

Environmental disclosures in the non-financial reporting of energy companies. Creating a reliable business image or impression management?

Ujawnienia środowiskowe w raportowaniu niefinansowym spółek energetycznych. Tworzenie wiarygodnego wizerunku biznesowego czy zarządzanie wrażeniem?

ARLETA SZADZIEWSKA*, JAROSŁAW KUJAWSKI**

Abstract


Purpose: The purpose of the article is to determine whether and what impression management techniques are used by Polish listed energy-sector companies in their non-financial reporting to possibly create not a true but an embellished image of their operations.

Methodology/approach: The research entailed examining the non-financial annual reports published (in Polish) by eight large, listed companies. Both quantitative content analysis, to determine the scope of environmental disclosures, and qualitative content analysis, which focused on the visual and narrative style, were applied. The word count method was also applied concerning the positive (good) and negative (bad) wording used in the reports. Our linguistic analysis took into account both the semantic and inflexion aspects of Polish idiomatic expressions.

Findings: We found that the companies exploited various manipulation techniques, both in the visualisation and the narrative used in their non-financial reports. Perfect graphics, blameless narrative style, or dynamic text organisation are among the top positive aspects. At the other end of the scale are aspects such as excessive wording, unnecessary repetitions of various keywords, or the intentional omission of adverse vocabulary. While both sets of techniques are more likely to be applied by bigger entities, smaller companies do not seem to care as much for such details.

Research implications/limitations: This research provides a valuable contribution to a better understanding of how companies employ modern narrative-oriented information management techniques relating to readers' perceptions of non-financial statements. This may lead to enhancing formal requirements concerning the quality of non-financial disclosure in corporate reporting. The research was limited to only eight (all) energy companies listed on the Warsaw Stock Exchange for the financial years 2017-2020. Thus, there is

* Dr hab. Arleta Szadziewska, prof. UG, University of Gdańsk, Department of Accounting,
 <https://orcid.org/0000-0001-8151-5820>, arleta.szadziewska@ug.edu.pl

** Jarosław Kujawski, PhD, University of Gdańsk, Department of Accounting,
 <https://orcid.org/0000-0003-4627-4480>, jaroslaw.kujawski@ug.edu.pl

a need to investigate whether other listed companies use impression management techniques in non-financial reporting.

Originality/value: This article is the first publication to show how Polish large energy-sector joint-stock companies manage their environmental impression in non-financial reporting. The analysis extends the knowledge on creating a business operations image that is favourable to stakeholders by companies with a high environmental impact. This is of particular importance considering the non-financial reporting obligation that such entities have to meet as per Directive 2014/95/EU.

Keywords: non-financial reporting, environmental disclosures, impression management, reliable information.

Streszczenie

Cel: Celem artykułu jest ustalenie, czy i jakie techniki zarządzania wrażeniem wykorzystują w swoich raportach niefinansowych spółki energetyczne notowane na Giełdzie Papierów Wartościowych (GPW) w Warszawie w potencjalnym zamiarze stworzenia nie rzeczywistego, lecz upiększzonego obrazu swojego funkcjonowania.

Metodyka/podejście badawcze: Badaniu podlegały raporty niefinansowe ośmiu spółek energetycznych notowanych na GPW w Warszawie. Wykorzystano zarówno ilościową analizę treści służącą do ustalenia zakresu publikowanych informacji środowiskowych, jak i jakościową analizę treści koncentrującą się na wizualnych i narracyjnych ujawnieniach z tego obszaru. Zastosowano również metodę liczenia słów, w odniesieniu do pozytywnych (dobrych) i negatywnych (złych) sformułowań użytych w badanych raportach. W analizie lingwistycznej uwzględniono zarówno semantyczne, jak i fleksyjne aspekty polskich wyrażen idiomatycznych.

Wyniki: Stwierdziliśmy, że badane spółki wykorzystywały zarówno wizualne, jak i narracyjne techniki zarządzania wrażeniem w swoich raportach niefinansowych. Perfekcyjna grafika (rysunki), nienaganny styl narracji czy staranny układ tekstu należą do głównych aspektów pozytywnych. Z drugiej strony stwierdzono wykorzystanie nadmiernej liczby słów, występowanie niepotrzebnych powtórzeń czy celowe pomijanie niekorzystnego słownictwa. Te techniki są częściej stosowane przez większe podmioty, podczas gdy mniejsze nie przywiązują wagi do tego typu elementów.

Implikacje badawcze/ograniczenia: Badania stanowią cenny wkład, umożliwiając zrozumienie interesariuszom, w jaki sposób firmy wykorzystują techniki zarządzania wrażeniem w raportach przedstawiających informacje niefinansowe. Badanie zostało ograniczone do ośmiu (wszystkich) spółek energetycznych notowanych na GPW w Warszawie należących do sektora energetycznego. Z tego powodu istnieje potrzeba prowadzenia dalszych prac w celu ustalenia, czy inne spółki giełdowe stosują techniki zarządzania wrażeniem w raportowaniu niefinansowym.

Originalność/wartość: Artykuł jest pierwszą publikacją wskazującą, jak duże giełdowe spółki energetyczne w Polsce zarządzają wrażeniem w raportowaniu środowiskowym. Przeprowadzona analiza ma na celu poszerzenie wiedzy na temat kreowania korzystnego dla interesariuszy wizerunku działalności biznesowej przez firmy o dużym wpływie na środowisko naturalne. Ma to szczególne znaczenie, jeśli wziąć pod uwagę obowiązek raportowania niefinansowego przez te podmioty zgodnie z wprowadzoną dyrektywą 2014/95/UE.

Słowa kluczowe: raportowanie niefinansowe, ujawnienia środowiskowe, zarządzanie wrażeniem, wiarygodność informacji.

Introduction

The disclosure of non-financial information¹ by large companies is an increasingly popular practice. According to KPMG (2020, p. 17), 76% of the examined G250 companies included such disclosures in their financial statements. What is more, 73% of them used the GRI (Global Reporting Initiative) guidelines to present such information, while 62% verified it using external auditors. These numbers demonstrate that companies try to increase their information credibility for the sake of their stakeholders. Nevertheless, many researchers criticize both the use of the GRI standards, as well as the external verification of such reports (e.g., Fonseca et al., 2012; Calabrese et al., 2017; Boiral et al., 2018; Waniak-Michalak, 2017; Waniak-Michalak et al., 2018).

What is more, the quality of the non-financial information published still raises a great deal of controversy due to the inconsistencies observed, which limit the usefulness of such information when assessing an entity's activities. For this reason, many researchers treat non-financial reporting² as a marketing instrument or a tool for social legitimation and often as an impression management strategy (e.g., Hooghiemstra, 2000; Higgins, Walker, 2012; Sandberg, Holmlund, 2015; de Klerk, van Wyk, 2017; Talbot, Boiral, 2018; Hoffmann et al., 2018). In terms of impression management, environmental and social information is used to create a favourable impression of business activity to manipulate stakeholders. Often, the reason for this is the lack of applicable regulations that would oblige companies to report reliable and useful information in this matter. Therefore, as Merkl-Davies and Brennan (2007, p. 11) stated, by using impression management techniques that involve manipulating the way information is presented (manipulation to ease reading, rhetorical manipulation, visual and structural manipulation) or by manipulating the way information is disclosed (thematic manipulation, performance comparisons, choice of earnings number, and attribution of performance), companies can create an image of their business that is at least embellished if not unreal, but desired by their stakeholders.

So far, non-financial reporting in Poland has not been tackled from the perspective of creating a favourable impression of business activity to manipulate stakeholders. Since the beginning of the 21st century, many studies have tried to estimate the scope and form of the non-financial information published. They

¹ In the literature on the subject, the term 'non-financial information' is interpreted diversely. It is ambiguous, multi-faceted and used in very different contexts. What is more, none of the non-financial reporting standards developed propose a definition for this category. Typically, 'non-financial information' includes environmental, social, employee, human rights, anti-corruption, intellectual and intangible assets, corporate governance, and risk management information. This creates disparities between stakeholder expectations, the regulatory requirements, and investor expectations. These issues are discussed in more detail in Tarquinio and Posadas (2020, pp. 727–749) and La Torre et al. (2018).

² Śnieżek et al. (2018) and La Torre et al. (2018) discuss issues related to non-financial reporting more broadly.

have also tried to determine the relationship between the scope of the non-financial disclosures made and company size, and the relationship between the industry in which a company operates and its profitability (see Paszkiewicz, Szadziewska, 2011; Krasodomska, 2014; Balicka, 2015; Beck-Gaik, Rymkiewicz, 2014, 2015; Dyduch, 2017; Dyduch, Krasodomska, 2017). Zarzycka, Krasodomska's (2021) recent study of non-financial statements of enterprises in Poland that are obligated to make non-financial disclosures indicated that companies tend to present various non-financial Key Performance Indicators (KPIs) in various parts of their reports, which affects the transparency and comparability of non-financial reporting. Based on the analysis of the corporate social responsibility reports published in Poland, it has also been found that selected greenwashing practices were used (see SOB, 2015; ESG analysis, 2017; Śniezek et al., 2018).

Taking this into account, research on impression management in the non-financial reports of listed companies in Poland is of particular importance in the context of complying with ethical principles in stakeholder communication.

For this reason, the main purpose of the article is to determine whether and what impression management techniques are used by Polish listed energy-sector companies in their non-financial reporting to possibly create not a true but an embellished image of their operations. In order to achieve it, the following research questions were formulated:

RQ1: What was the scope of the environmental disclosures in the non-financial reporting of listed energy-sector companies in Poland between 2017 and 2020?

RQ2: What is the quality of the environmental disclosures in the reports of listed energy-sector companies in Poland between 2017 and 2020?

RQ3: In non-financial reports, do energy companies use impression management techniques to create the image of their business?

The article focuses on environmental disclosures only, such as descriptions of the company's environmental impact, environmental KPIs, environmental goals in the management system, and external environmental certifications. The analysis of the other non-financial disclosures (for example, social, employee, client-related, human rights, and anti-corruption disclosures) will be presented in another publication.

The study covered various forms of publishing this type of information permitted by Directive 2014/95/EU, namely: separate reports (sustainability reporting, corporate social responsibility reporting – CSR reporting, integrated reporting) as well as the management commentaries and separate statements on non-financial information that are attached to annual reports. Additionally, bearing in mind the theory of impression management, the manner in which energy companies portray their business activity using non-financial information has been examined. In particular, we investigate whether impression management techniques are used in non-financial reports not to create a real picture of how these companies function, but an embellished one.

This article is the first publication to show how large Polish joint-stock companies from the energy sector use non-financial reporting for impression management.

The analysis of the non-financial information published in the examined reports, which focuses on the impression management techniques applied by companies with high environmental nuisance, extends the knowledge on creating a business operations image that is favourable in the stakeholders' eyes. It also indicates that the obligation to publish non-financial information introduced by the transposition of Directive 2014/95/EU into the national law allows companies to embellish reality by selectively presenting non-financial information to highlight the positive aspects of business operations³.

The following research methods were used: quantitative content analysis (to study the scope of the environmental disclosures made by energy companies between 2017 and 2020), qualitative content analysis (to determine the use of selected impression management techniques), and regression analysis. The relevant statistics were also calculated to determine the quality of the environmental information presented in external reports.

The remainder of the article is organised as follows: the second section presents a literature overview concerning impression management in non-financial reporting, the next section contains methodology and analysis, the fourth section describes the results of the analysis, and the last section presents the conclusions and indications for future research.

1. Impression management in non-financial reporting – a literature review

Traditionally, impression management is defined as one person's attempt to affect another person's perception of him/her (Schneider, 1981, p. 25). It is a concept directly related to human behaviour. Therefore, it has been widely used in both social-psychology and sociology research to describe the behaviour of individuals who want to create a desired image in the eyes of other people. Nowadays, impression management is more commonly used in economic studies, particularly in accounting. In this context, it involves manipulating information to portray a particular image, and it is normally aimed at creating a more favourable view of a given company's performance than is warranted (Beattie, Jones, 2002, p. 547). As Merkl-Davies et al. (2011, p. 316) stated, impression management usually emphasises positive organisational outcomes (enhancement) or obfuscates negative ones (concealment), for example, by highlighting text or through the use of colour.

Impression management includes both financial and non-financial reporting, and the literature identifies several factors that motivate impression management. For example, Leary and Kowalski (1990, p. 36), when developing the two-component impression management model, indicated the following factors that motivate

³ Currently, consultations are underway on a draft CSRD (Corporate Sustainability Reporting Directive), i.e., a directive on sustainable-development-related corporate reporting. This regulation is to replace the currently applicable Directive 2014/95/EU.

managers' behaviour: the goal-relevance of impressions, the value of the desired outcomes, and the discrepancy between the individual's current image and the one he or she wants to convey. Therefore, managers can engage in impression management to achieve specific goals, e.g., financial, environmental, or social performance. Assigning value to specific results also affects impression-management behaviour. As stated by Rahman (2012, p. 2), the higher the value attached to particular outcomes, the stronger the motivation for impression management.

Moreover, the differences between the subject's socially desirable image and its real one also incline managers to manipulate society's perception of the company. Therefore, impression management is used to maintain confidence in an entity's actions, improve relations with its stakeholders, and reduce its responsibility for negative events (see Baird, Zelin, 2000; Aerts, 2005; Jaworska, Bucior, 2018). According to Willis (2008, p. 8), it is also related to maintaining organisational legitimacy, ensuring control over an organisation's status, and guaranteeing its continued existence. For this reason, impression management is often used in external reporting when an organisation's performance deteriorates, as well as after crises, scandals, and incidents involving the violation of norms and rules on the part of the entity (Jaworska, Bucior, 2017, p. 153).

First of all, numerous manipulations to create better-than-real company results have been found in financial reporting during the wave of bankruptcies of the largest American and European companies (e.g., Enron, WorldCom, HealthSouth, Freddie Mac, Xerox, Global Crossing, Elektrim). This has contributed to the questioning of the credibility and usefulness of the information contained in these documents. What is more, as Ingram and Frazier (1983, p. 49) stated, annual reports might be viewed in different ways, as an "undisguised advertisement" or as "platforms for preaching [management's] philosophies and [for] touting themselves and their companies" (as per: Smith, Taffler, 2000, p. 624). This is because most of the information contained in annual reports are narratives (i.e., 61%, according to a 2019 Deloitte report), which are used to explain the processes of creating the company's value and its relationships with stakeholders. The role of these reports is usually to create the company's image, build its reputation, and legitimise its activities (see Kobiela-Pionnier, 2018; Yuthas et al., 2002; Spear, Roper, 2013). Managers can thus use narratives not only as an interpretative background for the results achieved and the decisions made but also as a tool to manipulate the external perception of what the firm has achieved (Yan et al., 2019, p. 465). Or, as Stanton et al. (2004, p. 57) stated, it can also be used as a background to obscure adverse information (Yan et al., 2019, p. 465).

Even greater criticism regarding the usefulness of information for stakeholders applies to the additional reports that are more commonly published by enterprises that contain non-financial information. These practices include corporate social responsibility reports, sustainable development reports, non-financial information statements, and integrated reports. The information contained in these documents should enable a given company's results and decisions to be interpreted correctly. In particular, as stated by Federation of European Accountants

(FEE, 2016, p. 1), it should allow the value-creation processes in the organisation to be comprehended and its impact on the environment to be anticipated.

Non-financial reporting is not regulated by law in the same way financial reporting is. Until recently, such reporting was not a company's duty but a voluntary practice, usually to create its marketing image. At the same time, non-financial information usually takes the form of a description (a narrative) explaining the organisation's functioning and its results. For this reason, many researchers consider non-financial reporting to be a tool to manipulate stakeholders and create a favourable impression of a company's operations, which may not reflect reality (Sandberg, Holmlund, 2015, p. 678). Many researchers have confirmed the use of various impression management techniques that affect the neutrality, objectivity, and bias of the information presented in non-financial reports. Selected studies confirming the use of such practices are presented in Table 1.

Table 1. Selected studies confirming the use of non-financial reporting as an impression management tool

Type of behaviours	Technique	Short description	Examples of studies
Concealment	Manipulation to ease reading	It obfuscates negative/bad information by making the text more difficult to read	Boiral (2013) Richard et al. (2015) du Toit (2017)
	Rhetorical manipulation	It conceals negative/bad information by using persuasive language (e.g., pronouns and passive voice), highlighting (displaying) not what the companies say but how they say it	Cho et al. (2010) Higgins and Walker (2012) Cho et al. (2014) Sandberg and Holmlund (2015) Rodrigue et al. (2015) Richard et al. (2015) Melloni et al. (2016) Calabrese et al. (2017)
	Thematic manipulation	It emphasises good information by focusing on positive words or themes or on environmental and social performance	Cho et al. (2012b) Diouf and Boiral (2017) Talbot and Boiral (2018)
	Visual and structural manipulation	It uses appropriate graphic means to divert attention from bad information or to focus only on good information (e.g., through charts and drawings, or the size and colour of the writing)	Jones (2011) Cho et al. (2012b) de Klerk and van Wyk (2017) Cüre et al. (2020) Kanbaty et al. (2020)
	Performance comparisons	It selects comparative periods to present the company in the best light	Boiral and Henri (2015) Talbot and Boiral (2018)

cont. tab. 1

Type of behaviours	Technique	Short description	Examples of studies
	Selectivity	It focuses on selected results in the narrative (that are most favourable for the company)	Jones and Slack (2009) Talbot and Boiral (2018)
Attribution	Performance attribution bias	It attributes positive organisational outcomes to internal factors (taking credit for good performance) and negative ones to external circumstances (assigning blame for bad performance)	Barkemeyer et al. (2014) Sandberg and Holmlund (2015) Misani (2017)

Source: authors' own elaboration based on Rahman (2012), Masztalerz (2016), Hooghiemstra (2000), Merkl-Davies, Brennan (2007).

Various impression management techniques can be used to obscure negative results. The first two are listed in Table 1, i.e., manipulation to ease reading and rhetorical manipulation. They are intended to deliberately mislead the recipients' perception of the problems emerging in the company or diminish the significance of these problems for the decision-making process. As Curtis (2004, p. 292) reports, to this end, companies may reduce text readability in non-financial reports through the use of esoteric or vague vocabulary, gobbledygook, extraneous and non-relevant information, long sentences with complex grammatical structures, high variability in the ease of reading, as well as convoluted and spurious argumentation.

As stated by Brennan et al. (2009, p.7), companies may also exercise linguistic choice to influence the meaning. This is confirmed by Sandberg and Holmlund (2015) on sustainable development reports published by companies from the automotive and the energy industries. Their results indicate that the companies surveyed presented their activities in an over-favourable light, using a specific writing style that is subjective, positive, unclear and emotional. First of all, the issues presented in the reports were described to highlight the positive aspects of the functioning, "through the use of positively charged vocabulary", the use of vocabulary with unclear meaning, or the use of "words that at first seem to have a clear meaning but that on closer inspection do not give the reader a clear understanding of the company's actions" (Sandberg, Holmlund, 2015, p. 685).

Cho et al. (2010) also emphasized the importance of the language and the verbal tone used in non-financial reporting. They stated "that corporate environmental disclosures of poorer performing firms appear to emphasize good news, obfuscate bad news, and slant attributions of performance to their advantage in an attempt to manage stakeholder impressions of their corporate environmental performance" (Cho et al., 2010, p. 442). The complex nature of the language used in non-financial reports, which reduces their readability and information value

for stakeholders, was also confirmed by Rodrigue et al. (2015), Melloni et al. (2016) and du Toit (2017).

Thematic manipulation and selectivity manipulation are directly related to focusing on positive aspects of business operations and bypassing or underestimating bad ones. However, as stated by Richard et al. (2015, p. 8), thematic analysis focuses on the information content of texts and, more specifically, on the themes within texts, whereas readability analysis concerns the syntactic structure of texts. Selectivity manipulation, on the other hand, can be based on the disclosure of selected information (disregarding the adverse), e.g., in a narrative description, in order to create a positive image of the company for the environment. The search for these impression management techniques in non-financial reports has been the subject of many studies. For example, Boiral (2013, p. 1051) indicated that 90% of significant negative events were not reported in the surveyed companies' non-financial statements or were addressed in a very incomplete and non-transparent fashion, contrary to the principles of balance, completeness and transparency of GRI reports. In addition, he identified the use of reporting practices that included "a very incomplete, biased and/or distorted presentation of the adverse events, making it difficult if not impossible to recognize the real nature of the problem."

The study of 105 sustainability reports published by 21 firms from the energy sectors, carried out by Talbot and Boiral (2018) regarding disclosures addressing climate change and GHG emissions, also confirmed the use of impression management techniques such as thematic manipulation and selectivity. They stated that those techniques are employed either to justify certain information (by minimising impact, excuses and commitment) or to conceal it (through strategic omission and manipulation of figures) (Talbot, Boiral, 2018, p. 367). For this reason, the reliability and usefulness of non-financial reporting are often questioned. Therefore, such reports may be seen as a way of creating and disseminating myths about social and environmental accountability (Solomon et al., 2013).

Visual and structural manipulation are among the impression management techniques most commonly used in non-financial reports. Charts and images are used to convince the user of socially responsible business operations and to divert their attention or minimize the importance of bad information. According to Willis (2008, p. 12), such reports attract the reader's attention because remembering visual information from memory is easier than remembering numerical or textual information. What is more, as Unerman stated (2000, p. 675), photographs are sometimes a more powerful tool in CSR than narrative disclosures for stakeholders who do not have either the time or inclination to read every word in the report and just flick through it, looking at the pictures and possibly reading the chairman's statement. For this reason, as stated by Falschlunger et al. (2015, p. 386), charts and images are often used to mislead the stakeholders of corporate reports via selectivity, using graphical measurement distortion and presentational enhancement. According to Boiral (2013, p. 1044), this can reinforce certain messages,

highlight complex problems that are difficult to describe, or lend credibility to assertions. Graphically presenting social and environmental results is therefore aimed at creating an abstract image, detached from the business entity's reality. Such beautification of the company results when presenting environmental and social indicators on charts (e.g., inadequate comparisons, selecting a less transparent chart form) have been confirmed in studies conducted by Jones (2011), Cho et al. (2012b), Boiral (2013), de Klerk and van Wyk (2017) and Cüre et al. (2020), and Kanbaty et al. (2020).

According to Brennan et al. (2009, p. 11), by comparing the social and environmental results achieved, enterprises can also create an impression of performance that is at variance with the facts by choosing benchmarks that portray current firm performance in the best possible light (performance comparisons). The use of such impression management techniques has been confirmed in many studies (see, e.g., Jones, Slack, 2009; Cho et al., 2012a; Barkemeyer et al., 2014; Boiral, Henri, 2015; Waniak-Michalak, 2017; Diouf, Boiral, 2017; Talbot, Boilar, 2018; Waniak-Michalak et al., 2018). Over-time analysis of the results and determining quantitative targets for the coming years presented difficulties. Differences in the measurement units used occurred, unclear measurement of some indicators was found, and there was a lack of timeliness and indicator completeness nor any explanation for this change in the non-financial indicators reported.

The last impression management technique listed in Table 1, i.e., performance attribution bias, is also used in non-financial reports. As stated by Jaworska and Bucior (2018, p. 131), it is used to present the information in such a way as to elicit the desired impression from the recipients, thus creating the image and reputation expected. As such, negative results (e.g., lowering of environmental indicators) are attributed to external factors (external attribution). Positive results (e.g., increased environmental efficiency), on the other hand, arise out of the actions taken in the entity (internal attribution). According to Barkemeyer et al. (2014, p. 246), in the case of impression management strategies, attribution is the self-serving bias by companies to claim greater responsibility for successes than for failures. The results of a study carried out by Sandberg and Holmlund (2015, pp. 683–684) confirm the use of such practices in non-financial reporting. In particular, they identified defensive tactics to transfer responsibility for negative activity either to others or to external factors that are independent of the companies.

2. Methods used

In order to determine the scope of the environmental information disclosed, content analysis was used. The method has been widely employed to measure corporate environmental and social responsibility (Guthrie, Abeysekera, 2006, pp. 114–125; Altaweel, Bone, 2012, pp. 599–613; Vourvachis, Woodward, 2015, pp. 166–195).

Additionally, content analysis is used in communication, social psychology, sociology, journalism, health research, psychiatry and business. The literature specifies many definitions of content analysis. According to Berelson (1952, p. 18), it is “a technique for objective, systematic, and quantitative description of the manifest content of communication.” Krippendorff (2004, p. 18) defined it as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use.” Neuendorf and Kumar (2015, p. 1) suggested that the method entails a systematic, objective, quantitative analysis of message characteristics. Taking these definitions into account, content analysis enables researchers to sift through documents and identify vital words, sentences and data. This method has been increasingly used not only to detect the presence or absence of information, but also to analyse the context. However, to reliably measure the variables, it is important to construct appropriate and clear categorisation keys. As Holsti (1969) points out, “categories should reflect the purposes of the research, be exhaustive, be mutually exclusive, independent, and be derived from a single classification principle.” It should also be added that, in many scientific studies, content analysis has been used as a qualitative (quantitative content analysis) or a quantitative (qualitative content analysis) method. According to Zhang and Wildemuth (2009, p. 1):

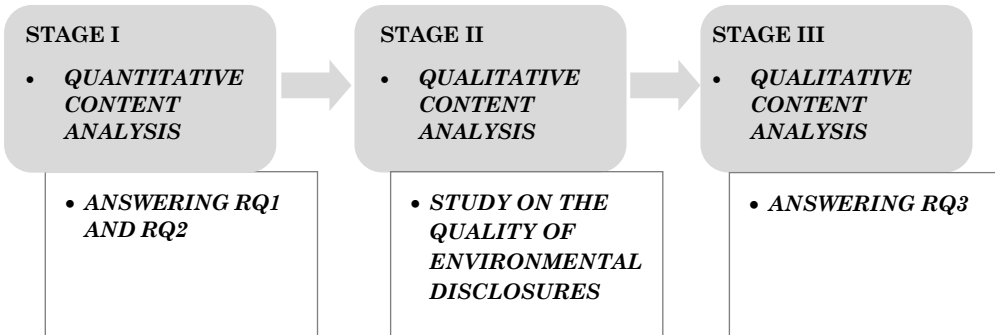
- quantitative content analysis goes beyond mere word counting or extraction of objective content from texts; it also examines the meanings, themes and patterns that may be manifest or latent in a particular text,
- qualitative content analysis is mainly inductive, grounding the examination of topics and themes as well as the inferences drawn from the data.

At the same time, many scientists state that both approaches are not mutually exclusive, but complementary, contributing to a better understanding of the phenomenon being analysed, which consolidated the two in research as a mixed model (Zhang, Wildemuth, 2009; Mayring, 2014).

Taking the above into account, our research encompasses:

- quantitative content analysis, to determine the scope of the non-financial information presented by energy companies, allowing us to answer RQ1 and RQ2;
- qualitative content analysis, to indicate both the quality of the environmental information presented by energy companies, based on a formulated quality index, and the use of selected impression management techniques, which allows us to answer RQ3.

The entire research implementation process is depicted in Graph 1.

Graph 1. Research process stages

Source: authors' own elaboration.

The source texts of the non-financial reports published between 2017 and 2020 by the eight companies subjected to the content analysis were retrieved from their websites, either as PDF files or texts directly accessed from dedicated web pages. After the reports were selected, categories were defined, codes were established for individual categories, and the issues that constitute the subject of the research were defined. Table 2 presents the category selection.

Table 2. Environmental reporting categories searched for

Categories		Measures	Score
Environmental information (maximum score is 24)			
E.1	Environmental KPIs	1. Physical information	10
		1.1. Use of natural resources – materials, water, energy	3
		1.2. Comparison with the previous year	1
		1.3. Emission – wastewater, waste, noise, air emission, other pollutants	5
		1.4. Comparison with the previous year	1
		1.5. Lack of physical information	0
		2. Monetary information	6
		2.1. Cost of environmental protection – fees, taxes, permits, fines (e.g., waste disposal fee, wastewater treatment charge, environmental production permits, greenhouse gas emission permits)	4
		2.2. Environmental liabilities	1
		2.3. Environmental protection investments (capital environmental protection expenditure)	1
	2.4. Lack of monetary information	0	

Categories		Measures	Score
E.2	Significant environmental aspects of business activity	1. Significant environmental aspects of business activity.	1
		2. Lack of significant environmental aspects of business activity	0
E.3	Environmental goals in the management system	1. Environmental protection incorporated into the mission or the strategy (pro-ecological targets as one of the corporation's goals)	1
		2. Environmental protection not incorporated into the mission or the strategy	0
E.4	External environmental certifications	1. ISO 14001, EMAS and others, such as Certificate of Cleaner Production, Membership of Responsible Care	1
		2. Lack of external environmental certification	0
E.5	Description of company's previous environmental activity	1. Information about the company's previous environmental activity	1
		2. Lack of information about the company's previous environmental activity	0
E.6	Published negative environmental information	1. The negative environmental information published (including the fines and damages paid and complaints filed on the environmental impact)	1
		2. Lack of negative environmental information	0
E.7	Compliance with environmental regulations	1. Information about compliance with the environmental regulations	1
		2. Lack of information	0
E.8	Environmental policy	1. Description of the environmental policy	1
		2. Lack of a description of the environmental policy	0
E.9	Environmental risk	1. Environmental risk	1
		2. Lack of a description of the environmental policy	0

Source: based on Szadziewska (2012), GRI4 (2016), Van de Burgwal and Oliveira Vieira (2014), and Szadziewska et al. (2018).

As Table 2 indicates, dummy variables were used to examine the non-financial information published (0 when the company did not present any information, and 1 when the information was disclosed). The KPIs were an exception, where the company could receive the following numbers of points for each published indicator (see Table 2):

- a) environmental physical information – a total of 10 points,
- b) environmental monetary information – a total of 6 points.

In total, 24 points could be awarded. After the scope of the environmental information published was determined, the qualitative content analysis of the published text was carried out in two stages. The first stage was to determine the quality of the environmental disclosures, which results from their credibility and stakeholder relevance. The environmental information attributes indicated are affected by the reporting standards used, the transparency of the disclosures

presented and the indication of their materiality, as well as external verification. To measure the quality of the environmental information published in external reporting, a disclosure quality index was calculated, taking the factors (variables) presented in Table 3 into account, which affect the quality of the environmental information published.

Table 3. Description of the disclosure quality index variables

Variable	Criterion	Score
1. Reporting standards	What standards are used by the company in its environmental information reporting? 1. GRI, ISO 26000, EMAS and other standards 2. No standards applied	1 0
2. Attestation	Have the environmental disclosures been audited by an independent third party? 1. There is a statement by an external party certifying the truthfulness of the environmental information 2. No attestation	1 0
3. Infographics	Are there any infographics in the report (statement) to create a more environmentally friendly image of the company's operations (through selectivity, visual emphasis or comparison of results)? 1. No infographics 2. There are infographics	1 0
4. Indication of key KPIs	Has the company identified environmental KPIs? 1. Relevant information exists 2. No information	1 0
5. KPI choice explanation	Has the selection of environmental KPIs been explained? 1. Relevant information exists 2. No information	1 0
6. KPI presentation transparency	Have tables been used to present environmental KPIs? 1. Yes 2. No	1 0
7. Comparison with previous years	Have the environmental KPIs been compared with the previous period in the report (statement)? 1. Yes 2. No	1 0
8. Results of stakeholder dialogue	Does the report (statement) indicate the results of the stakeholder dialogue, explaining the significance of the environmental information presented? 1. Relevant information exists 2. No information	1 0
9. Environmental certificates	Does the company hold environmental certificates? 1. ISO 14001, EMAS and others, such as a Certificate of Cleaner Production, Membership of Responsible Care 2. No environmental certificates	1 0

Variable	Criterion	Score
10. Disclosures on negative environmental impact	Has the enterprise disclosed information on increased environmental nuisance (e.g., exceeding environmental standards)?	
	1. Relevant information exists	1
	2. No information	0

Source: authors' own elaboration based on: Zarzycka, Krasodomska (2021); Hąbek (2015).

As Table 3 indicates, the disclosure quality index measures ten factors that affect the quality of the environmental information presented in external reporting. The selection was based on the qualitative attributes of the non-financial information desired, as per the literature review, e.g., Hąbek (2015); Wiśniewska and Chojnacka (2016); Waniak-Michalak (2017); Krasodomska and Zieniuk (2021); Venter and van Eck (2021); Krasodomska et al. (2021); Zarzycka and Krasodomska (2021). The EC recommendations contained in the reporting guidelines for this type of information (EC, 2017), the new draft directive on sustainable development information reporting (CSRD Directive, 2021), the document containing the conclusions of the consultation on this project (Stakeholder Feedback, 2021), and Staff Working Document ESG 2 on the quality of sustainability reporting (ESG 2, 2022) were also used in the factor selection process. Individual variables were assessed by assigning a value of 1 if information was available, and 0 if it was not. The index was calculated as the ratio of the points awarded to the sum of all scorable points. We also measured the relationship between the index calculated and the impact on its value of factors such as the report form, the scope of the environmental information presented (according to Table 2), the number of words in the report, and text difficulty, measured as a percentage of difficult words. For this purpose, the Anova one-way analysis, Pearson linear correlation analysis, Spearman rank correlation analysis, and the Levene test and Brown-Forsythe test of homogeneity of variance were used. The dependent variable and the independent variables are described in Table 4.

Table 4. Description of the dependent and the independent variables

Variable	Name	Measurement
Dependent		
INDEX	Disclosure quality index	The ratio of the points awarded to the sum of all scorable points determined in accordance with Table 3
Independent		
FR	Report form	Dummy variable: a value of 1 if the company prepares an additional report containing environmental information (e.g., CSR, sustainable development, non-financial), 0 otherwise
SED	Scope of the environmental information presented	Content analysis, in accordance with the assumed coding manner presented in Table 2

cont. tab. 4

Variable	Name	Measurement
NEW	Number of words addressing environmental aspects	Quantitative content analysis
NDW	Number of difficult words addressing environmental aspects	The Jasnopis software includes in this category words which are not commonly known and whose root entry forms have four or more syllables*

* This program was developed by a team led by Gruszczyński to calculate the readability indexes of a given text and to determine the features responsible for the too-high degree of incomprehensibility. These issues are discussed more extensively by Gruszczyński et al. (2015).

Source: authors' own elaboration based on Gruszczyński et al. (2015).

The variables adopted for the study of disclosure quality (Table 4) constituted the basis for verifying the research hypotheses indicated in Table 5.

Table 5. Research hypotheses

H ₁	H _{1/0} There is no relationship between the report form and the quality of environmental disclosures H _{1/1} There is a relationship between the report form and the quality of environmental disclosures
H ₂	H _{2/0} There is no relationship between the scope of environmental disclosures and the quality thereof H _{2/1} There is a relationship between the scope of environmental disclosures and the quality thereof
H ₃	H _{3/0} There is no relationship between the number of words that describe environmental aspects and the quality of environmental disclosures H _{3/1} There is a relationship between the number of words that describe environmental aspects and the quality of environmental disclosures
H ₄	H _{4/0} There is no relationship between the number of difficult words used to describe environmental aspects and the quality of environmental disclosures H _{4/1} There is a relationship between the number of difficult words used to describe environmental aspects and the quality of environmental disclosures

Source: authors' own elaboration.

The second stage of our study on environmental disclosure quality examined the narrative tone of environmental reporting (see Graph 1). For this reason, the original visual representation of the texts (pdf, ppt, web text) was re-arranged and converted into text files, which allowed the use of analytical software. The software used required the text strings in any other digital formats to be converted to the doc format. If the original text was published in a pdf file, then it had to be converted into a doc file, and, consequently, if the text was only available via a web page, with no possibility of downloading it, the text was copied and pasted in fragments into a doc file. In both cases, any redundant information, such as page headers and footers (and all other marginal text additions to beautify the visual

appearance of the reports), as well as any pictures and graphs, were carefully and consistently deleted, leaving all titles, subtitles, comments, and descriptions to all pictures, tables and graphs. As a result, the text prepared for software analysis contained all the necessary merit and textual content. Then the proper textual analysis was carried out by uploading the re-arranged and pre-prepared doc files to the software to determine the good and bad word count. We differentiated good words (GWs) and bad words (BW), which, in our opinion, are normally associated with the intrinsic meanings of the environmental matter under consideration. As many as 15 GWs and 13 BWs were initially identified and subjected to examination.

After the initial sets of GWs and BWs were selected, preliminary testing was conducted to target the least frequent GWs and BWs. As a result, the GWs and BWs that were zero-frequent or least frequent were identified and eliminated from the final word count to retrieve the words that appeared most frequently in both sets. The inflective nature of the Polish language was another and serious obstacle. As such, in every case, the number of words had to be, first of all, reduced only to the root words (without the suffix or prefix). When a Polish root word could have various meanings (e.g., >strat-<, i.e., *strata* – ‘loss’ or *strategia* – ‘strategy’), a detailed and thorough analysis was then carried out to eliminate any possible ambiguity. Next, when two Polish root words that derive from Latin or English (e.g., >zmniejsz-< or >zminimal-<, had the same meaning in Polish, i.e., ‘minimise’), both words were treated as having the same meaning and were counted together. Ultimately, this research approach allowed us to isolate the six most frequently repeated good words and the six most frequently repeated bad words (see Table 13) from the sets used to describe the companies’ attitudes towards environmental disclosure. The software used has been described by Jaworska and Bucior (2019).

With regard to the source texts themselves, in only one company, i.e., Będzin, the Management Board comment section of the 2017-2020 annual financial reports needed to be examined due to the lack of a stand-alone management report on non-financial aspects, as noted in Table 6. The other companies provided either additional reports (e.g., CSR) in their annual reports or non-financial statements in Management Commentaries.

The third stage of our study identified the impression management techniques used (see Graph 1) and aimed to answer the third research question (RQ3). Accordingly, the environmental disclosures were analysed to check for impression management techniques such as thematic manipulation, visual and structural manipulation, performance comparisons, and selectivity.

3. Findings and discussion

3.1. Quantitative content analysis of environmental reporting

The first stage determined whether the energy-sector entities disclosed environmental information between 2017 and 2020 and, if so, in what form this information was presented. The results are shown in Table 6.

Table 6. Form of the non-financial disclosures made by the energy-sector companies

Company	2017	Total words associated with EM	2018	Total words associated with EM	2019	Total words associated with EM	2020	Total words associated with EM
[1] BĘDZIN	SI	383	SI	505	SI	497	SI	1,078
[2] ENEA	NFS	2,049	AR	2,338	AR	3,155	AR	4,946
[3] ENERGA	AR	3,903	AR	6,846	AR	7,687	AR	5,180
[4] KOGENERACJA	NFS	979	NFS	1,684	NFS	2,552	NFS	1,026
[5] PAK	NFS	2,327	NFS	3,668	NFS	3,573	NFS	2,427
[6] PGE	AR	3,647	AR	7,101	AR	5,203	AR	7,112
[7] POLENERGIA	AR	3,824	AR	3,069	AR	4,881	AR	3,345
[8] TAURON	AR	1,510	AR	1,812	AR	8,597	AR	9,994
TOTAL		18,622		27,013		36,145		35,118

Legend:

AR – Additional Report (CSR, Integrated Report, Non-financial Report)

EM – Environmental Matters

SI – Supplementary information in Management Commentary

NFS – Non-financial statement in Management Commentary

Source: authors' own elaboration.

As indicated in Table 6, the description of the environmental impact exerted by the energy companies' activities varies in length, from year to year. An increasing number of words used to create impact in the subsequent years was also observed. Short descriptions were found for those companies which merely indicate their compliance with the environmental regulations applicable (e.g., Będzin, PAK). On the other hand, those companies which attempt to present their operations in the best possible light use longer descriptions, mainly of the activities aimed at protecting natural resources (e.g., Energa, PGE). The form of the environmental disclosures also varies. Some enterprises prepare additional reports containing this type of information, while others present environmental information in the management report in the form of a non-financial statement attached to the document. All of these forms are permitted by applicable legal regulations, and the choice is up to the entity. Companies can change the way environmental information is published for the following year, which affects the transparency and comparability of the environmental disclosures made. One company (Będzin) was not obliged to publish non-financial information statements or separate reports since it is considered a small business (under 500 employees). It disclosed a very small range of non-financial information in its management report, which primarily concerned the company's compliance with the legal regulations in this area (see Tables 6 and 7).

In the next step, using content analysis, the non-financial disclosures were examined in accordance with the categorisation keys adopted in Table 2. The following

assumptions were made: 0 when the company did not present any information; 1 when the company disclosed information; and in certain sections, from 2 to 6 to assess the scope of the information disclosed. The results are presented in Table 7.

Table 7. The scope of the environmental information presented in the reports (according to Table 2)

Company	2017	2018	2019	2020
[1] BĘDZIN	1	1	1	2
[2] ENEA	12	9	16	16
[3] ENERGA	17	16	17	18
[4] KOGENERACJA	10	17	12	13
[5] PAK	3	14	11	11
[6] PGE	11	14	15	15
[7] POLENERGIA	9	14	9	12
[8] TAURON	18	17	18	18

Source: authors' own elaboration.

Each entity could score a total of 24 points for the scope of the environmental disclosures, and as shown in Table 7, the scope differed in the period under examination. The decision on what information is to be disclosed was made by the companies themselves. Moreover, the companies were able to change the number of KPIs published on a period-to-period basis. This indicates the use of environmental reporting to create an image of the natural-environmentally beneficial activities they carried out. Selective treatment of indicators, incomplete reporting, and the lack of comparability to previous periods were identified by Sikacz (2017) and Waniak-Michalak et al. (2018).

3.2. Qualitative content analysis of environmental reporting

The second stage of the research involved assessing the quality of the environmental disclosures made. First, the relationship between the quality index (see Table 8) and selected variables was examined (see Table 4).

Table 8. Quality indices for 2017–2020

Company	2017	2018	2019	2020
[1] BĘDZIN	0.10	0.10	0.10	0.20
[2] ENEA	0.40	0.60	0.60	0.50
[3] ENERGA	0.60	0.80	0.60	0.80
[4] KOGENERACJA	0.50	0.40	0.50	0.50
[5] PAK	0.30	0.20	0.30	0.30

cont. tab. 8

Company	2017	2018	2019	2020
[5] PAK	0.30	0.20	0.30	0.30
[7] POLENERGIA	0.30	0.50	0.50	0.40
[8] TAURON	0.70	0.70	0.70	0.70

Source: authors' own elaboration.

Będzin made the smallest number of environmental disclosures, as the company was not obliged to do so; hence it obtained the lowest disclosure index. For this reason, the relationship between the disclosure quality index and the independent variables was omitted in the analysis.

The one-way Anova analysis was used to verify Hypothesis 1. First, the Statistica package was used to check whether the assumptions of variance equality and distribution normality of the variables were met. Based on the categorised charts generated by the package, it was found that the dependent variable complies with the normal distribution within the groups analysed. The Levene and Brown-Forsythe tests showed no grounds to reject the assumption of equal variance. The p-value was 0.409665 and 0.395833, respectively. In the next step, variance analysis was performed. The results are presented in Table 9.

Table 9. H₁ verification – one-way Anova analysis

Variable	Variance analysis							
	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Quality index	0.330835	1	0.330835	0.473450	26	0.018210	18.16816	0.000235

Source: outcomes generated by the Statistica package.

At a significance level of 0.05 (see Table 9), H₀ was rejected in favour of the alternative hypothesis that there is a relationship between the quality index and the form of environmental information reporting. The parameter assessment results additionally indicate that the quality index takes lower values for the environmental disclosures made in management reports (the expected quality index for environmental disclosures made in management report statements is 0.37, and 0.61 for environmental disclosures made in additional/supplementary reports)

The Pearson correlation rank coefficient were used to verify the next three research hypotheses (listed in Table 5). The results are presented in Tables 10.

Table 10. H₂–H₄ Hypotheses verification – Pearson's correlation coefficients

H ₂	H _{2/0} There is no relationship between the scope of environmental disclosures and the quality thereof H _{2/1} There is a relationship between the scope of environmental disclosures and the quality thereof								
	r(X,Y)	r ²	t	p	N	Const.: Y	Slope: Y	Const.: X	Slope: X
Scope of disclosure	0.624201	0.389627	4.073928	0.000385	28	6.5444	13.250	0.134549	0.029405
H _{2/0} was rejected in favour of H _{2/1}									
H ₃	H _{3/0} There is no relationship between the number of words describing environmental aspects and the quality of environmental disclosures H _{3/1} There is a relationship between the number of words describing environmental aspects and the quality of environmental disclosures								
	r(X,Y)	r ²	t	p	N	Const.: Y	Slope: Y	Const.: X	Slope: X
Number of words	0.507649	0.257708	3.004437	0.005822	28	225.64	7139.076	0.389511	0.000036
H _{3/0} was rejected in favour of H _{3/1}									
H ₄	H _{4/0} There is no relationship between the number of difficult words used to describe environmental aspects and the quality of environmental disclosures H _{4/1} There is a relationship between the number of difficult words used to describe environmental aspects and the quality of environmental disclosures								
	r(X,Y)	r ²	t	p	N	Const.: Y	Slope: Y	Const.: X	Slope: X
Number of difficult words	0.365314	0.133454	2.001047	0.055928	28	56.220	287.522	0.438126	0.000464
There are no grounds to reject H _{4/0}									

Source: outcomes generated by the Statistica package.

The Pearson correlation coefficients given in Table 10 confirmed a high positive correlation between the quality index and the disclosure scope, and between the quality index and the number of words in a report. The null hypotheses formulated for hypotheses H₂ and H₃ were therefore rejected in favour of the alternative hypotheses (see Table 10). This means that the quality index increase is largely influenced by an increase in the scope of environmental disclosures (Pearson's r is high, at 0.624201). The number of words used to describe the environmental aspects associated with the functioning of the entities examined (r is 0.507649) has a slightly smaller impact on the increase in the quality index. The quality index is not affected by the number of difficult words used in the descriptions, however ($p = 0.055928$).

The Spearman rank correlation coefficients in Table 11 also confirmed the same relationships between the quality index and the variables examined as the Pearson's correlation.

Table 11. H₂–H₄ Hypotheses verification – Spearman rank coefficient

Couples of variables	R Spearman	t(N-2)	p
quality index & scope of disclosures	0.650730	4.369875	0.000177
quality index & number of words	0.456461	2.615924	0.014623
quality index & number of difficult words	0.343178	1.863014	0.073795

Source: outcomes generated by the Statistica package.

Spearman's coefficients for H₂ and H₃ are high, indicating a significant relationship between the quality index and the scope of environmental information and the number of words. However, in the case of H₄, the quality index is not influenced by the number of difficult words ($p = 0.073795$).

For the word count, the source texts of the reports on environmental issues, in whatever form they were presented in, were retrieved and reprocessed to a .doc-readable textual format. This allowed further examination of the source text using the word count device. Any retrieval of the source text from the original report necessitated a reduction in the number of characters and words used. As mentioned earlier, any unnecessary header, footers and margin marking were removed so that the original text could be converted to a readable format. The numbers of the word characters left of the proper word count analysis are shown in Table 12.

Table 12. Reduction of characters and words in the source texts, 2017–2020

2017						
Company	Total # of				Characters net/raw coefficient	Words net/raw coefficient
	characters in raw report	words in raw report	characters net in report	words net in report		
	(%)					
[1] BĘDZIN	3,080	395	2,993	383	97.2	97.0
[2] ENEA	17,971	2,189	14,779	2,049	82.2	93.6
[3] ENERGA	44,121	8,159	30,074	3,903	68.2	47.8
[4] KOGENERACJA	8,720	1,194	7,689	979	88.2	82.0
[5] PAK	18,790	2,363	18,476	2,327	98.3	98.5
[6] PGE	29,156	4,040	28,193	3,647	96.7	90.3
[7] POLENERGIA	32,541	4,423	28,969	3,824	89.0	86.5
[8] TAURON	12,270	1,681	11,914	1,510	97.1	89.8
TOTAL/AVERAGE	166,649	24,444	143,087	18,622	85.9	76.2

2018						
Company	Total # of				Characters net/raw coefficient	Words net/raw coefficient
	characters in raw report	words in the report	characters net in report	words net in report		
	(%)					
[1] BĘDZIN	3,919	515	3,818	505	97.4	98.1
[2] ENEA	20,399	2,739	17,817	2,338	87.3	85.4
[3] ENERGA	69,610	10,483	53,414	6,846	76.7	65.3
[4] KOGENERACJA	14,351	1,878	13,388	1,674	93.3	89.1
[5] PAK	31,007	3,959	28,765	3,668	92.8	92.6
[6] PGE	65,795	8,969	54,314	7,101	82.6	79.2
[7] POLENERGIA	22,993	3,102	22,698	3,069	98.7	98.9
[8] TAURON	15,223	1,881	14,739	1,812	96.8	96.3
TOTAL/AVERAGE	243,297	33,526	208,953	27,013	85.9	80.6
2019						
Company	Total # of				Characters net/raw coefficient	Words net/raw coefficient
	characters in raw report	words in raw report	characters net in report	words net in report		
	(%)					
[1] BĘDZIN	3,940	510	3,841	497	97.5	97.5
[2] ENEA	27,365	3,794	22,320	3,155	81.6	83.2
[3] ENERGA	74,741	11,104	60,106	7,687	80.4	69.2
[4] KOGENERACJA	21,407	2,963	19,213	2,552	89.8	86.1
[5] PAK	30,020	3,860	28,143	3,573	93.7	92.6
[6] PGE	46,432	6,052	41,360	5,203	89.1	86.0
[7] POLENERGIA	35,789	4,942	35,285	4,881	98.6	98.8
[8] TAURON	59,532	9,095	57,172	8,597	96.0	94.5
TOTAL/AVERAGE	299,226	42,320	267,440	36,145	89.4	85.4
2020						
Company	Total # of				Characters net/raw coefficient	Words net/raw coefficient
	characters in raw report	words in raw report	characters net in report	words net in report		
	(%)					
[1] BĘDZIN	8,147	1,102	7,953	1,078	97.6	97.8
[2] ENEA	36,872	5,174	3,536	4,956	95.8	95.8
[3] ENERGA	54,902	8,651	40,530	5,180	73.8	59.9
[4] KOGENERACJA	8,733	1,103	8,220	1,026	94.1	93.0

cont. tab. 12

2020						
Company	Total # of				Characters net/raw coefficient	Words net/raw coefficient
	characters in raw report	words in raw report	characters net in report	words net in report		
					(%)	
[5] PAK	20,658	2,679	19,333	2,427	93.6	90.6
[6] PGE	53,213	7,250	52,235	7,112	98.2	98.1
[7] POLENERGIA	25,865	3,375	25,626	3,345	99.1	99.1
[8] TAURON	81,347	10,990	75501	9,994	92.8	90.9
TOTAL/AVERAGE	289,737	40,324	264,734	35,118	91.4	87.1

Source: the authors' own elaboration based on the research evidence.

As Table 12 suggests, there has been a general trend of increasing the number of characters and words over the studied period, finally levelling at around 260,000 characters and 36,000 words in total in their net reports in 2020. Various attitudes to the wordiness of the reports may also be noticed between companies. The 'Big Four' in the Polish energy sector, i.e., Enea, Energa, PGE, and Tauron, were always excessively verbose, while the 'Other Four' were usually more constrained. Both the net/raw coefficients (for the number of characters and words, respectively) clearly show that, on average, there was a reduction of around 14% in 2017 and 2018, down to less than 9% in 2020 in the case of characters, and always more than 10% in the case of words in each year, with a tendency to decrease. The most significant reduction was observed for Energa each year. This may be explained by the fact that the company has always produced attractive reports with countless beautifiers such as headers, footers, tables, endnotes, side marks, and quotations. All those items were completely removed to get to the mere text.

As mentioned earlier in the methodology section, the samples of both GWs and BWs were selected according to their linguistic meaning in Polish usage. After all prefixes and suffixes were removed, the root word (the inflective theme of the word) was left for the final word count for every single word under examination. Any possible dubious meanings were carefully identified and then eliminated via detailed linguistic verification. Thus, we believe the correct samples were selected, although it undoubtedly involved a handful of our own linguistic habits and obsessions. Nevertheless, they are manifestations of the general condition, good or bad, of our Polish speech rather than our personal deficiencies.

In the last phase of the research, six sets of analyses were carried out, each of which concerned one of the matters under consideration. In each case, the frequency of the top six good and top six bad words was measured from all the sets of words considered to convey good or bad information.

Initially, 15 good words and 13 bad words were isolated. Then, in the set of the good words, three were repeated only a few times in the totality of the words used in the reports examined, meaning up to 12 good words were used repeatedly. In the set of bad words, four were not used at all, leaving only nine words which were used frequently. Finally, Table 13 presents the occurrence frequency of the top six words associated with environmental matters, representing each set separately, along with their repetition ratios expressed in percentages. All the words were examined after omitting inflection suffixes.

Table 13. Repetition frequency of top six ‘Good Words’ (GWs) and top six ‘Bad Words’ (BWs)

Words with a positive connotation (GWs)	Frequency of use in net texts				Words with a negative connotation (BWs)	Frequency of use in net texts			
	2017	2018	2019	2020		2017	2018	2019	2020
<i>środowisk</i> (environment-)	264	353	268	325	<i>emis</i> (emissi-)	158	168	285	352
<i>ochron</i> (protect-)	87	105	116	149	<i>odpad</i> (waste)	119	131	102	176
<i>zmniejsz</i> (minim-)	37	52	66	63	<i>zanieczyszcz</i> (pollut-)	33	42	43	42
<i>modernizac</i> (moderni-)	34	53	50	54	<i>kar</i> (penalt-)	34	28	36	35
<i>popraw</i> (enhance-)	23	33	30	29	<i>niebezpiecz</i> (danger-)	18	9	33	13
<i>ekolog</i> (ecolog-)	20	31	26	25	<i>strat</i> (loss-)	10	19	16	32
Total # of the top frequent GWs	465	627	556	645	Total # of the top frequent BWs	372	415	515	650
Total # of all GWs	551	708	642	736	Total # of all BWs	385	426	522	663

Source: authors’ own elaboration based on the research evidence.

As Table 13 shows, the good words most frequently used were “environment” and “protection”, which yielded impressive numbers of occurrences in the entire wordcounts for all reports in all years. In Polish, they form an almost magical phrase, “ochrona środowiska” (“environmental protection”), which seemed to be the key expression for conveying good information to the public about the good intentions expressed by heavy producers of electric power from coal. Those two words taken together account for 63% (1,667/2,637) of the total number of all good words in the entire period under consideration. Table 14 draws a more detailed picture of the frequency of GWs and BWs.

Table 14. Repetition frequency of top 6 ‘Good Words’ (GW) and top 6 ‘Bad Words’ (BW) by companies

Company	Total # of words in report	Frequency of		Per cent of	
		the top 6 GW	the top 6 BW	GW in total word count	BW in total word count
2017					
[1] BĘDZIN	383	15	13	3.92	3.39
[2] ENEA	2,049	42	56	2.05	2.73
[3] ENERGA	3,903	93	72	2.38	1.84
[4] KOGENERACJA	979	22	25	2.25	2.55
[5] PAK	2,327	51	86	2.19	3.70
[6] PGE	3,647	111	63	3.04	1.73
[7] POLENERGIA	3,824	70	31	1.83	0.81
[8] TAURON	1,510	61	26	4.04	1.72
TOTAL/AVERAGE	18,622	465	372	2.50	2.00
2018					
[1] BĘDZIN	505	15	13	2.97	2.57
[2] ENEA	2,338	68	64	2.91	2.74
[3] ENERGA	6,846	141	74	2.06	1.08
[4] KOGENERACJA	1,674	17	14	1.02	0.84
[5] PAK	3,668	74	107	2.02	2.92
[6] PGE	7,101	189	105	2.66	1.48
[7] POLENERGIA	3,069	52	19	1.69	0.62
[8] TAURON	1,812	71	19	3.92	1.05
TOTAL/AVERAGE	27013	627	415	2.57	1.54
2019					
[1] BĘDZIN	497	17	15	3.42	3.02
[2] ENEA	3,155	71	59	2.25	1.87
[3] ENERGA	7,687	162	135	2.11	1.76
[4] KOGENERACJA	2,552	56	47	2.19	1.84
[5] PAK	3,573	70	66	1.96	1.85
[6] PGE	5,203	57	74	1.10	1.42
[7] POLENERGIA	4,881	67	26	1.37	0.53
[8] TAURON	8,597	56	93	0,65	1.08
TOTAL/AVERAGE	36,145	556	374	1.54	1.42
2020					
[1] BĘDZIN	1,078	22	31	2.04	2.88
[2] ENEA	4,946	109	167	2.20	3.37

Company	Total # of words in report	Frequency of		Per cent of	
		the top 6 GW	the top 6 BW	GW in total word count	BW in total word count
[3] ENERGA	2,301	108	68	2.08	1.31
[4] KOGENERACJA	1,026	31	29	3.02	2.83
[5] PAK	2,427	53	83	2.18	3.42
[6] PGE	7,112	105	146	1.48	2.05
[7] POLENERGIA	3,345	63	19	1.88	0.57
[8] TAURON	9,994	154	107	1.54	1.07
TOTAL/AVERAGE	35,118	645	650	1.84	1.85

Source: authors' own elaboration based on the research evidence.

A general observation is that the wordiness of the environmental reports rose during the period under consideration, from over 16,000 words to around 35,000–36,000. But conversely, a considerable fall in the number of words can be observed, specifically in the case of Energa. This change in the disclosure policy may be attributed to the ownership changes that occurred in 2020 when the company was merged with the Orlen Group.

Attention should be especially paid to the percentage of GWs in the total word count. For both Będzin and Tauron, in both 2017 and 2018, it is around 3% or even 4%. Although those two companies were not at the head of the GW percentage count in general, even in their short environmental messages for those years, they were able to convey good information to the readers. This situation changes for Tauron in both 2019 and 2020 due to a significant rise in its report wordiness. Finally, in just one case, i.e., PAK, the number of BWs was larger than the number of GWs (except for 2019). It is not surprising because this company produces energy from opencast brown coal, thus, causing much environmental damage. This explains why the company had to mainly use words like “pollution”, “burdensome”, and “dirty” in its environmental report. As such, the thesis about impression management cannot be proved based on the rhetoric vehicle employed. Quite the contrary; it can be called a “real-made impression management”. It is also likely that the management boards, aware of the possible bad perception of its attempts to manage the decisively unfavourable images of the companies, neither knowingly tried to bend the truth nor wanted to expose their companies to criticism.

With regard to all companies, the environmental disclosures brought a positive split between GWs and BWs (2017: 0.50 = 2.50–2.00; 2018: 1.03 = 2.57–1.54; 2019: 0.12 = 1.54–1.42, and 2020: –0.01 = 1.84–1.85) with only one exception for 2020. So there were usually more GWs than BWs, and both numbers had a tendency to rise in line with the increase in length of the reports. This may result from the obvious necessity to deliver as much relevant information about environmental matters as possible, especially from the perspective of the companies from the energy sector, which is extremely vulnerable to external criticism or

even attacks for their “dirty” production. The use of a relatively high number of GWs and a low number of BWs mainly resulted from the complexity of the environmental matter itself and the managers’ will to position their companies’ views in a positive spotlight. Another question remains evident: abstracting from the semantic and syntactic problems of thought representation, the companies used advanced impression management techniques, as described in Tables 15 and 16.

In the last stage of the research, the environmental information published was analysed in terms of the impression management techniques used. The purpose was to show how companies present their activities to shape the report users’ impression. Accordingly, attention was paid to the style, drawings, tables, and use of phrases with positive and negative connotations, taking into account the context in which they had been used. Selected examples of impression management tactics used that result from managerial behaviour concealment are presented in Table 15.

Table 15. The impression management techniques used in environmental information disclosures that result from managerial behaviour concealment

Company	Short description
<i>Thematic manipulation</i>	
ENEA	When describing environmental issues, the company emphasizes these activities and the results, indicating a reduction of its negative impact on the natural environment, e.g., information on new environmental investments and reduced CO ₂ emissions per 1 MWh of the energy generated. On the other hand, it neglects the information that testifies to the increasing impact of its activities, e.g., an increase in waste production (brief information was provided under a table; information on the increase in hazardous waste production was not included; no comparison with the previous year)
ENERGA	The company mentions those activities that helped reduce its impact on the natural environment. This also applies to those areas that indicate an increase in negative impact, e.g., in the description on waste generation, they indicate the units within the Group that reduced waste production compared to the previous year
PAK	As the biggest Polish producer of energy from brown coal, the company focuses its description on the quantities of the waste slag and the bottom ash from the boiler rooms, as well as on the soil reclamation activities, along with the number of the trees planted. The company attributes its decreased CO ₂ emission to the shutdown of one of its power plants, which is true
PGE	The company mainly describes the activities to reduce its negative impact on the natural environment. They concern initiatives to protect air, soil, biodiversity and water. There is little information about increasing the impact on the environment. It usually includes one sentence (sometimes two) provided under a table containing information to explain the situation

Company	Short description
<i>Visual and structural manipulation</i>	
ENEA	To emphasize its beneficial activity, a bold text was used in the description; meanwhile, to indicate the company's negative aspects, a much smaller font was used than in the rest of the text
ENERGA	Drawings showing the increase in waste production have the same colour as those showing the reduction of the negative impact on the environment. Bold font was used to highlight the positive environmental activity
KOGENERACJA	Manipulation is used, with two neighbouring graphs on which excess CO ₂ emissions, three times over the quota allowed in 2017 and 2018, are covered by the lower emissions of other pollutants (SO ₃ , NO _x , and dust)
TAURON	Emphasis is put on the visual aspects of the report, and emission tables are separate from the descriptions. This way of presenting environmental information distracts the reader from the content of the information
ENEA ENERGA TAURON POLENERGIA PAK PGE	The use of infographics, i.e., illustrations, annotated charts, and flow charts, to highlight the positive environment-related actions taken by the company. Bold text is used in the infographics to present the company in the most favourable light
<i>Performance comparisons</i>	
ENERGA	By comparing the consumption of raw materials, the company indicates its total reduction (renewable and non-renewable raw materials). However, it does not mention that the main reason for the reduction is the use of renewable raw materials. Consumption of hard coal was higher than in the previous period
PGE	The description in the "Research and development" section indicates a reduction of sulphur dioxide emission by 88%, nitrogen oxide by 45%, and dust by 97% in the Bełchatów Power Plant compared to the 1990s. A potential reader of this part of the report would also expect such results for the most recent period. However, most recent tables comparing the emissions of these gases to the atmosphere in 2017–2018 show an increase
<i>Selectivity</i>	
ENEA	In the narrative, the company only focuses on describing the positive aspects associated with reducing its environmental impact, omitting those activities that show an increase (e.g., an increase in the production of waste)
POLENERGIA	The wording used in the report focuses on the positive aspects only, strongly stressing the positive outcomes of the inspections performed by supervising bodies. Since the company mostly uses renewable sources, the report constantly emphasises how beneficial clean energy is. At the end of the report, however, it discloses its emission data

Source: authors' own elaboration.

In addition to the impression management techniques listed in Table 15, the content analysis indicated the use of attribution to explain the companies' negative and positive results. At the same time, managers attributed responsibility for the deterioration of environmental performance to external factors rather than the lack of decisions to increase environmental protection measures. There are also examples of such practices on the part of the energy companies, as presented in Table 16.

Table 16. The use of attribution in the energy companies' environmental disclosures

Company	Short description
ENEA	The main reasons for the increase in waste included the geological and mining conditions and the increased number of preparatory works, including reconstructing mining excavations
PGE	The company indicates a decrease in the quality of the coal used as the reason for the increase in the particulate matter index. At the same time, it states that similar increases and decreases already occurred in previous years (and therefore should be considered normal)
PAK	A great deal of the environmental information provided was focused on description of the legal constraints, which the negative message is mostly attributed to. On the other hand, the positive information concerning waste management is attributed to managerial activity. A similar impression is exerted with regard to the inspections carried out by external supervising authorities

Source: authors' own elaboration.

As shown in Tables 15 and 16, the companies use different impression management techniques when describing their environmental performance. Nonetheless, in the descriptions that address environmental issues, all the companies used a positive tone when referring to the actions taken to reduce the negative impact on the natural environment. As Henry states, "a more positive tone can be achieved by focusing on positive outcomes and/or by describing outcomes in a positive way" (2006, p. 377). The companies unduly emphasised the favourable activities undertaken to reduce their impact on the natural environment, using several words that have positive connotations. The selected words were presented in Table 13.

Conclusions

The results indicate that the scope and the form of the environmental disclosures published by energy-sector companies are compliant with the applicable legal regulations. Non-financial information was presented either in a separate supplementary/additional report or in a statement of non-financial information that constituted part of the management report. The requirements regarding the minimum

scope of disclosures in this area were also met, although the scope of the environmental information presented by individual companies varied. The companies themselves were the decision-makers as to what information was to be published, within the binding minimum. What is more, some of these companies changed the number of KPIs or the way they were presented in the report. Such practices evidence the use of environmental reporting to create a positive image of the activities carried out by energy companies.

The results also prove the diverse quality of the environmental disclosures made, with the levels of the quality index varying over the analysed period (see Table 8). From year to year, some of the companies, e.g., Enerna, Enea and Tauron, increased the transparency of the environmental information presented by including tables and comparing the information with the previous period. However, none of the analysed companies subjected the information published to external audit, which raises doubts about the credibility of such disclosures. The verification of the research hypotheses confirms that there is a relationship between the disclosure quality index and factors such as the form of the report, the scope of the environmental information presented, and the number of words used. By contrast, H₄, which refers to the relationship between the disclosure quality index and the number of difficult words describing the environmental aspects associated with company operations, was not confirmed. The greater the scope of disclosures and the broader the description of the company's environmental activities, the better the disclosure quality index.

Moreover, the analysis of the non-financial information published identified the use of impression management techniques. Primarily, the excessive emphasis of the beneficial aspects of business operations compared to the unfavourable ones was noted. The tactic of praising the companies' efforts to protect the environment was aimed at shaping the readers' positive impression. In addition, the analysis revealed various explanations for underplaying the importance of the increased environmental impact, as well as the lack of transparency of the charts, the use of a smaller font for the activities that negatively affect the environment and bold font for pro-environmental activities, as well as lack of or selective comparison of the results with those recorded in preceding periods.

In the case of the clean energy producer, the report published was beautified by emotive pictures of chicks in nests, clean sea waters, and flourishing meadows, taken by drone cameras and sharpened with graphics software, all done to impress the reader with the ideal nature of the surroundings. On the other hand, the reports published by non-clean energy producers were beautified without the use of such impression-enhancing techniques.

Following the above, the conclusion is that the more a company is oriented toward clean energy production, the more elaborate the report and the more idealistic the world presented in the report. Conversely, if energy is produced based on conventional resources, the information tends to focus on legal restrictions, hiding the information within verbose paragraphs and misleading graphs or numerous tables filled with detailed data. These aspects were addressed by Boiral (2013) and Boiral and Henri (2015).

Another aspect observed concerns the role the company plays in the energy market. The companies that are the country's strategic energy distributors and retailers tend to overload the readers with information on all aspects compared to those that are not. This seems to be in accordance with the general trend of providing overwhelming information that cannot be digested by the average stakeholder. Wordy pieces of text, compound sentences, words longer than four syllables, repeated good words, omitted bad words, the portraying of a perfect world – that is the picture of modern non-financial corporate reporting.

Additional observation concerns the format and the layout of the reports. Generally, the wealthier the company, the more sophisticated and elaborate the report. Here, the techniques include excessively perfect language and phrasing adopted with an attractive visual style.

Our research is limited due to the sample selected, i.e., only the stock-exchange-listed companies from the energy sector in Poland. As such, there is a need to investigate whether other stock-exchange-listed companies use impression management techniques in their non-financial reporting. Furthermore, in a sectoral approach, comparing the future research results for all companies would allow the differences in the impression management tools to be identified.

The disclosure quality index, the structure of which is based on the authors' experience and literature review (e.g., Krasodomska, Zieniuk, 2021; Krasodomska et al., 2021; Zarzycka, Krasodomska, 2021), is another limitation. The choice of the parameters for creating the index is subjective, however.

Another serious limitation may include the way the testing was performed. In our research, extensive text conversion and formatting had to be performed to create a text that could be uploaded into the computer software used. Although every attempt was made to create the right coding matrix, errors related to measurement and coding resulting from text imperfections, and thus affecting the conclusions, may have appeared.

Another point addressed in the linguistic analysis is the choice of wording or phrasing to be researched. The (good and bad) words picked for word count testing could have been biased by the authors' subjective perception and language habits, although elimination of any dubious or blurred meanings of the words verified was carried out with great care and attention. To overcome this problem, prior to the word count analysis, the entire vocabulary of good and bad words was reconciled and confronted with the authors' linguistic and rhetoric habits and obsessions.

Further research in this area is just a matter of time, because the increasingly plentiful and excessively wordy management reports, additionally beautified with fountains of fresh and breath-taking visualisations, will definitely try to distract the readers' perception from the real state of affairs, with regard to various matters, not only to those related to environmental or social matters. Applying sophisticated software and embedding reports in an interactive imagining environment will likely be oriented not only at presenting clear information but also at manipulation.

References

- Aerts W. (2005), *Picking up the pieces: impression management in the retrospective attributional framing of accounting outcomes*, "Accounting, Organizations and Society", 30 (6), pp. 493–517.
- Altaweel M., Bone Ch. (2012), *Applying content analysis for investigating the reporting of water issues*, "Computers Environmental and Urban Systems", 36 (6), pp. 599–613.
- Baird J.E., Zelin R.C. (2000), *The effects of information ordering on investor perceptions: an experiment utilizing presidents' letters*, "Journal of Financial and Strategic Decisions", 13 (3), pp. 71–80.
- Balicka A. (2015), *Informacja środowiskowa o charakterze finansowym w zewnętrznej sprawozdawczości przedsiębiorstwa*, "Zeszyty Naukowe Uniwersytetu Szczecińskiego", 873, "Finanse. Rynki Finansowe. Ubezpieczenia", 77, pp. 469–478.
- Barkemeyer R., Comyns B., Figge F., Napolitano G. (2014), *CEO statements in sustainability reports: Substantive information or background noise?*, "Accounting Forum", 38, pp. 241–257.
- Beattie V., Jones M.J. (2002), *Measurement distortion of graphs in corporate reports: an experimental study*, "Accounting, Auditing & Accountability Journal", 15 (4), pp. 546–64.
- Bek-Gaik B., Rymkiewicz B. (2014), *Spółeczna odpowiedzialność przedsiębiorstw a finansowe miary dokonań*, "Zeszyty Naukowe Uniwersytetu Szczecińskiego", 804, "Finanse. Rynki Finansowe. Ubezpieczenia", 67, pp. 137–151.
- Bek-Gaik B., Rymkiewicz, B. (2015), *Wpływ CSR na finansowe miary dokonań jednostek*, "Zeszyty Naukowe Uniwersytetu Szczecińskiego", 854, "Finanse. Rynki Finansowe. Ubezpieczenia", 73, pp. 151–165.
- Berelson B. (1952), *Content Analysis in Communication Research*, Free Press, Glencoe.
- Boiral O. (2013), *Sustainability reports as simulacra? A counter-account of A and A+ GRI reports*, "Accounting, Auditing & Accountability Journal", 26 (7), pp. 1036–1071.
- Boiral O., Henri J.F. (2015), *Is sustainability performance comparable? A study of GRI reports of mining organizations*, "Business & Society", 56 (2), pp. 283–317.
- Boiral O., Heras-Saizarbitoria, I., Brotherton, M. C. (2019), *Assessing and improving the quality of sustainability reports: the auditors' perspective*, "Journal of Business Ethics", 155 (3), pp. 703–721.
- Calabrese A., Costa R., Levaldi N., Menichini T. (2017), *To be, or not to be, that is the Question. Is Sustainability Report Reliable?*, "European Journal of Sustainable Development", 6 (3), pp. 519–526.
- Cho Ch.H., Roberts R.W., Patten D.M. (2010), *The language of US corporate environmental disclosure*, "Accounting, Organizations and Society", 35, pp. 431–443.
- Cho Ch.H., Freedman M., Patten D.M. (2012a), *Corporate disclosure of environmental capital expenditures A test of alternative theories*, "Accounting, Auditing & Accountability Journal", 25 (3), pp. 486–507.
- Cho Ch.H., Michelon G., Patten D.M. (2012b), *Impression Management in Sustainability Reports: An Empirical Investigation of the Use of Graphs*, "Accounting and the Public Interest American Accounting Association", 2, pp. 16–37.
- Cho Ch.H., Patten D.M., Roberts R.W. (2014), *Environmental Disclosures and Impression Management*, [in]: Hart R.P. (ed.), *Communication and Language Analysis in the Corporate World*, IGI-Global Publishers, Hershey, PA.
- Courtis J.K. (2004), *Effective communication requires that content be relevant to user needs. Corporate report obfuscation: artefact or phenomenon?*, "The British Accounting Review", 36, pp. 291–312.

- Diouf, D., Boiral O. (2017), *The quality of sustainability reports and impression management. A stakeholder perspective*, "Accounting, Auditing & Accountability Journal", 30 (3), pp. 643–667.
- Du Toit, E. (2017), *The readability of integrated reports*, "Meditari Accountancy Research", 25 (4), pp. 629–653.
- Dyduch J. (2017), *Zmiany poziomu ujawnień środowiskowych informacji finansowych w raportach rocznych wybranych spółek publicznych*, "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", 479, pp. 34–43.
- Falschlunger L.M., Eisl Ch., Losbichler H., Greil A.G. (2015), *Impression management in annual reports of the largest European companies: a longitudinal study on graphical representations*, "Journal of Applied Accounting Research", 16 (3), pp. 383–399.
- Gruszczyński W., Broda B., Nitoń B., Ogrodniczuk M. (2015), *W poszukiwaniu metody automatycznego mierzenia zrozumiałości tekstów informacyjnych*, "Poradnik Językowy", 2, pp. 9–22.
- Guthrie J., Abeysekera I. (2006), *Content Analysis of Social, Environmental Reporting: What Is New?*, "Journal of Human Resource Costing & Accounting", 10 (2), pp. 114–125.
- Hąbek P. (2015), *Sprawozdawczość przedsiębiorstw w zakresie ich społecznej odpowiedzialności. Ocena jakości raportów CSR*, Wydawnictwo CeDeWu, Warszawa.
- Higgins C., Walker R. (2012), *Ethos, logos, pathos: strategies of persuasion in social/environmental reports*, "Accounting Forum", 36 (3), pp. 194–208.
- Holsti O.R. (1969), *Content Analysis for the Social Sciences and Humanities*, Reading, Addison-Wesley, MA.
- Hooghiemstra R. (2000), *Corporate communication and impression management – new perspectives why companies engage in corporate social reporting*, "Journal of Business Ethics", 27 (1), pp. 55–68.
- Jaworska E., Bucior G. (2017), *Self-Presentation Enterprise Impression Management as Part of External reporting*, "Research Papers of Wrocław University of Economics", 47, pp. 150–159.
- Jaworska E., Bucior G. (2018), *Attribution as impression management strategy in external reporting – example of state-owned enterprise with majority state ownership*, "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", 514, pp. 128–137.
- Jaworska E., Bucior G. (2019), *Structural manipulation as part of impression management in the president's letters to shareholders of the biggest Polish enterprises*, "Zeszyty Teoretyczne Rachunkowości", 104 (160), pp. 55–83.
- Jones M.J. (2011), *The nature, use and impression management of graphs in social and environmental accounting*, "Accounting Forum", 35 (1), pp. 75–89.
- Kanbaty M., Hellmann A., He L. (2020), *Infographics in corporate sustainability reports: Providing useful information or used for impression management?*, "Journal of Behavioral and Experimental Finance", 26, pp. 1–14.
- Kobiela-Pionner K. (2018), *Opowiedzieć historię. Rola narracji w sprawozdaniu zintegrowanym – studium przypadku Novo Nordisk A/S*, "Studia i Prace Kolegium Zarządzania i Finansów", 163, pp. 99–126.
- Krasodomska J. (2014), *Informacje niefinansowe w sprawozdawczości spółek*, Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie, Kraków.
- Krasodomska J., Simnett R., Street D. (2021), *Extended External Reporting Assurance: Current Practices and Challenges*, "Journal of International Financial Management and Accounting", 32 (1), pp. 104–142.

- Krasodomska J., Zieniuk P. (2021), *Assurance on non-financial reporting: theoretical underpinning, standards and practices of companies operating in Western and Eastern Europe*, "Zeszyty Teoretyczne Rachunkowości", 45 (1), pp. 53–74.
- Krippendorff K. (2004), *Content Analysis: An Introduction to its Methodology*, Sage Publications, Thousand Oaks, CA.
- Leary M.R., Kowalski R.M. (1990), *Impression management: a literature review and two-component model*, "Psychological Bulletin", 107 (1), pp. 34–47.
- Maształecz M. (2016), *O narracjach w rachunkowości czyli jak zarządzać wrażeniem*, "Studia Ekonomiczne. Zeszyty Naukowe UE w Katowicach", 274, pp. 22–23.
- Melloni G., Stacchezzini R., Lai A. (2016), *The tone of business model disclosure: an impression management analysis of the integrated reports*, "Journal of Management and Governance", 20, pp. 295–320.
- Mayring P. (2014), *Qualitative Content Analysis Theoretical Foundation, Basic Procedures and Software Solution*, Klagenfurt.
- Merkel-Davies D.M., Brennan N.M., McLeay S.J. (2011), *Impression management and retrospective sense-making in corporate narratives: a social psychology perspective*, "Accounting, Auditing and Accountability Journal", 24 (3), pp. 315–344.
- Misani N. (2017), *The Role of Motive Attributions of Corporate Social Responsibility Activities in the Development of Stakeholder Trust*, "Proceedings of the International Association for Business and Society", 28, pp. 191–203.
- Paszkievicz A., Szadziewska A. (2011), *Przejawy społecznej odpowiedzialności w działalności przedsiębiorstw*, "Prace i Materiały Wydziału Zarządzania UG", 1 (1), pp. 77–90.
- Rahman S. (2012), *Impression Management Motivations, Strategies and Disclosure Credibility of Corporate Narratives*, "Journal of Management Research", 4 (3), pp. 1–14.
- Rodrigue M., Cho Ch., Laine M. (2015), *Volume and Tone of Environmental Disclosure: A Comparative Analysis of a Corporation and its Stakeholders*, "Social and Environmental Accountability Journal", 35 (1), pp. 1–16.
- Sandberg M., Holmlund M. (2015), *Impression management tactics in sustainability reporting*, "Social Responsibility Journal", 11 (4), pp. 677–689.
- Schneider D.J. (1981), *Tactical self-presentations: Toward a broader conception*, [in:] Tedeschi, J.T. (ed.), *Impression management theory and social psychological research*, Academic Press, New York, pp. 23–40.
- Sikacz H. (2017), *Ocena raportów zintegrowanych grup kapitałowych na podstawie wskaźników szczegółowych*, "Research Papers of the Wrocław University of Economics", 479, pp. 148–160.
- Smith M., Taffler R.J. (2000), *The Chairman's Statement: A Content Analysis of Discretionary Narrative Disclosures*, "Accounting Auditing & Accountability Journal", 13 (5), pp. 624–646.
- Solomon J.F., Solomon A., Joseph N.L., Norton S.D. (2013), *Impression management, myth creation and fabrication in private social and environmental reporting: Insights from Erving Goffman*, "Accounting, Organizations and Society", 38 (3), pp. 195–213.
- Spear S., Roper S. (2013), *Using corporate stories to build the corporate brand: an impression management perspective*, "Journal of Product & Brand Management", 22 (7), pp. 491–501.
- Stanton P., Stanton J., Pires G. (2004), *Impressions of an annual report: an experimental study*, "Corporate Communications: An International Journal", 9 (1), pp. 57–69.
- Szadziewska A. (2012), *Environmental Reporting by Large Companies in Poland*, "Zeszyty Teoretyczne Rachunkowości", 68 (124), pp. 97–119.

- Szadziwska A., Spigarska E., Majerowska E. (2018), *The disclosure of non-financial information by stock-exchange-listed companies in Poland, in the light of the changes introduced by the Directive 2014/95/EU*, "Zeszyty Teoretyczne Rachunkowości", 99 (155), pp. 65–95.
- Śnieżek E. (2008), *Sprawozdawczość przepływów pieniężnych. Krytyczna ocena i propozycja modelu*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź.
- Śnieżek E., Krasodomska J., Szadziwska A. (2018), *Informacje niefinansowe w sprawozdawczości biznesowej przedsiębiorstw*, Wydawnictwo Nieoczywiste, Warszawa.
- Tarquinio L., Posadas S.C. (2020), *Exploring the term "non-financial information": an academics' view*, "Meditari Accountancy Research", 28 (5), pp. 727–749.
- Unerman J. (2000), *Methodological issues. Reflections on quantification in corporate social reporting content analysis*, "Accounting Auditing & Accountability Journal", 13 (5), pp. 667–680.
- Van de Burgwal D., Oliveira Vieira R.J. (2014), *Environmental Disclosure Determinants in Dutch Listed Companies*, "Revista Contabilidade & Finanças", 25 (64), pp. 61–78.
- Vourvachis, P. and Woodward, T. (2015), *Content analysis in social and environmental reporting research: trends and challenges*, "Journal of Applied Accounting Research", 16 (2), pp. 166–195.
- Waniak-Michalak H. (2017), *Porównywalność w czasie informacji o wynikach działalności społecznie odpowiedzialnej firm raportujących według zasad GRI*, "Zeszyty Teoretyczne Rachunkowości", 91 (147), pp. 129–143.
- Waniak-Michalak, H., Sapkauskienė, A., Leitoniene S. (2018), *Do Companies Manipulate CSR Information to Retain Legitimacy?*, "Inżynierinė Ekonomika– Engineering Economics", 29 (3), pp. 352–360.
- Wiśniewska J., Chojnacka E. (2016), *Weryfikacja danych pozafinansowych przedsiębiorstw odpowiedzialnych społecznie – wyniki badania ankietowego*, "Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach", 284, pp. 97–107.
- Yan B., Aerts W., Thewissen J. (2019), *The informativeness of impression management – financial analysts and rhetorical style of CEO letters*, "Pacific Accounting Review", 31 (3), pp. 462–496.
- Yuthas K., Rogers R., Dillard J.F. (2002), *Communicative action and corporate annual reports*, "Journal of Business Ethics", 41 (1/2), pp. 141–157.

Internet sources

- Analysis ESG (2017) *Raportowanie niefinansowe: wymagania ustawy o rachunkowości a praktyka rynkowa. Wyniki analizy ESG spółek w Polsce*, [http://www.ey.com/Publication/vwLUAssets/Anliza_ESG_spolek_w_Polsce_2017/\\$FILE/Wyniki-analizy-ESG-spolek-w-Polsce-2017.pdf](http://www.ey.com/Publication/vwLUAssets/Anliza_ESG_spolek_w_Polsce_2017/$FILE/Wyniki-analizy-ESG-spolek-w-Polsce-2017.pdf) (accessed 18.05.2020).
- Brennan, N. M., Guillamon-Saorin E., Pierce A. (2009), *Impression management: developing and illustrating a scheme of analysis for narrative disclosures – a methodological note*, https://www.researchgate.net/publication/227428915_Impression_Management_Developing_and_Illustrating_a_Scheme_of_Analysis_for_Narrative_Disclosures_-_A_Methodological_Note (accessed 20.05.2020).
- Cüre T., Esen E., Çalıskan A. Ö. (2020), *Impression Management in Graphical Representation of Economic, Social, and Environmental Issues: An Empirical Study*, "Sustainability", 12 (1), pp. 1–16, <https://www.mdpi.com/2071-1050/12/1/379/htm> (accessed 19.05.2020).

- De Klerk M., van Wyk L. (2017), *Impression management and the use of graphs in integrated reports of the South African mining sector*, Southern African Accounting Association Biennial International Conference Proceedings Champagne Sports Resort Drakensberg SOUTH AFRICA, <http://www.saaa.org.za/Downloads/Publications/FAC004%20Impression%20management%20and%20the%20use%20of%20graphs%20in%20integrated%20reports%20of%20the%20SA%20mining%20sector.pdf> (accessed 20.11.2019).
- Delloite (2019), *Annual report insights 2019. Surveying FTSE reporting*, <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/audit/deloitte-uk-annual-report-insights-2019.pdf> (accessed 10.05.2019).
- Directive CSRD (2021), *Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting*, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021PC0189&from=EN> (accessed 14.02.2022).
- Dyduch J., Krasodomska J. (2017), *Determinants of Corporate Social Responsibility Disclosure: An Empirical Study of Polish Listed Companies*, “Sustainability”, 9 (11), <http://www.mdpi.com/2071-1050/9/11/1934> (accessed 15.11.2019).
- EC (2017), *Guidelines on non-financial reporting (methodology for reporting non-financial information)*, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52017XC0705%2801%29> (accessed 14.02.2022).
- ESRG 2 (2021), [Draft] *European Sustainability Reporting Guidelines 2 Quality of information conceptual guidelines for standard-setting*, <https://www.efrag.org/Assets/Download?assetUrl=/sites/webpublishing/SiteAssets/Appendix%202.7%20-%20WP%20on%20draft%20ESRG%202.pdf> (accessed 14.01.2022).
- FEE (2016), *EU Directive on disclosure of non-financial and diversity information Achieving good quality and consistent reporting*, https://www.accountancyeurope.eu/wp-content/uploads/FEE_position_paper_EU_NFI_Directive_final-1.pdf (accessed 15.04.2019).
- Fonseca A., McAllister, M.L., Fitzpatrick P. (2012), *Sustainability reporting among mining corporations: a constructive critique of the GRI approach*, “Journal of Cleaner Production”, pp.1–14, <http://dx.doi.org/10.1016/j.jclepro.2012.11.050> (accessed 15.04.2019).
- GRI4 (2016), *Wytyczne dotyczące raportowania*, http://odpowiedzialnybiznes.pl/wp-content/uploads/2016/06/G4-RSPD_PL_27-06-16.pdf (accessed 20.05.2019).
- Henry E. (2006), *Are investors influenced by how earnings press releases are written?*, “Journal of Communication”, 45 (4), pp. 364–406 <https://pdfs.semanticscholar.org/92a6/3261e47a2fd0d426e291fe04d52086bcc02d.pdf> (accessed 20.05.2020).
- Hoffmann E., Dietsche Ch., Hobelsberger Ch. (2018), *Between mandatory and voluntary: non-financial reporting by German companies*, <https://doi.org/10.1007/s00550-018-0479-6> (accessed 20.11.2019).
- Jones M.J., Slack R. (2009), *Environmental disclosure and targets in environmental reports: impression management or legitimacy theory*, <https://pdfs.semanticscholar.org/742a/9d09fc899ab0dfd6369f46cbf1ce182794be.pdf> (accessed 15.04.2019).
- KPMG (2020), *The time has come, The KPMG Survey of Sustainability Reporting 2020*, <https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/11/the-time-has-come.pdf> (accessed 05.12.2021).
- La Torre M., Sabelfeld S., Blomkvist M., Tarquinio L., Dumay J. (2018), *Harmonising non-financial reporting regulation in Europe. Practical forces and projections for future research*, “Meditari Accountancy Research”, <https://www.emerald.com/insight/content/doi/10.1108/MEDAR-02-2018-0290/full/pdf?title=harmonising-non-financial-reporting-regulation-in-europe-practical-forces-and-projections-for-future-research> (accessed 27.12.2021).

- Merkel-Davies, D.M., Brennan, N. M. (2007), *Discretionary Disclosure Strategies in Corporate Narratives: Incremental Information or Impression Management?*, “Social Science Electronic Publishing”, 26, pp. 116–196, https://researchrepository.ucd.ie/bitstream/10197/2907/1/04_21%20Merkel-Davies%20Brennan%20Discretionary%20Disclosure%20Strategies%20in%20Corporate%20Narratives.pdf (accessed 15.11.2019).
- Neuendorf K.A., Kumar A. (2015), *Content analysis*, <https://academic.csuohio.edu/kneuendorf/vitae/Neuendorf&Kumar15.pdf> (accessed 20.04.2019).
- Richard G., Fisher R., van Staden, C. (2015), *Readability and Thematic Manipulation in Corporate Communications: A Multi-Disclosure Investigation*, https://ir.canterbury.ac.nz/bitstream/handle/10092/11069/12655569_208.pdf?sequence=1&isAllowed=y (accessed 20.05.2020).
- SOB (2015), *Spoleczna odpowiedzialność biznesu w polskich realiach. Teoria a praktyka*, <http://www.centrumcsr.pl/raport-spoleczna-odpowiedzialnosc-biznesu-w-polskich-realiach-teoria-a-praktyka/> (accessed 20.04.2020).
- Stakeholder Feedback (2021), *Stakeholder feedback on the European Commission’s proposal for a Corporate Sustainability Reporting Directive*, https://seg.org.pl/storage/uploads/regulacje/inne/1637937747_feedback%20statement%20CSR%20final.pdf (accessed 14.02.2022).
- Talbot D., Boiral O. (2018), *GHG Reporting and Impression Management: An Assessment of Sustainability Reports from the Energy Sector*, “Journal of Business Ethics”, 147 (2), pp. 367–383, <https://doi.org/10.1007/s10551-015-2979-4> (accessed 18.11.2019).
- Venter E.R., van Eck L. (2021), *Research on extended external reporting assurance: Trends, themes, and opportunities*, “Journal of International Financial Management and Accounting”, 32 (8), pp. 63-103, <https://onlinelibrary.wiley.com/doi/full/10.1111/jifm.12125> (accessed 14.02.2022).
- Willis D. (2008), *Perceptions of Company Performance: A study of impression management*, <https://eprints.utas.edu.au/3293/1/wills.pdf> (accessed 15.05.2020).
- Zarzycka E., Krasodomska J. (2021), *Non-financial key performance indicators: what determines the differences in the quality and quantity of the disclosures?*, “Journal of Applied Accounting Research”, https://www.researchgate.net/publication/352019582Non-financial_key_performance_indicators_what_determines_the_differences_in_the_quality_and_quantity_of_the_disclosures (accessed 14.02.2022).
- Zhang Y., Wildemuth, B.M. (2009), *Qualitative Analysis of Content*, https://www.ischool.utexas.edu/~yanz/Content_analysis.pdf (accessed 20.05.2019).