regional</td>
<td>2.50</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Subsequent assessment of the sustainability report

<table>
<thead>
<tr>
<th>Perceived reporting quality</th>
<th>Sustainability strategy</th>
<th>Structure</th>
<th>Information content</th>
<th>Credibility</th>
<th>Essentiality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reference</td>
<td>Embedded</td>
<td>Separate</td>
<td>Reference</td>
<td>Embedded</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>0.00</td>
<td>3.00</td>
<td>0.71</td>
<td>3.50</td>
</tr>
<tr>
<td>Assessment of sustainability</td>
<td>Economy</td>
<td>4.00</td>
<td>0.00</td>
<td>2.25</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>Ecology</td>
<td>3.75</td>
<td>1.09</td>
<td>3.75</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>Social</td>
<td>4.00</td>
<td>1.22</td>
<td>3.50</td>
<td>1.12</td>
</tr>
<tr>
<td>CSR idea</td>
<td>4.25</td>
<td>0.83</td>
<td>3.50</td>
<td>0.50</td>
<td>3.50</td>
</tr>
</tbody>
</table>

Source: Authors’ calculation
Note: Likert scale where 1 = very poor; 5 = very good

Discussion

The analysis of the eye-tracking study demonstrated that tables of contents play a significant role in orientating the reader of those reports. A search begins with the Table of contents that also guides the viewer decisively. This enhances the identification of relevant information. The analysis of the page with the table of contents in the separate report revealed that figures and miscellaneous information on the same page distract from the relevant contents since they attract much of the visual attention. According to our results a table of contents requires a distinct page in order to enhance the orientation of a viewer.

In the reference report references were distributed over three pages according to the GRI index for sustainability dimensions, “economy”, “ecology” and "social”. The participants rated the structure of this report more negatively than the other groups. In addition, the students showed more uncertainty in their search behaviour and had more difficulty in responding to the questions on the reference report. The reasons for this may be the reference structure on the one hand and the scattering of information over several pages on the other. As a consequence, the quality of responses to this report was remarkably lower in comparison with the other two reports. Moreover, the students became frustrated while processing the questions, and they expressed their dissatisfaction with this task. Our findings indicate that the reporting type “reference sustainability report” may not be advisable.

In contrast, it was easier for the students to respond to the questions for the embedded report. They evaluated the reporting structure positively, and at the same time delivered answers of higher quality. The reason may be the condensed representation of sustainability figures in a low number of pages. This study supports
the trend towards the application of an embedded sustainability report in practice as postulated e.g. by Kolk (2010) and Hahn et al. (2013).

**Conclusion**

This pilot study of a combined eye-tracking and survey approach demonstrated the validity of this methodology for the analysis of search and information browsing behavior in various types of sustainability reports.

Thus, empirical research towards the enhancement of the readability does not need to be constraint to the design of tables and figures (Eisl et al., 2015), but may examine the visual perception and the resulting assessment of sustainability reports in a holistic way.

Our results indicate that preparer of sustainability reports should pay more attention on creating the table of contents in a manner that supports the orientation for the reader. That means a distinct page without pictures or miscellaneous information. Furthermore the application of an embedded sustainability report in practice is recommendable whereas a reference sustainability report is not advisable.

Notwithstanding this our study faced limitations. These are in particular types and numbers of participants, the not mapped heterogeneity of real-world stakeholders and drawing on reports of different business fields. Subsequent studies should try to overcome these limitations. Subjects might be recruited from various vocations such as investors, clients, non-governmental organizations and employees. In future studies three reporting types may be applied to one enterprise. This means that these three reports have the same contents but different structures. In ideal the results would permit a direct conclusion about the reporting type that is the superior information provider to stakeholders. Another interesting task despite the perception of the information might be to examine what the potential stakeholders can remember from the perceived information after a period of time.

**References**


About the authors

Thorsten Litfin is a Professor of Marketing, Service and Innovation Management at the University of Applied Sciences at Osnabrueck. He received his PhD from the Institute of Innovation Management at Christian-Albrechts-University of Kiel. His research interests include product and pricing strategies for innovative products and services. He can be contacted at t.litfin@hs-osnabrueck.de

Gunter Meeh-Bunse is a Professor of Finance and Accounting at the University of Applied Sciences at Osnabrueck. He studied business administration at the University of Saarland and received his PhD from the University of German Armed Forces in Munich. His research interests include managerial accounting and corporate social responsibility. He can be contacted at g.meeh-bunse@hs-osnabrueck.de

Katja Luer is currently a Research Assistant at the University of Applied Sciences Osnabrueck, focusing on managerial accounting and taxation. She received her Bachelor’s degree in Business Administration from the University of Applied Sciences Osnabrueck and her Master’s degree in Taxation from the University of Muenster. She can be contacted at k.luer@hs-osnabrueck.de

Özlem Teckert is currently a Research Assistant at Osnabrueck University of Applied Sciences with a focus on marketing research. She received her Master’s degree in Economics and Laws from the University of Oldenburg and is currently a PhD candidate in the Department of Business Administration, Economics, and Law. She can be contacted at o.teckert@hs-osnabrueck.de