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IMPRESSION MANAGEMENT IN REPORTING ENVIRONMENTAL INFORMATION IN GROUPS OF THE ENERGY, RAW MATERIALS AND FUEL SECTORS. EVIDENCE FROM POLAND

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ABSTRACT: Impression management is vital in disclosing non-financial information, including environmental information, in integrated reports. The purpose of the study is to identify and assess the effects of using the impression management strategies in presenting non-financial ecological knowledge in the integrated reports issued by capital groups from the energy, raw materials and fuel sectors, which have had a large share in the degradation of the natural environment for many years. The research was conducted based on two stages: the first stage – as part of the impression management strategy – focused on text analysis to identify the tools for thematic manipulation as well as visual and structural manipulation, and the second stage consisted in analysing the level of text readability using, i.a., FOG and Pisarek indices. The research findings regarding the selected business entities identified as the "polluters" of the natural environment confirm the application of various tools as part of the stakeholder impression management strategies, including manipulation using words, colour, pictures and text.

KEYWORDS: sustainability, green accounting, environmental information, integrated reports, impression management

Introduction

In light of the sustainable development goals, the problems related to protecting the natural environment represent an important area that requires swift and consistent action (General Assembly Resolution, 2015). Within the framework of these activities, appropriate legal regulations should be introduced, addressed to business entities and the general public aimed at encouraging, and in many cases also forcing, pro-environmental attitudes and behaviour. The effectiveness of such processes largely depends on proper communication between the economy, legislators, experts and society (Schriver, 2017). The following projects and initiatives on a global scale and within countries are a response to an accurate and up-to-date diagnosis related to the deterioration of the natural environment and its reasons. European Sustainability Reporting Standards (ESRS) proposal for a Corporate Sustainability Reporting Directive (CSRD) (ECN, 2022; EFRAG, 2022) are examples of such projects and initiatives.

One of the factors underlying such diagnosis is the reporting of environmental information by business entities whose activities are burdened with a significantly negative impact on the natural environment, such as climate, water condition, biodiversity, etc. Environmental information is highly diversified. It can be financial, quantitative, descriptive or mixed (Sobańska, 2007). The financial information presented in financial statements is subject to the rigour of balance sheet law. At the same time, specific regulations limit the discretion of the manner and scope of its reporting, e.g., IAS/IFRS or national regulations and the resulting accounting principles, in particular the accurate and fair view principle (e.g. Alexander & Archer, 2003; Mattessich, 2009; Boyle, 2010). The IFRS (International Financial Reporting Standards) Conceptual Framework states that the objective of financial statements is that they should be valuable, accurate, trustworthy, and fair. This concept means they must present a valid and unbiased view to be helpful. The essential requirement is "to achieve a fair presentation" (IFRS, 2022).

Non-financial reporting is much more flexible and discretionary regarding the scope and layout of the disclosed non-financial information than financial reporting. The research on this subject indicates numerous problems of a practical and legislative nature (e.g. Turzo et al., 2022; van der Lugt et al., 2020). In environmental problems issues, applying GRI (2016) standards makes it slightly limited (Diouf & Boiral, 2017). For this reason, non-financial information reflecting these issues may become the subject of narrative reporting to a greater extent, and primarily of impression management, which is directly focused on influencing the report user to create, e.g., a positive image of an eco-friendly enterprise, even though this particular enter-

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prise may have a strongly negative impact on the natural environmental (e.g. Wang, 2016; Merkl-Davis & Brennan, 2013; Rämö, 2011; Cho et al., 2010; Rutherford, 2003). Taking intensive advantage of the impression management instruments may affect the quality of communication with the social partner and, as a result, also influence the diagnosis, e.g., regarding the scale and effectiveness of actions taken by these entities to eliminate or significantly reduce the negative impact on the environment (García-Sánchez & Araújo-Bernardo, 2019). As a consequence, it may, directly and indirectly, hinder the implementation of the sustainable development objectives, in particular the goals aimed at improving the natural environment (goals 7, 13, 14, 15) and the goal concerning the general public's right to be provided with relevant information (goal 12.8) (CZR, 2016).

To standardise the methods for reporting disclosures regarding sustainable development and to emphasise the consistency of financial statements and the sustainable development report, the European Commission (European Commission, 2021) published a draft of a new CSRD directive, which is to replace the existing directive on non-financial reporting (Directive, 2014). The reports will be prepared by the European reporting standards on the sustainable development of the ESRB, the purpose of which is to establish a uniform framework for non-financial reporting provided in the draft of the CSRD directive.

The research gap identified by the authors refers to the deficit in research studies addressing impression management strategies in non-financial reporting of environmental information related to the industry sectors exerting a strong negative impact on the natural environment in Central and Eastern Europe countries, including Poland. The purpose of the study is to identify and assess the effects of impression management strategies in presenting non-financial environmental information in the integrated reports issued by capital groups from Poland's energy, raw materials and fuel sectors. The sectors selected for the analysis have had a significant share in the degradation of the natural environment for many years. The study is focused on the most critical capital groups preparing integrated reports and listed on the Warsaw Stock Exchange (WSE). Within the framework of the research objective, additional analysis and assessment of the readability level referring to the selected fragments from the modules devoted to environmental problems were carried out in terms of their intentional impact on the report user. The analysis was also aimed at verifying the Jasnopis application as the software suitable to use in the texts addressing the area of green accounting.

As part of the two-stage research, the method of manual text analysis was used along with the study of the text readability level applying for the Jasnopis program within the framework of which, i.a., FOG and Pisarek indices were used. The structure of the article was adapted to the research purpose.

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The first part presents the review of the basic and advanced tools used in impression management and the research carried out so far in this subject matter in terms of reporting environmental non-financial information. In this background, the research questions were formulated. The next part describes the research methodology, the obtained results, and their reference to other studies. The article's final part includes the conclusions from the research findings and their limitations.

An overview of the literature

Impression Management Strategies in disclosing non-financial – environmental information

Impression management refers to both financial and non-financial information (Cho et al., 2010; Merkl-Davies & Brennan, 2007), including social and environmental information. It is considered a strategy, a process (Leary & Kowalski, 1990) or a technique aimed at shaping and controlling stakeholder impressions. Impression management as a set of plans is used to co-create narration in reporting. It represents its instruments influencing the emotions and behaviour of stakeholders, frequently put together skillfully by biased managers. Impression management, taken from social psychology, refers to presenting oneself to others which results in being perceived positively (Hooghiemstra, 2000). Impression management is supposed to conceal the unfavourable adverse effects of the activities carried out by a business entity (Abrahamson & Park, 1994), magnify its achievements and emphasise its positive perception, e.g., by using a more significant number of positive keywords.

Beattie and Jones (2000) distinguish two types of impression management: accounting numbers management and presentation management. Leary and Kowalski (1990) propose a two-component model: impression motivation and impression construction. They believe that impression management is a rational process that helps entities bridge the gap between their actual situation and their desired status. Brennan et al. (2009) suggest conducting research on impression management in four areas included in the composite impression management score: thematic manipulation, selectivity, visual presentation, and comparing achievements. Merkl-Davies and Brennan (2011; 2013) distinguish seven strategies of impression management (including six classifieds in two main I-II strategies):

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I) Strategies for obfuscation (concealing) unfavourable situations or results:

1) syntactic manipulation – using complicated language, which affects the degree of readability (e.g. Kohut & Segars, 1992),
2) rhetorical manipulation – using meaningful rhetoric, e.g., metaphors,

II) Strategies for emphasising positive situations or results:

3) thematic manipulation – highlighting good news and disregarding lousy information,
4) visual and structural manipulation – using appropriate graphic means, e.g., typeface, size and colour of letters, text arrangement,
5) comparison of achievements – selection of comparative periods presenting the entity's situation in the best possible light,
6) selectivity – focusing on selected information, ignoring specific indicators, and strategy,

and strategy

7) achievement attribution – assigning positive achievements to the entity (and managers), whereas the negative ones to independent external factors (e.g. Hooghiemstra, 2010).

In the case of each of these strategies, it is required to apply the appropriate method for detecting impression management (Merkl-Davies & Brennan, 2011), e.g., syntactic manipulation – readability indices (Gunning, 1952), thematic manipulation – encoding positive and negative keywords, visual manipulation – using fonts and colours, selection of charts, selectivity – the analysis of information arrangement, selecting the level of operating profit or net profit.

The main goals of using the impression management strategy in non-financial reports include creating the image and reputation of an entity and legitimising actions (Duchon & Drake, 2009; Hopwood, 2009). The obfuscation strategies constitute deliberate distracting messages which can confuse stakeholders, making them puzzled or disoriented (Diouf & Boiral, 2017). Rutherford (2003) defines obfuscation as regulated narrative disclosure of accounting in corporate governance, pointing out that poorly performing companies do not always obfuscate their image using text complexity.

The specificity of non-financial information (narrative form, voluntariness, creativity, individualism) makes it particularly susceptible to the influence of stakeholder impression management strategies (Wang, 2016). Numerous studies have already analysed impression management based on the narratives in non-financial reports. They cover both the revealed content and visual effects. Rämö (2011) claims that the photos presented in these reports (in corporate social responsibility reports) along with the text stimulate, to a greater extent, the impressions related to the reception of informa-

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tion. In turn, the words providing inconsistent visualisations may distract stakeholders and disrupt the messages dedicated to them. Breitbarth et al. (2010) believe that visual communication is just as important as the words and numbers disclosed in non-financial reports.

Cho et al. (2010) contributed significantly to the research on environmental information disclosure. They analysed texts of the reports issued by American companies and observed an egoistic approach to the disclosed ecological knowledge as well as text and overtone manipulation, including the disclosure of slightly less optimistic narratives relating to worse environmental accomplishments of the entity. Breitbarth et al. (2010) found, based on the study of British and German companies, that visual communication (image creation) in the areas of social responsibility and sustainable development presented in non-financial reporting is as important as words and numbers in creating meaning and evaluating non-financial results. García-Sánchez and Araújo-Bernardo (2019) confirm the disclosure of social and environmental information in the reports of Spanish companies using impression management strategies based on visual and structural manipulation, which is manifested through using the right size of graphics and photography and the selection of proper colour. The psychology of colours in the conducted activity (business) plays a significant role in impression management, influencing the senses and emotions of stakeholders, e.g., green refers to hope, nature and ecology (ecological aspects of the business), and blue evokes trust, safety and responsibility. In contrast, red stimulates action and creativity and has an energising effect. However, different interpretations of colours in different cultures should be considered, e.g., green is the sacred colour of Islam (Bartosik-Purgat, 2004).

Applying the GRI (2016) standards and the accurate and fair view principle should prevent or reduce using the impression management strategy. However, the studies of sustainable development reports confirm their use, as evidenced by their optimistic and unsustainable nature, according to Diouf and Boiral (2017). Their research covered interviews with stakeholders and experts in corporate social responsibility investments in Canada, which confirm the flexible application of the GRI standards and the use of impression management to highlight the positive aspects of sustainability and obfuscate negative results.

Practice shows that the environmental information disclosed by the GRI 300 (Environmental Disclosures), which defines the exact scope of disclosures (Materials, Energy, Water, Biodiversity, Emissions, Effluents and Waste, Environmental Compliance, Supplier Environmental, Assessment), is also subject to impression management, e.g., manipulation of accomplishments regarding the selection of comparative periods (in some cases their absence) when disclosing non-financial information on biodiversity GRI 304, in par-

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ticular GRI 304-3 Habitats protected or restored. It also happens that inconsistent environmental information is provided, e.g., different measurement units for energy consumption.

Impression management can result in lower quality of reporting, as confirmed by critical opinions about sustainable development reports, describing them as a form of a spectacle or myths about social and environmental responsibility (Solomon et al., 2013). In the opinion of Merkl-Davies and Brennan (2007), the voluntary nature of sustainability reporting and the absence of regulations in this area facilitate the development and the scale of an impression management strategy usage. Disclosing non-financial information in the corporate social responsibility reports is primarily aimed at making a positive impression on the stakeholders of the entity, which is related to (Wang, 2016): the company's mature approach to the practice of social responsibility, openness and honesty of the entities extending the disclosed information with narratives. The problem is that not every stakeholder has the appropriate competencies, knowledge, and tools to accurately assess the entity's intentions and the integrity of the submitted non-financial information.

The research confirms the biased nature of the provided environmental information, which frequently results from the harmful activity performed by entities, e.g., pollution and degradation of the natural environment. To maintain legitimacy and correct social relations, in such a situation, many entities decide to prepare non-financial reports dedicated to environmental information, supported by an appropriate narrative using impression management strategies. An increase in ecological information disclosures has been observed, e.g., in the reports issued by the US oil companies and also Canadian companies operating in the mining, oil and gas sectors, when an oil spill and negative public perceptions about environmental damage were recorded (Patten, 1992; Neu et al., 1998).

In this context, the authors formulated two research questions regarding the impression management strategy used by capital groups from the selected industry sectors in Poland about non-financial information addressing environmental issues:

Q1: What impression management strategies are used in integrated reports on environmental issues?

Q2: To what extent does the difficulty level of environmental text in integrated reports translate into its readability?

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Research method

The research addresses the scope and strategies of impression management used in integrated reports of capital groups from the energy, raw materials and fuel industry sectors listed on the WSE, included in the WIG Energy, WIG Raw Materials and WIG Fuel indices. The groups listed in the abovementioned index represent Poland's most significant capital groups. At the same time, the entities exert a substantial negative impact on the natural environment due to their use of coal, crude oil and natural gas as the primary raw material. The groups covered by the study submitted their reports to the competition for the best sustainable development reports, edition 2021, including integrated reports (the National Competition Sustainable Development Reports, formerly the Competition Social Reports) organised by the Responsible Business Forum and DELOITTE (KRZR, 2022). It is essential information because participation in this competition aims at, i.a., building both image and reputation and legitimising the company operations. The analysis covered 2020. The Energa Group and the Jastrzębska Spółka Węglowa (JSW) Group did not participate in the competition in its 2020 edition. Only the report issued by the Energa Group covers 2019. Still, it was included in the research because the company is one of Poland's energy industry's largest capital groups and participated in the 2019 edition of the competition. The study also covered an integrated report by JSW, one of the largest capital groups in Poland operating in the raw materials industry, prepared for 2020. Ultimately, the following capital groups were accepted for the research:

- **Energy sector:**
  - ENEA,
  - TAURON,
  - ENERGA,
  - POLENERGIA,
  - PKP ENERGETKA.

- **Raw materials and fuel sector:**
  - KGHM POLSKA MIEDŹ,
  - LUBELSKI WĘGIEL "BOGDANKA",
  - JASTRZĘBSKA SPÓŁKA WĘGLOWA,
  - LOTOS,
  - PKN ORLEN.

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The study was conducted based on two stages. In the first stage, the methods and scope of the environmental information presentation were compared, and the impression management techniques used in integrated reports for the texts on ecological problems were identified. The method of qualitative analysis was used, which consisted in reading the text and analysing it manually. The study's goal was to identify and indicate the potential differences in the applied narrative strategies, primarily the use of impression management between sectors and entities representing the same sector.

In the second stage of the research, selected fragments of the text presenting the modules on environmental problems were analysed using the Jasnopis program adapted to the specificity of the Polish language in the version available at www.jasnopis.pl. This application was developed as part of the research project on "Measuring the level of readability of Polish functional texts" (Gruszczyński et al., 2015; Gruszczyński & Ogrodniczuk, 2015). This program is the Polish equivalent of the programs used in other countries, e.g., the English-language program of the Hemingway Editor application (Hemingway-editor-review). A more advanced tool is Coh-Metrix9, which is an interactive system adapted to, i.a., English-language texts (Graesser et al., 2004; Gruszczyński et al., 2011; McNamara & Graesser, 2011).

The research conducted by the authors is a continuation and extension of the study initiated by Krasodomska (2016) and Czajkowska (2020), covering the selected individual entities listed on the Warsaw Stock Exchange. The research aimed at assessing the possibility of using the Jasnopis program for the texts included in non-financial statements. As part of our research, the results of the Jasnopis program application were analysed, including the calculated FOG Index and Pisarek Index. Also, the number and percentage of complex words were used. The study covered thematically compact fragments, including between 170 and 200 words.

Results and discussion

In the first stage of the research, the impression management strategies used in the integrated reports of the studied groups in the section on environmental information were identified: thematic manipulation, visual and structural manipulation, and syntactic manipulation. Table 1 presents the results referring to the thematic manipulation of ecological aspects in terms of words and phrases divided into general, i.e. concerning the entire report and the environmental ones. The mottos of information as the whole were also taken into account.

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Table 1. Thematic manipulation related to environmental aspects in the analysed companies

Keywords and key phrases – selected	
General	Environmental
Company / Motto	
KGHM Polska Miedź / Future is made of copper	
stability, future, efficiency, flexibility, ecology, security, cooperation, dialogue, interaction, responsibility, good practices, public confidence, optimization, reliable producer, trusted contracting party, leader of sustainable development	**green order, green energy, pro-ecological investments**, climate and air protection, **renewable energy, reduction** of emissions, biodiversity conservation, afforestation, reclamation of mines, **counteracting environmental** threats, **ecological** production, **pro-ecological** regulations, man and the **environment**, photovoltaic power plants, responsible land and forest management
Lubelski Węgiel "Bogdanka" / Stable development in uneasy environment. Challenges in a time of pandemic	
stable development, responsibility, safety, mine of the future, smart mine, efficiency, dialogue with stakeholders, cooperation, innovative projects, social initiatives, support, partner	effective mine, land reclamation, increasing natural attractiveness, **green order, energy transition**, land revitalization, climate protection, **renewable energy**, protection of biodiversity, education for **environmental** protection, efficiency of electricity use, **environmental investments**, reduction resources, materials and energy consumption
Jastrzębska Spółka Węglowa / We mine coal that changes the world	
stable development, digitization, employee satisfaction, stable work, supporting partner, implementation of innovative technologies, increasing security, minimizing risks, counteracting corruption, compliance with the principles of ethics, human rights, support, training, commitment	reclamation, carbon footprint **reduction**, energy efficiency, revitalization, **environmental** awareness, sustainable development of mining and post-mining areas, **environmental** standards, **environmental** management system, biodiversity, **environmental** protection expenditure, **pro-environmental** investments, management of space and **natural environment** resources, **reduction of greenhouse gas emissions**, reduction of energy consumption by machines and devices, **reduction of CO_2** emissions, **environmental** strategy
LOTOS / Stabilization and safe development	
stabilization, safe development, stable position, modernity, development, modernization, flexibility, efficiency, process optimization, innovation, quality, social responsibility, business responsibility, cooperation, new generation fuel leader, supporting diversity, socially responsible company, sustainable development, multi-energy concern	responsibility for the **natural environment**, reduction of CO_2 emissions, care for biodiversity, **green** hydrogen, strategy for climate change, control of air pollutant emissions, hydrogen strategy, improvement of energy efficiency, **environmental** standards
PKN Orlen / We fuel the future. Sustainably	
leading player in Europe, energy transition leader in the region, socially responsible concern, retail sales leader, social dialogue, good practices, confidence, future, responsibility, development, sustainable, integrated, innovation, competitiveness, modernity, security, professionalism, cooperation, multi-energy concern, recognition, interaction, sustainable development	**counteracting the negative effects** of climate change, renewable energy sources, new mobility, recycling and biofuels, hydrogen, wind energy, photovoltaic farms, **environmental trends**, bioproducts, developing **ecological** sensitivity, renewable energy, circular economy, **green** financing, **green** bonds, CO_2 **emission reduction**, zero-emission and low-carbon energy sources, hydrogen technologies, climate neutrality by 2050, energy transition

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ENEA / We invest in a green future	
safe/security, responsibility, green, respect, reliable, sustainable, leader, values, we care, protection, friendly, innovation ecosystem, socially responsible entity, counteracting communication exclusion, common values, mutual respect and acceptance of values, friendly atmosphere, lasting relationships, we do listen carefully	**ecological** awareness, ensuring proper **environmental** protection, caring for the **environment**, **pro-ecological values**, due diligence, **environmentally friendly activities**, rational use of natural resources, steady progress, CO2 reduction
TAURON / Our values Partnership, Development, Boldness. The power of team	
values, modern, potential, responsible, courageous, sustainable, future, value leverage, Tauron's green turn, responsible communication, environmentally friendly, values and vision, value system	**environmentally friendly**, **environmental** protection, **green transformation**, emission significantly below the levels defined as the maximum allowable annual loads of substances released into the air, activities resulting in **environmental** effects, caring for the natural **environment**, **minimizing negative impacts**, **counteracting** climate change
ENERGA / Our responsibility	
accountability, confidence, pioneer, leader, innovative, protection, modern, stabilizing, ethics, values, courage, reliability, ecological, partnership, respect, inspiration; reliability, commitment, recommendable employer, our responsibility, responsible development, the group is a pioneer, high quality of services, sustainable manner, lasting relationships, courage and innovation, puts great emphasis on ..., special efforts, social interests, improvement of activities, social commitment	**readiness to reduce**, **pro-ecological activities**, ecological solutions, active participation, modernization, key investments, **counteracting negative impacts**
POLENERGIA / Go green	
green, self-improvement, relations, partnership, standards, innovation, modern, leader, pioneer, success, value transformation, green side of power, active support, dispersed sources, new standards, we change our environment, setting new standards, new directions, future generations, renewable energy sources, the entity of the future	ecosystem, **energy from the future**, clean and green energy, climate change, **environmental impact**, the **green** side of power
PKP Energetyka / Supporting the development of Polish railways	
reliable, dependable, friendly, commitment, philanthropy, transparency, green, modernization, cooperation, reliable partner, solid infrastructure, ambitious plans	**environmental** awareness, **green** transport sector development, good practice, project name "Polish **Green** Railway", **nature-friendly**, **green**

Source: authors' work based on KRZR (2022).

The analysis shows that the keywords and crucial phrases presenting environmental-pro-ecological content are frequently included in the motto of the entire report, which may leave the user with the impression that the whole piece, and thus the group's activity, is determined by ecological goals and care for the natural environment (e.g. ENEA). The words and phrases bearing a general meaning can be correlated with those signifying the environmental area (e.g. KGHM: sustainable development – man and the environ-

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ment, POLENERGIA: future generations – environmental impact). Among the repeating keywords and phrases of general nature for the analysed companies, the following were indicated: stability, development, future, security, responsibility, trust, and green. It is more difficult to determine the repeatability of environmental keywords and phrases because the companies most often wish to stand out in creativity and individuality in these parts of their reports and frequently introduce environmental keywords into other thematic modules, an example of which is the word "green". The authors selected the following repetitive environmental words and phrases: green, green order (energy, transformation), friendly, renewable energy, limiting/reducing/preventing/minimising emissions (negative impacts), energy efficiency, ecological investments, ecological/pro-ecological performance, environment /natural environment/environmental. In Table 1, the authors have bolded keywords and phrases with ecological overtones.

Table 2. Visual and structural manipulation regarding environmental aspects in the analysed companies

Company	Colours	Text arrangement
KGHM POLSKA MIEDŹ	Grey Brown Teal	**Module:** ***Natural environment*** **Photos**: forest, meadows, wildflowers as a background for the presentation of emission reduction **Charts and drawings:** with additional explanatory comments in gray, brown, and teal colours **Text**: small text font, titles of short text fragments in bold gray, teal colours, fragments of the text in teal and pastel brown colours, short texts with attached pictograms, the text fragment on teal background in white font
LUBELSKI WĘGIEL "BOGDANKA"	Green-blue	**Module:** ***Environmentally efficient mine*** **Photos**: mine (e.g. mine shaft) among meadows and wildflowers, mine at the background of nature (title page of the report) **Tables:** in green-blue and gray **Text:** fragments using green-blue font and presented at the green-blue background in white font, green-blue pictograms
JASTRZĘBSKA SPÓŁKA WĘGLOWA	Black Orange	Environmental aspects included in the **module:** ***Sustainable development***: ***Environmental protection. Caring for climate*** **Photos**: mine at the background of landscape and meadows, fragment of a forest **Drawings**: orange-coloured, tricolour tables and (pie, bar) charts: orange (dominant), gray, navy blue **Text**: short texts highlighted in orange, slogans, words in bold
LOTOS	Red Blue	**Module:** ***Environment*** **Photos**: a refinery or its fragment amongst green meadows, a butterfly at the background of the refinery, each part of the module starts with the same photo: two flying white birds at the blue background and a title in blue **Tables**: the text in tables in gray and red (table head) colours, bar charts in different colours (light blue and dark blue, red) **Text**: titles of the text fragments in bold blue, relevant text fragments highlighted at the blue background, blue pictograms

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Company	Colours	Text arrangement
PKN ORLEN	Red White	Included in the **module:** ***Our strategy in the ESG part: Climate. Environment*** **Photos**: refinery and petrochemistry or their buildings against the background of nature (forests, meadows, blooming poppies), falcon chicks at the background of the concern, wind and photovoltaic farms amongst meadows and installations. **Drawings and** (pie) **charts:** in gray-white, gray and red colours. **Text**: black, gray and red font, highlighted words, slogans, different font size, pictograms in red, short fragments of the text, grouped thematically
ENEA	Blue Royal-blue	**Module:** ***Environment*** **Photos**: trees and fields (exposed intense greenery), information on the level of CO_2 emissions at the background of photos showing windmills **Text**: short message-like texts, many charts, zoomed charts, highlighting information about the increase in energy production from renewable sources (although it was only 5%)
TAURON	Green Intense pink	No separate main **module** presenting environmental information. Information is separated in two modules as subsections: ***Environmental policy. Climate policy*** **Photos**: windmills at the background of clear skies and greenery, photovoltaic installations at the background of sunlight (even though the share of these sources is minimal on the list presenting the types of produced energy) **Text**: green and yellow letters at the black background (uncomfortable to read), displaying two documents: Environmental policy and Climate policy, no information about the unit of emission measurement in the tables presenting the emission scale
ENERGA	Green	**Module** ***Ecological solutions*** **Photos**: fragments of plants, leaves and sky, photos of employees. **Text**: small letters (text difficult to read), several columns on one page that make reading difficult, green font colour, numerous small drawings unnecessary from the content perspective, green background for the text
POLENERGIA	White Green	**Module:** ***Environment*** **Photos**: videos of windmills and investments in progress, numerous, large photos of windmills at the background of greenery, photos of nature **Tables:** presenting data on CO_2 emissions are not sufficiently described (e.g. no measurement units), presentation of information about gas emissions along with the information about avoided emissions highlighting quantitative information about the latter **Text**: short, including slogans, disproportionately large letters of the subheadings, highlighting the text on renewable energy sources in colour, colourful drawings to emphasize the text
PKP ENERGETYKA	Dark green	No clearly separated **module** devoted to environmental problems. The section ***We power energy transition*** presents environmental information **Photos**: mostly showing photovoltaic installations **Text**: very small letters used, text arranged in four parallel columns which make reading difficult, no orderly arrangement of the subheadings, information about the changed methodology of calculating own energy consumption without providing any substantive explanations, highlighted information about plans and intentions with reference to good practices, e.g., from other companies

Source: authors' work based on KRZR (2022).

To analyse impression management in visual and structural manipulation, the authors selected the used colours and text arrangement, considering the module on environmental issues, photos, tables and charts, and the font colour and size. The findings have been summarised in Table 2.

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The collected findings provide the answer to question Q1. The compilation shows various impression management instruments (e.g. font: size, colour) applied within a visual and structural manipulation framework. It is worth paying attention to the highlighted motto, which in all analysed groups includes keywords with the most positive overtones. The intense use of such words applies to all environmental modules. In most cases, the photos evoke clearing associations, e.g., green forests and meadows, windmills and photovoltaic installations, even in groups with negligible energy. In a few cases, additional drawings with a simple and positive message were introduced. Another intensely used tool is the colour of letters or the background, primarily about texts which highlight the ambitious plans and intentions of the groups rather than their specific achievements in the area of pro-ecological activities. The green colour is most intensely used in these parts of the text, which relate to environmental aspects. The information on the current environmental pollution is not provided. The quantitative data presented in the tables are lacking, e.g., appropriate explanations or interpretations. In one case, ecological information is scattered, making analysing and evaluating specific activities difficult. There are also significant differences in detail regarding the presented information. Overusing large charts dominated the entire environmental section and was noticed in one of the analysed companies. The remaining data was provided in the form of slogans or short messages based on which it is difficult to assess the activities performed by the business entity.

The results of our research are broadly in line with the findings obtained by Rämö (2011), who emphasises that a large number of photos or drawings may bring about the effect of concentration or, quite the reverse, distraction experienced by the report user. The author indicates that a descriptive text is more susceptible to impression management strategies. In the opinion of Breitbarth et al. (2010), the image can make as strong an impression on the report user as specific quantitative and evaluative data. In light of these conclusions, an intense application of visual strategy instruments by the analysed groups is justified. The researchers focused on the effects of the applied impression management strategies. The research conducted by Dembowska (2021) points out the need for introducing further legal regulations in the field of non-financial reporting. The study conducted by the author, covering companies listed on WSE and included on the WIG 20, 30 and 40 index list, indicates an improvement in its quality after the introduction of Directive 2014/95/EU. The application of impression management strategy in reporting environmental information, demonstrated in our research, confirms that such a need does exist. Expanding the regulatory sphere in non-financial reporting may also contribute to the intensification of green accounting

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development, which, in practice, often responds to specific problems (e.g. Czaja & Becla, 2022).

In the second part of the research, the authors referred to another impression management strategy – syntactic manipulation based on the analysis of selected text fragments from the section devoted to environmental issues in integrated reports using the Jasnopis program (Table 3).

Table 3. The analysis results of the selected text fragments on environmental issues regarding syntactic manipulation

Title of the analysed text fragment	Text difficulty class	FOG Index Password / Text*	Pisarek Index Text**	Difficult words	
				Number	%
KGHM POLSKA MIEDŹ					
Climate and air protection	7	17,75 / 20,67	17,14	17	8
Water and sewage management	6	12,69 / 15,60	14,03	16	8
Energy policy	7	15,15 / 19,17	15,91	8	4
Environmental actions	7	17,53 / 20,84	18,21	12	6
LUBELSKI WĘGIEL "BOGDANKA"					
Environmentally safe actions	7	13,92 / 17,04	14,55	19	9
Energy consumption	6	13,38 / 14,69	12,99	10	5
Reduction of emissions	7	10,10 / 11,12	9,82	8	7
Effective land reclamation	7	16,80 / 20,08	17,56	19	10
Increasing natural and recreational attractiveness of the region	6	13,95 / 16,40	14,34	12	6
JASTRZĘBSKA SPÓŁKA WĘGLOWA					
Environmental Protection	7	16,28 / 19,30	16,93	12	6
Caring for climate	7	16,16 / 19,04	16,90	17	9
Gas and dust emissions	7	17,76 / 21,11	17,61	10	5
Efficient use of non-renewable resources	7	17,73 / 21,48	18,39	15	8
Energy efficiency	7	17,62 / 19,92	17,18	13	7
LOTOS					
Our approach to sustainable development – environment	6	13,86 / 16,21	14,02	12	6
Climate change strategy	7	12.64 / 14.41	11,05	18	9
Airborne emissions	7	15,19 / 18,33	15,06	10	5

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Title of the analysed text fragment	Text difficulty class	FOG Index Password / Text*	Pisarek Index Text**	Difficult words	
				Number	%
Energy production and consumption	6	13,69 / 15,77	13,60	7	4
Biodiversity	6	11,96 / 16,00	13,00	7	4
PKN ORLEN					
Responsibility for the climate	7	16,69 / 19,09	15,74	12	6
Airborne emissions	7	14,05 / 15,13	13,21	11	6
Investment outlays	7	14,77 / 17,20	14,51	20	10
Protection of biodiversity	6	11,87 / 15,87	14,13	12	6
Energy management	7	1367 / 1522	1272	8	4
ENEA					
General principles of environmental impact management	7	19,71 / 23,33	20,05	5	4
Management of resources and materials	7	13,91 / 17,44	15,34	9	5
Management of other gas and dust pollutants	7	16,67/19,60	15,47	7	5
Protection of biodiversity and landscape	7	11,38 / 13,91	1,05	9	5
ENEA Group activities for the environment in 2020	7	20,30 / 22,80	18,41	11	6
TAURON					
Environmental policy	7	20,80/ 22,42	18,29	10	5
Climate policy	6	15,55 / 17,83	13,77	11	6
ENERGA					
Approach to managing the environmental impact	6	8,54 / 9,77	8,87	14	7
Goals for 2019	7	7,68 / 10,92	9,93	7	4
Key investments	7	9,36 / 11,60	10,91	17	9
Energy efficiency	6	9,64 / 10,58	9,42	13	8
POLENERGIA					
Climate impact management	7	10,85 / 12,10	9,58	9	5
Environmental impact	6	13,65 / 15,56	13,53	10	5
Biodiversity	6	14,16 / 1,42	14,68	21	11
Go green	5	11,55 / 13,65	1,02	5	3
PKP ENERGETYKA					

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Title of the analysed text fragment	Text difficulty class	FOG Index Password / Text*	Pisarek Index Text**	Difficult words	
				Number	%
A part devoted to the "green railways" program – the fragment from section 03 "We power energy transition"	6	13,02 / 15,39	13,75	16	8

Value ranges – text difficulty:
* 7-9 easy, 10-12 fairly easy, 13-15 standard, 16-17 quite difficult, 18-21 difficult, above 22 tough (Gunning, 1952),
** 4-7 very easy; 7,1-10 easy; 10,1-13 medium difficult; 13, 1-16 difficult; 16,1-20 very difficult (Pisarek, 1969).
Source: authors' work based on KRZR (2022).

The indicators presented in Table 3 are part of the algorithm on which the Jasnopois program is based. To make the results more specific, the authors chose from the program report the two most common indicators, i.e. FOG and Pisarek, which cannot be assessed separately but as mutually complementary elements.

The analysis of the text showed the environmental module differentiation in terms of readability and allowed for the formulation of conclusions providing the answer to question Q2. POLENERGIA Group may serve as an example, where the classes of text difficulty range from 5 to 7. It has been noted that in the case of class 7, there is a relatively small percentage of complex words (5%) compared to the text graded in class 6 (11%). The fragments characterised by the difficulty graded as class 7 contain the most relevant and specific information addressing, e.g., greenhouse gas emissions and the already implemented strategies. The lowest difficulty class was detected in the text discussing the Group's activities focused on education and raising environmental awareness among children. The most melancholic FOG and Pisarek indices were noted in the text presenting difficulty graded as class 7, whereas the highest for the class graded as 6. It has been observed that in some of the analysed companies (e.g. ENEA group), the highest text difficulty (class 7) is characterised by the FOG and Pisarek indices that most often are close and relatively low, which can be interpreted as a highly readable text, despite the percentage of complex words higher than in the case of other companies. The texts related to increasing the natural and recreational attractiveness of the area (e.g. Lubelski Węgiel "Bogdanka") and biodiversity (e.g. LOTOS group, PKN Orlen) reveal a lower level of difficulty (class 6). The texts with assigned class 7 are considered extensively complex and professional, hence may require specialist knowledge and a university degree in the relevant field to understand them. Therefore, not every stakeholder has the opportunity to read the text with comprehension and make the right decision based on the information provided in the reports. It was observed that the percentage of difficult words in the analysed text does not always translate

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into the text difficulty class, e.g., in the texts classified as the difficulty class 7, the percentage of complex words was at the level of 4-5%. The information presented in such fragments would require additional interpretation and description to facilitate their comprehension by users, which, in most cases, is not provided.

The results of text analysis using the Jasnopis program are consistent with the research findings collected by Krasodomska (2016) and Czajkowska (2020). These authors analysed in detail the entire report of one entity only. Our research addresses a broader subjective scope covering the cross-section of the selected industry sectors and is focused on environmental problems. Our research shows that the scale of text difficulty is diversified. It ranges between 5 and 7 difficulty levels, with the dominating class 7. The fragments with assigned problems graded as classes 5 and 6 are generally descriptive and express the entity's concern for the natural environment or present general objectives within the framework of pro-ecological activities. The fragments assigned to class 7 refer to specific ongoing activities that the entity is required to report by the GRI. It is worth paying attention to the following correlation: the number of complex words does not translate into the level of text readability. This may imply that the information which is difficult, inconvenient and measurable for the entity is intentionally presented in an unclear and incomprehensible manner, thus remaining challenging to interpret and evaluate for the user of the report.

Conclusions

The analysis of the selected integrated reports showed that impression management strategies were used in all cases, although to a different extent. Some of them can be indicated as the ones most frequently used. Among them, the authors included the following: intensive use of words with positive overtones, colour manipulation of the text and background, overusing photos presenting nature, windmills, photovoltaics or additional graphics. The less frequently applied techniques included reducing the font and introducing several columns, which make reading more difficult, presenting quantitative data in accordance with GRI standards lacking data description or units of measurement, making the report interpretation and evaluation difficult for the user, and giving environmental problems in a scattered way. The majority of applied solutions aimed at constructing the appropriate image of groups as entities evoking confidence and acceptance in terms of their past, current and future pro-ecological activities.

The applied impression management strategies raise questions about the compliance of such a message with the accurate and fair view principle in

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financial and non-financial reporting. It is also worth highlighting that the analysed groups used the GRI standards, which proves they are not affecting either elimination or significant reduction of such practices.

The research has also confirmed that the Jasnopis application can analyse Polish texts in green accounting regarding their readability for the user. The analysis also showed that the text difficulty level is not determined by the number of difficult words. Environmental information as a specialist text can be reported transparently or complicatedly, which can remain yet another area of intentional actions carried out by business entities as part of their impression management strategy.

A small number of sectors covered by the study, classified as "polluters" and "destroyers" of the natural environment, was a limitation of the research. For this reason, the sector oriented analysis was limited. In the second stage of the research, the authors intend to consider more industry sectors and conduct a comparative analysis covering other European Union countries.

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