

## BETWEEN TRANSPARENCY AND PERSUASION: COMPARATIVE ANALYSIS OF ESG VISUALIZATION STRATEGIES IN POLISH RETAIL LEADERS' REPORTS

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**Purpose:** This study investigates ESG data visualization strategies employed by Polish retail leaders, examining how visualization choices reveal underlying communication approaches and whether mandatory disclosure frameworks achieve transparency objectives.

**Design/methodology/approach:** Multiple case study analysis of 2023-2024 sustainability reports from three Polish retail chains (Lidl Polska, Biedronka, Żabka) employing systematic visual inventory (287-469 elements per report), semiotic analysis of exemplar visualizations, and functional coding across six communicative purposes. The integrated analytical framework combines visual rhetoric theory, corporate legitimacy theory, and greenwashing literature.

**Findings:** All three retailers demonstrate near-complete avoidance of conventional charts (averaging 0.19% of visual elements) despite extensive numerical disclosure, revealing “compliant obscurity” - technical CSRD adherence through formats systematically minimizing stakeholder evaluation capacity. Analysis identifies visual greenwashing as comprehensive strategic architecture operating through five mechanisms: analytical visualization avoidance, emotional substitution via intensive photography, aesthetic legitimation through design sophistication, semiotic naturalization normalizing corporate-favorable assumptions, and symbolic efficiency replacing substantive disclosure. While organizational characteristics shape specific manifestation, core architecture converges across cases. Semiotic analysis reveals how materiality matrices present corporate interest prioritization as objective measurement, photographs naturalize inequalities as partnerships, and infographics reframe threats as opportunities.

**Research limitations/implications:** Three-case sectoral focus limits generalization; single-year analysis cannot reveal longitudinal evolution. Future research should extend analysis cross-sectorally, track visualization evolution, and investigate actual stakeholder report usage patterns.

**Practical implications:** Companies should embrace analytical visualization as credibility foundation and balance emotional elements with transparency. Investors and civil society should recognize chart avoidance as red flag, develop semiotic analytical capabilities, and demand visualization transparency through format-oriented reporting standards.

**Social implications:** Findings reveal fundamental gap between CSRD regulatory objectives and documented practices, suggesting content-focused regulation enables sophisticated greenwashing when format requirements are absent, informing regulatory development and enhancing civil society capacity for critical ESG report evaluation.

**Originality/value:** First systematic comparative analysis of ESG visualization strategies in Central-Eastern European retail under CSRD implementation. Advances literature by identifying visual greenwashing as sector-specific systematic architecture integrating multiple elements, demonstrating how mandatory frameworks enable compliance without ensuring transparency.

**Keywords:** ESG reporting, data visualization, greenwashing, visual rhetoric, CSRD, Lidl, Biedronka, Żabka.

**Category of the paper:** Research paper.

## 1. Introduction

Environmental, Social, and Governance (ESG) reporting has transitioned from voluntary corporate social responsibility practice to regulatory requirement across the European Union. The Corporate Sustainability Reporting Directive (CSRD), effective from 2024, mandates that approximately 50,000 European companies - including major Polish retailers - adopt standardized disclosure frameworks (European Parliament and Council, 2022). This regulatory shift raises critical questions about how companies communicate sustainability performance beyond mere compliance with reporting frameworks.

Visual communication represents a particularly consequential yet under-studied dimension of ESG reporting. While academic attention has focused extensively on textual disclosure content, narrative strategies, and framework adoption (Hahn, Kühnen, 2013; Dumay et al., 2016), the visual elements occupying substantial report real estate - charts, infographics, photographs, diagrams - have received limited systematic analysis. This gap is especially pronounced in Central and Eastern European contexts, where emerging ESG reporting practices intersect with distinct market conditions, consumer expectations, and organizational cultures.

Visual elements serve strategic communication functions beyond simple information transfer. Research demonstrates that companies use graphs selectively to emphasize positive performance (Beattie, Jones, 2008), employ photographs to manage legitimacy impressions (Hrasky, 2012), and leverage visual complexity to obscure poor performance (Cho et al., 2012). Yet comprehensive understanding of how visualization choices reveal underlying communication strategies remains limited, particularly in comparative organizational contexts.

This study addresses these gaps through systematic analysis of ESG visualization strategies employed by three leaders in Polish retail: Lidl Polska, Biedronka, and Żabka. These companies represent distinct business models (international discounter, Portuguese-owned market leader, Polish convenience chain), ownership structures (German corporate, Portuguese public, private equity), and ESG maturity levels, creating natural variation that enables pattern identification across organizational contexts.

### **1.1. Contribution to scholarly conversations**

This research contributes to three ongoing academic debates. First, it engages with the transparency versus legitimation debate (Hahn, Lülfs, 2014; Cho et al., 2015): Do companies use ESG reports primarily to inform stakeholders transparently, or to manage impressions and maintain legitimacy? Visual analysis offers new empirical evidence, as visualization choices reveal underlying communication priorities - whether companies emphasize data precision (transparency orientation) or emotional connection (legitimation orientation).

Second, the study addresses the standardization versus contextualization tension (Dumay et al., 2016; Bebbington, Unerman, 2018): As ESG reporting becomes mandatory, how do companies balance regulatory compliance with distinctive brand communication? Visualization strategies may reveal how organizations navigate this tension, particularly when global frameworks meet local market contexts.

Third, this research contributes to the visual turn in accounting and corporate communication research (Davison, 2015): moving beyond exclusive focus on textual disclosure to understand how visual rhetoric shapes stakeholder perceptions of corporate performance. This study extends visual communication theory into the sustainability reporting domain through systematic, multi-dimensional analysis.

### **1.2. Research context: Polish retail sector**

The Polish retail sector presents a particularly compelling context for several reasons. Regulatory pressure intensifies as Polish retailers face increasing ESG scrutiny from EU directives, stock exchange requirements (for listed parent companies), and evolving consumer expectations. The direct public visibility creates high reputational sensitivity, making ESG communication strategies consequential for brand perception and competitive positioning. Sector-specific challenges include supply chain complexity, packaging waste, labor practices, food waste, and energy consumption - topics requiring clear communication to diverse stakeholders.

Market maturity combines international players bringing established ESG practices with domestic companies developing localized approaches, creating rich comparative opportunities. Rising consumer awareness shows that Polish consumer consciousness regarding sustainability has grown significantly, with surveys indicating increasing willingness to consider environmental factors in purchasing decisions (PwC, 2024).

### **1.3. Research objectives and questions**

The main research question guiding this exploratory study is: How do Polish retail leaders differ in their ESG data visualization strategies, and what do these differences reveal about their underlying communication approaches and organizational contexts?

This broad question is operationalized through four specific research questions:

- RQ1 (Structural Patterns): How do reports differ in volume, organization, and proportion of visual content, and what do these architectural choices reveal about communication priorities?
- RQ2 (Visualization Typologies): What types of visual elements dominate in each report, and how do companies balance data-driven versus emotion-driven visualizations?
- RQ3 (Communication Strategies): Do visualization patterns align with informational, narrative, or emotional strategies, and how do strategies relate to organizational characteristics?
- RQ4 (Brand Identity Integration): How does ESG visual strategy align with overall brand communication, and do companies leverage brand elements consistently?

Together, these questions enable systematic comparison of visualization practices while uncovering the strategic logics shaping how Polish retailers construct visual narratives of sustainability performance.

## **2. ESG reporting and data visualization in retail: literature review**

### **2.1. ESG reporting in retail**

In ESG reporting in retail is gaining strategic importance, but the industry faces challenges arising from its complex operational structure and strong dependence on global supply chains. Key difficulties include discrepancies and lack of standardization in reporting, limited transparency, low data comparability, and the need to integrate ESG indicators into daily operations (Bataeva, 2024; Paranhos et al., 2024). The challenge remains not only to standardize indicators, but also to ensure their consistency across supply chains that often include thousands of entities (Kalyanam, 2025).

The introduction of the CSRD (Corporate Sustainability Reporting Directive) directive in 2024 significantly changes ESG reporting rules in the European Union, including in Polish retail. New regulations impose an obligation for detailed reporting on environmental, social, and corporate governance issues on all large enterprises and listed SMEs. Reports must comply with the European Sustainability Reporting Standards (ESRS), covering over one hundred ESG indicators, and data is subject to independent audit (Čarnogurský, 2025; Matuszak-Flejszman et al., 2024). The aim of the regulation is to increase the comparability and credibility of non-financial information across the EU (Rega, 2025; Raimo et al., 2025). In Poland, the number of companies subject to reporting obligations will increase from about 300 to 3000-4000, covering not only large retail chains, but also their suppliers and business partners (Kos, 2025).

Regulatory pressure extends to the entire supply chain, as large companies require compliance with ESG principles from their contractors (Čarnogurský, 2025; Allgeier, Feldmann, 2023). For many smaller entities, this is an impulse to implement standards despite the lack of formal obligation. However, CSRD implementation can also bring benefits—improved access to financing, increased investment attractiveness, and strengthened reputation—although it is associated with the risk of greenwashing and high implementation costs (Pawlak, 2024; Matuszak-Flejszman et al., 2024).

Transparent and credible ESG (Environmental, Social, Governance) reporting has become a key tool for building and protecting corporate reputation. Research indicates that the retail and logistics sector is particularly advanced in using ESG reporting to build reputation, which results from close contact with consumers and pressure for transparency (Yu, 2025; Tamasiga et al., 2024). Companies that openly and consistently communicate their ESG activities are perceived as more ethical and trustworthy, which strengthens stakeholder loyalty (Yu, 2025; Odriozola, Baraibar- Diez, 2017; Meng et al., 2023), builds better relationships with the community and investors (Khamisu, 2024). In the retail industry, where supply chains are subject to particular public scrutiny, ESG communication supports dialogue with stakeholders and builds competitive advantage (Kalyanam, 2025; Tamasiga et al., 2024).

The impact of ESG reporting on reputation is based on several mechanisms. First, stakeholder perception—report transparency reduces information asymmetry and signals authentic commitment to sustainable development (Meng et al., 2023). Second, investor and public attention strengthens the reputation effect when ESG data is easily accessible and comparable (Bazrafshan, 2023). Third, quality and credibility of reports—standardized, verified, and data-based disclosures build trust more effectively than narrative-based declarations (Odriozola, Baraibar- Diez, 2017). Finally, technological innovations, especially artificial intelligence-based tools, streamline data collection and increase recipient trust (Ács et al., 2025).

## **2.2. Visualization in corporate communication**

Contemporary corporate communication increasingly uses visualization as a strategic tool, crucial for building organizational identity and reputation. Images, charts, colors, and graphic layout become not only aesthetic elements, but also means of conveying values, credibility, and emotions (Degreef, 2024). As Yadav (2025) indicates, the development of non-financial reporting leads to combining quantitative data with narrative and visual symbolism, which allows companies to more effectively present their commitment to sustainable development.

The theory of visual rhetoric examines how images, colors, typography, and graphic layout convey meanings and emotions, shaping how the company is perceived by stakeholders (Greenwood et al., 2019; Davison, 2013). Visual elements serve not only an aesthetic, but also persuasive and narrative function—they explain, reinforce, or contrast with the content of

messages. Visual design based on rhetorical principles allows creating coherent messages that build credibility and support brand strategy (Veltos, 2009; Davison, 2013).

A central concept in this context is corporate visual identity (CVI), encompassing name, logo, color scheme, typography, slogan, and other graphic elements. CVI ensures recognizability, expresses organizational values, and supports its reputation. Research indicates that individual CVI elements serve different functions: logo and name strengthen recognition, colors build mood and distinguish the brand, typography emphasizes professionalism, and slogan communicates values (Bosch et al., 2006; Lyu, 2023). Contemporary analyses of visual rhetoric combine semiotic approaches with content analysis methods, which enables examining visual aspects of reports and corporate documents (Greenwood et al., 2019). As a result, visual rhetoric becomes not only an aesthetic addition, but a key element of communication strategy, strengthening the identity and credibility of contemporary companies.

Visualization plays a growing role in corporate communication, allowing simplification of complex data and supporting decision-making. According to Cognitive Load Theory (CLT), effective visualizations should minimize excessive mental load on recipients, which increases understanding and message effectiveness. Research indicates that properly designed dashboards, graphs, and business models reduce cognitive load, facilitating information interpretation (Henike et al., 2020; Ke et al., 2023). However, excessive detail, unclear layout, or too much complexity can have the opposite effect—increase load and hinder perception (Kopacz et al., 2022; Huang et al., 2009).

The most commonly indicated principles of effective visualization include: clarity and simplicity (Cook, 2006; Eese et al., 2025), adaptation to recipient competence (Ke et al., 2023; Hesson, 2021), and the modality effect, i.e., combining image with sound, which can reduce cognitive load in less experienced users (Banu et al., 2024; Bancilhon et al., 2023). The principle of simplicity involves eliminating unnecessary elements, using clear labels and appropriate contrast (Schwabish, 2021). Visualization readability should enable quick and intuitive understanding of information while avoiding excessive graphic elements that may distract the recipient's attention (Few, 2012). Well-designed visualization should guide the recipient's eye from the most important elements to less significant ones. Appropriate use of contrast, font sizes, colors, and arrangement allows building logical visual order (Knafllic, 2015). Meanwhile, unified color schemes and consistent use of colors support brand recognition and help distinguish data categories (Knafllic, 2015). It is important that the choice of visualization type results from the communication goal and recipients' knowledge level (Ancker et al., 2023; Schwabish, 2021; Mitchell, Deckard, 2025), and each visualization should be based on reliable and verified data. Transparent presentation of sources minimizes the risk of greenwashing and strengthens stakeholder trust (Deloitte, 2024). Visualizations should also tell a story—guide the recipient through data and emphasize main conclusions (Brehmer, Kosara, 2021; Kernbach et al., 2015). Accessibility is gaining increasing importance, i.e., designing according to usability and inclusiveness standards (Strantz, 2021).

In summary, effective data visualization in business is based on four principles: simplicity, adaptation, accessibility, and narrativity. Their consistent application not only increases recipient understanding and engagement, but also strengthens the credibility and strategic effectiveness of corporate communication.

### **2.3. Data visualization strategies**

Data visualization strategies can be divided into three main approaches: informational, narrative, and emotional. Each serves different communication purposes—from conveying knowledge and supporting decisions to engaging and evoking emotions.

Informational visualizations focus on transparency, accuracy, and effective data transmission. They use classic forms, such as bar charts, line graphs, or scatter plots, selected according to data type and recipient knowledge level. The goal is maximum comprehensibility and ability to compare information. Although they support the decision-making process and memorization, they often lack an emotional component (Mildau et al., 2024; Garretón et al., 2023). In relation to ESG reports, informational visualization ensures comparability of ESG indicators between periods and entities (Yadav, 2025). Primarily charts, tables, and infographics are used here, which support report readability and its control function. The goal is to legitimize company actions through numbers, i.e., showing progress in emission reduction, energy consumption, or improvement of working conditions.

Narrative visualizations combine data with story elements, guiding the recipient through a logically structured message. They use sequence, flow, and interactivity to give data meaning and context. Typical of journalism and education, they foster engagement and deeper understanding (Segel, Heer, 2010; Sakarang et al., 2025). ESG reports use storytelling elements here—photos, quotes, descriptions of social initiatives, to give data human meaning. The goal is to build trust and emotional connection with the recipient by showing that numbers stand behind real actions and values (Degreef, 2024).

Emotional visualizations aim to evoke an affective reaction and shape attitudes. Through color, metaphor, and visual forms, they can strengthen trust, memorization, and persuasion. Research indicates that emotion-based visualizations have a stronger impact than illustrations and more effectively engage recipients, especially when combined with narrative (Garretón et al., 2023; Blair et al., 2024). As Degreef (2024) notes, aesthetics, color schemes, and iconography (e.g., green, nature, people) can shape the perception of a company as ethical and pro-ecological regardless of actual results.

Effective visual communication requires a balance between clarity, narrativity, and emotional impact. In practice, most ESG reports combine elements of all three strategies. As Deloitte (2024) indicates, mature reporting is based on a balance between data credibility (informational strategy), narrative authenticity (narrative strategy), and visual attractiveness (emotional strategy). Integration of these approaches allows creating a coherent message that

is simultaneously understandable, engaging, and compliant with formal ESG reporting requirements (Yadav, 2025).

Data visualization is a key element of an effective communication strategy, enabling quick understanding of complex information and supporting decision-making processes. Their importance grows in an environment of information overload, where simplicity, transparency, and attractive form become conditions for effective message delivery. Data visualizations allow recipients to see patterns, trends, and dependencies that would be difficult to identify in raw numerical compilations. Their effectiveness depends on adapting the form to the communication goal, recipients' knowledge level, and socio-cultural context (Franconeri et al., 2021; Ofori et al., 2025).

Effective visualization requires several essential elements. First, adaptation to the recipient—both in terms of graphic form selection and data detail level (Franconeri et al., 2021; Schwabish, 2021). Second, clear communication goal, as different types of visualization support memorization, and others—attitude or behavior change (Ancker et al., 2023). Third, design consistent with perception principles, which includes using Gestalt principles, avoiding cognitive overload, and using familiar graphic patterns (Midway, 2020). Finally, ethics and credibility are extremely important, because transparency and reliability in data presentation build trust and legitimize the message (Mathaisel, 2024).

#### **2.4. Research gaps and study positioning**

The existing research on visual communication in corporate and ESG reporting establishes that visual elements are strategic and purposeful, not merely decorative, serving functions like legitimacy building and impression management (Preston et al., 1996; Graves et al., 1996; Hrasky, 2012). Foundational work documented systematic patterns of visual manipulation, including measurement distortion and selectivity bias favoring positive performance data in both annual reports and sustainability reports (Beattie, Jones, 2000, 2008; Jones, 2011). Visual elements are also key mechanisms in greenwashing, featuring in tactics like using rhetoric without substance or selective emphasis (Lyon, Montgomery, 2015; Delmas, Burbano, 2011; Cho et al., 2012), and they interact dynamically with textual content to construct organizational narratives (Davison, 2007, 2015). Despite these insights confirming visual elements' role in strategic functions and potential manipulation.

The literature review reveals several important gaps that limit comprehensive understanding of ESG visualization strategies and their effectiveness across different contexts. These gaps provide the foundation and justification for the present study's approach and contribution.

Existing research focuses predominantly on Anglo-American or Western European contexts, particularly the United Kingdom, United States, and Australia. Central and Eastern European reporting practices remain significantly under-studied, despite these regions experiencing rapid regulatory transformation through EU directives such as CSRD and representing distinct institutional, cultural, and market contexts. The Polish retail sector,

operating under evolving regulatory requirements while serving increasingly sustainability-conscious consumers, represents an important yet under-examined case for understanding ESG visualization practices.

While existing studies examine corporate reporting broadly or focus on heavy industry and extractive sectors, few systematically investigate how sector-specific ESG challenges, stakeholder expectations, and operational characteristics shape visualization strategies. The retail sector presents distinctive characteristics—direct consumer relationships, complex global supply chains, visible sustainability impacts, and strong reputation sensitivity—that warrant dedicated analysis of how these factors influence visual communication approaches.

Most existing studies examine isolated visual elements—graphs, photographs, or specific design features—rather than analyzing holistic visualization strategies that integrate multiple elements. Understanding how companies strategically combine informational, narrative, and emotional visualization approaches, and how different visual components work together to create coherent sustainability narratives, requires more comprehensive analytical frameworks than currently dominate the literature.

Few studies employ systematic comparative approaches within specific sectors to identify patterns related to organizational characteristics such as size, ownership structure, market position, or actual sustainability performance. Comparative analysis is essential for distinguishing between industry-wide visualization conventions and company-specific strategic choices, and for understanding what factors drive variation in visualization quality and approaches.

Research often applies single theoretical lenses—either legitimacy theory, impression management theory, or stakeholder theory—rather than developing integrated frameworks that recognize the multiple simultaneous functions of ESG visualization. Visual communication in sustainability reports serves informational, persuasive, aesthetic, and strategic purposes concurrently, requiring theoretical approaches that can accommodate this complexity rather than privileging one dimension over others.

Much existing research predates recent mandatory ESG disclosure regulations, particularly the EU's CSRD directive that significantly transforms reporting requirements and standardization. Understanding how regulatory mandates shape visualization practices, quality, and strategic approaches requires analysis conducted under contemporary regulatory frameworks rather than relying primarily on findings from voluntary reporting contexts.

This study addresses these gaps through systematic, multi-dimensional comparative analysis of contemporary ESG visualization strategies in the Polish retail sector. By examining reports produced under CSRD requirements, employing integrated analytical frameworks combining visual rhetoric, semiotic analysis, and information design perspectives, and conducting within-sector comparisons to identify patterns and variations, this research contributes to more comprehensive understanding of ESG visualization as a strategic communication practice shaped by regulatory, sectoral, and organizational factors.

### **3. Methodology**

#### **3.1. Research design**

This study employs an exploratory multiple case study approach (Yin, 2018; Eisenhardt, 1989) to investigate ESG visualization strategies across three Polish retail leaders. Case studies are appropriate when research questions focus on "how" and "why" phenomena occur, researchers cannot manipulate events, context is crucial, and boundaries between phenomenon and context are unclear (Yin, 2018).

We employ replication logic rather than sampling logic. Each case serves as an independent "experiment" testing whether patterns observed in one case appear in others (literal replication) or whether predictable differences emerge based on theoretical expectations (theoretical replication). With three cases, we can identify patterns common across all cases (suggesting sector-level norms), systematic differences related to organizational characteristics (suggesting contextual influences), and unique approaches warranting further investigation.

This study adopts an exploratory, theory-building approach rather than hypothesis testing. While we anticipate certain patterns based on organizational characteristics, we remain open to unexpected findings and emergent themes. Exploratory design enables discovery of unanticipated patterns, inductive theory development, flexibility, rich contextualized understanding, and avoidance of confirmation bias.

#### **3.2. Case selection**

This study analyzed three retail chains: Lidl (Lidl Sp. z o.o. sp. k.), Biedronka (Jerónimo Martins Polska S.A.), and Żabka (Żabka Polska S.A.). These companies represent key players in the Polish market but differ significantly in terms of business model, ownership structure, and ESG reporting maturity level. This sample selection allows for an in-depth comparison of ESG visualization strategies in the reports of companies with distinct organizational identities and market conditions.

Lidl Polska is one of the leading retail entities in the country, operating since 2002 as part of the international Schwarz Group (PAP Biznes, 2025a). The chain has over 950 stores served by 13 distribution centers and employs approximately 29,000 employees. In 2025, the company announced the creation of additional locations and investments worth approximately PLN 2 billion, covering logistics development and the implementation of pro-ecological solutions (Bankier.pl, 2025; PAP Biznes, 2025b).

Lidl's operations are based on an efficient discount model - low prices, high quality, and simplicity of assortment - combined with advanced logistics solutions and partnership cooperation with Polish suppliers, numbering over 850 (Poradnik Handlowca, 2025). The company promotes products of domestic origin, supports the export of Polish food,

and was responsible for generating 11.4 billion PLN in added value for the economy in 2024 (ESG, Trends, 2025).

Lidl Polska implements a broad sustainable development strategy encompassing environmental, social, and ethical goals, aligned with the international CSR model for 2020-2025 (KimJestesmy.lidl.pl, 2022). It collaborates with WWF Poland Foundation on biodiversity protection, implements the REset Plastic program aimed at reducing plastic consumption by 30% by 2025, and invests in the energy efficiency of retail facilities (Gazeta Prawna, 2025). Additionally, the company consistently increases wages and employment - in 2025, it allocated 200 million PLN for salary increases and new jobs (PAP Biznes, 2025b).

Biedronka, owned by the Portuguese Jeronimo Martins Group, is the largest retail chain in Poland, developing continuously since 1995. In 2025, the network comprises over 3800 stores in more than 1300 localities, served by 17 distribution centers and employing over 84.000 employees (Odpowiedzialna Biedronka, 2024; Onas.Biedronka.pl, 2025). Every day, its stores are visited by approximately 5 million customers, confirming its status as the undisputed leader of the Polish retail market (Money.pl, 2025; Wiadomości Spożywcze, 2025).

Biedronka's business model combines price accessibility with dynamic development of private labels (over 500 new products introduced in 2024) and close cooperation with local suppliers - 94% of food products in the offering come from Polish producers (Odpowiedzialna Biedronka, 2024). In financial terms, Biedronka accounts for nearly 71% of the entire Jeronimo Martins Group's revenue, generating 12.4 billion euros in revenue in the first half of 2025 and an EBITDA margin of 7.7% (Wiadomości Handlowe, 2025; Bankier.pl, 2025).

The chain consistently develops its ESG and sustainable development strategy through investments in photovoltaics (1695 stores with panels in 2024), plastic reduction (1219 tons less annually), greenhouse gas emission reduction (-18.5%), and activities supporting biodiversity and circular economy (Raport ESG Biedronka, 2024). Biedronka implements the slogan "Because the future has a future," integrating environmental, social, and economic responsibility as equal elements of its corporate identity (Media.Biedronka.pl, 2024).

Żabka is the largest convenience store chain in Poland (and a dynamically growing retailer in the region), which at the end of June 2025 had 11.793 locations in Poland and Romania - with the vast majority operating in a franchise format (Bankier.pl, 2025; Żabka Group, 2025). Żabka's business model is based on support and partnership relations with franchisees and a system of modern logistics and digital solutions (Żabka Raport, 2025; Business Insider, 2023). The chain continuously expands its convenience ecosystem offering, investing in automated formats (Żabka Nano), development of digital services, and AI technologies supporting operational decisions (Żabka Group, 2025; Żabka Group, 2024).

Żabka is a leader in implementing an advanced ESG strategy - for the third consecutive year, it has achieved the highest ranking scores (EcoVadis, Sustainalytics), and its Annual Report for 2024 was prepared according to CSRD directive requirements (PAP MediaRoom, 2025; ESG Trends, 2024). The chain significantly reduces GHG emissions (-31% y/y), reduces

the share of primary plastic, and the sales value of private labels supporting a sustainable lifestyle reached PLN 1.8 billion in 2024 (GF24, 2025; PAP MediaRoom, 2025). Table 1 presents the basic characteristics of the analyzed companies.

**Table 1.**  
*Main characteristics of Lidl, Biedronka, and Żabka stores*

| Category                     | Lidl                                                                             | Biedronka                                                                                      | Żabka                                                                  |
|------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Business model               | International discounter (Schwarz Group)                                         | Portuguese discounter (Jerónimo Martins)                                                       | Convenience chain (franchise)                                          |
| Positioning                  | Cheaper shopping, better quality                                                 | Price leader                                                                                   | Convenience and proximity                                              |
| Number of stores in Poland   | approx. 950                                                                      | approx. 3800                                                                                   | approx. 12.000                                                         |
| Target group                 | Families, conscious consumers                                                    | Mass market, price-sensitive customers                                                         | Young urbanites, impulse shopping                                      |
| Capital and cultural context | Germany (reporting culture)                                                      | Portugal (JM group)                                                                            | Poland (CVC Capital Partners)                                          |
| ESG maturity                 | Very high (influence of German regulations)                                      | High (stock exchange requirements in Portugal)                                                 | Medium, growing (local brand)                                          |
| Mission                      | Our mission is to provide our customers with high-quality products at low prices | Biedronka offers carefully selected products of the highest quality at consistently low prices | Żabka Group's mission is to create value by simplifying people's lives |

Source: own work based on: Żabka Group (2024). Raport roczny 2024; Onas.Biedronka.pl. (2025); KimJestesmy.lidl.pl. (2022).

### 3.3. Data sources

The study employs both primary and secondary data sources to enable comprehensive analysis of sustainability reporting practices while maintaining methodological rigor appropriate for a comparative case study design.

The primary data consists of the most recent published ESG/sustainability reports in Polish from each of the three companies, specifically the 2023 or 2024 editions depending on availability at the time of data collection. The decision to analyze Polish-language reports exclusively is grounded in several methodological and theoretical considerations. First, these reports represent the companies' primary communication channel with their core Polish stakeholders, including employees, local communities, Polish consumers, regulatory bodies, and domestic investors. Second, this approach aligns with the study's focus on how multinational and domestic companies construct and communicate sustainability legitimacy within the specific institutional and cultural context of the Polish market. Third, analyzing reports in a single language ensures consistency in interpretation and avoids complications arising from translation differences or strategic variations between Polish and international versions of reports.

Secondary data sources provide essential context for interpreting primary data and include: company background information from corporate websites and press releases; industry reports on the Polish retail sector and its sustainability challenges; ESG rating assessments and

benchmarks from recognized agencies; academic literature on sustainability reporting, discourse analysis, and legitimacy theory; and trade press articles covering the studied companies' sustainability initiatives. These sources enable triangulation of findings and situate the analysis within broader industry and theoretical contexts.

### **3.4. Analytical framework**

Analysis proceeds systematically across four interrelated dimensions, integrating quantitative measurement with qualitative interpretation to build a comprehensive understanding of how organizations deploy visual communication in sustainability reporting. This multi-dimensional approach captures both the technical characteristics of visual elements and their broader strategic and semiotic functions.

The framework begins with foundational analysis through structure and scope (Dimension 1) and visualization inventory (Dimension 2). The structural dimension establishes baseline characteristics including total page count, visualization density, text-visual ratio, and section structure. Building on this foundation, the inventory systematically catalogues all visual elements using a comprehensive classification scheme that includes charts (bar, line, pie, histogram, scatter), tables (numerical, textual), infographics, photographs, maps, illustrations, icons and pictograms (symbols, storytelling elements), logos, and other graphic elements. This detailed taxonomy enables systematic tracking of visual diversity and patterns across the corpus, providing a quantitative profile of visual communication intensity and variety.

Semiotic analysis (Dimension 3) interprets meaning-making processes for exemplary visualizations through a systematic procedure that moves from sign inventory through multiple levels of interpretation. Analysis begins by cataloguing all visible elements and notable absences, then identifies signifiers and signifieds before examining both denotative (literal) and connotative (cultural, emotional) meanings. The procedure advances to decode cultural conventions and myths that naturalize particular values and power relations, examines paradigmatic choices (what was selected over alternatives) and syntagmatic relationships (how elements combine to create meaning), and contextualizes findings within historical, cultural, and organizational settings.

This multilayered approach reveals how organizations leverage visual semiotics to shape stakeholder interpretation and construct particular narratives about sustainability performance.

The framework then addresses functional intent and quality through communicative functions (Dimension 4). Functional analysis identifies the primary communicative intent behind visualizations, coding each for its dominant purpose: informational (presenting factual data), comparative (enabling performance assessment), narrative (telling stories, showing processes), interpretive (explaining context or methodology), emotional (building connection, demonstrating values), or persuasive (convincing of commitment or leadership).

### 3.5. Quality and rigor

Research quality was ensured through systematic application of trustworthiness criteria appropriate for qualitative research, addressing credibility, transferability, dependability, and confirmability throughout the analytical process. These criteria provide a comprehensive framework for establishing rigor while recognizing the interpretive nature of semiotic and qualitative analysis.

Credibility was established through multiple strategies that strengthen confidence in findings. Thick description provided rich, detailed accounts of visual communication practices within each case, enabling readers to assess the adequacy of interpretations. Triangulation operated across multiple data sources (reports, organizational documents, contextual materials) and analytical perspectives (quantitative inventories, semiotic interpretation, strategic analysis), allowing convergence of evidence from different vantage points. Extended engagement with each case enabled deep familiarity with organizational visual communication strategies, while a consensus coding approach for interpretive dimensions reduced individual bias and enhanced inter-subjective agreement.

Transferability and dependability were addressed through comprehensive documentation and systematic procedures. Transferability was enhanced by providing detailed case descriptions that allow readers to assess applicability to their contexts, clearly specifying study boundaries and scope, employing analytical rather than statistical generalization to extend insights beyond the immediate sample, and documenting variation across cases to illuminate contextual factors shaping visual communication choices. Dependability was ensured through a detailed analytical protocol that standardized procedures across cases, systematic documentation of all analytical decisions and processes, and consistency checks to verify that the framework was applied uniformly.

Finally, confirmability was maintained through practices that enhance objectivity and guard against predetermined conclusions. All interpretations remained grounded in documented evidence from the reports themselves, with claims traceable to specific visual elements and textual content. Reflexivity about the researcher's perspective, background, and potential biases was maintained throughout analysis, acknowledging how these might shape interpretation. Alternative explanations for observed patterns were actively considered and evaluated against evidence. Negative case analysis identified instances that contradicted emerging patterns, either refining interpretations or acknowledging genuine variation rather than forcing all cases into predetermined categories.

### 3.6. Study Limitations

This study is subject to several limitations that qualify the scope and generalizability of findings, relating to sample characteristics, methodological constraints, and analytical boundaries. Acknowledging these limitations is essential for appropriate interpretation and application of results.

Sample and scope limitations constrain the breadth of insights. The small sample size of three cases enables rich, in-depth analysis but limits the range of visual communication strategies captured and the ability to identify comprehensive patterns across the retail sector. Sectoral focus on retail means that findings reflect characteristics of this industry - with its emphasis on consumer relationships, brand identity, and stakeholder visibility - and may not transfer directly to industries with different reporting pressures, stakeholder configurations, or communication norms. The temporal snapshot approach, analyzing single-year reports, captures current practices but cannot reveal how visual communication strategies evolve over time in response to changing regulations, stakeholder expectations, or organizational learning. Geographic specificity to the Polish context introduces cultural, regulatory, and market factors that differ from other regions, potentially limiting transferability to organizations operating under different institutional conditions.

Methodological limitations arise from data sources and analytical approaches. Analysis is restricted to published reports, which represent carefully curated organizational communication rather than internal deliberations, discarded alternatives, or the full range of sustainability activities. This data source limitation means the study examines official organizational self-presentation rather than actual performance or decision-making processes. Qualitative semiotic analysis inherently involves researcher interpretation and judgment, introducing subjectivity even when systematic procedures and credibility measures are employed. Language considerations are also important - analyzing reports originally published in Polish while writing the research article in English introduce potential issues of translation, cultural nuance, and linguistic framing that may affect interpretation.

Finally, perspective and inference limitations shape what can be concluded from findings. The study analyzes the producer perspective - what organizations communicate and how - but does not incorporate the receiver perspective of how stakeholders actually interpret, use, or respond to visual communication in reports. Publication bias is inherent in self-published sustainability reports, which organizations use strategically to manage reputation and may selectively emphasize positive information while downplaying challenges or failures. The case study methodology reveals associations and patterns but cannot definitively establish causality, observed relationships between organizational characteristics and visual communication strategies are suggestive rather than conclusive, as multiple factors operate simultaneously and experimental control is impossible in naturalistic organizational settings.

## 4. Resultants

### 4.1. Case 1: Lidl Polska

#### 4.1.1. *Report Structural Profile*

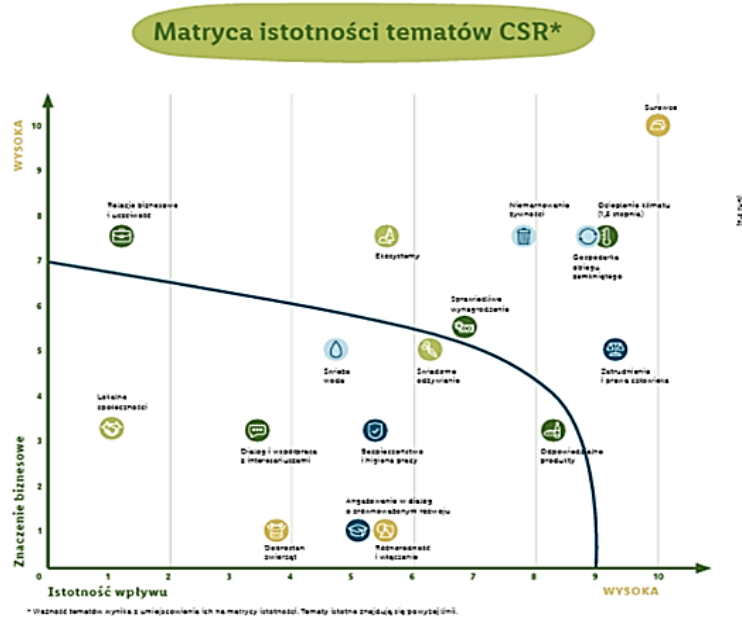
The Lidl Polska sustainability report comprises 141 pages organized into nine thematic sections. The document opens with foundational elements including a CEO letter, company information, responsible business strategy, materiality analysis, and goal progress tracking. The core content structures around five sustainability pillars: Climate Protection (limiting warming to 1.5°C), Biodiversity Respect (ecosystem preservation), Resource Protection (subdivided into raw materials, circular economy, food waste prevention, and water conservation), Fair Operations (with six subsections covering employment, wages, business relations, diversity, animal welfare, and corporate citizenship), and Health Promotion (conscious nutrition). The report concludes with stakeholder engagement dialogue, responsible products, and methodological information. This architecture reflects strategic emphasis on environmental and social governance integration with particular attention to supply chain responsibility and stakeholder inclusivity.

#### 4.1.2. *Typological distribution*

The report contains 287 visual elements across 141 pages, yielding 2.04 elements per page. Photographs dominate with 90 instances (31.4%), indicating preference for authentic, representational employees, stakeholders, products and sustainability initiatives pictures. Icons and pictograms provide 65 instances (22.6%), serving as efficient symbolic communication for processes and concepts. Other graphic elements contribute 47 instances (16.4%), while illustrations add 27 instances (9.4%). Logos appear 23 times (8.0%), infographics 20 times (7.0%), and tables 14 times (4.9%). Remarkably, charts appear only once (0.3%), indicating near-absence of conventional data visualization. Maps are completely absent. This profile reveals a photography-dominant strategy privileging authentic imagery and symbolic representation over quantitative visualization.

#### 4.1.3. *Semiotic analysis of exemplars*

The subject of analysis is a graphic representation of a materiality matrix, consisting of a two-dimensional coordinate system containing 17 topics related to Corporate Social Responsibility (Figure 1). The vertical axis represents “business significance” (scale 0-10), while the horizontal axis indicates “impact materiality” (also 0-10). The central element of the composition is a blue curve connecting points in the 7-9 range, which divides the space into two areas. Individual topics are represented by icons containing simple symbols in circles on colored backgrounds - 9 are located below the line, 8 above. The color palette includes five groups: dark green (5 icons), olive (3), light blue (3), dark blue (3), and dark gold (3). The whole is accompanied by a title on a green-olive background and the marking [GRI 3-2], indicating compliance with Global Reporting Initiative standards.



**Figure 1.** CSR materiality matrix.

Source: Lidl Polska. Raport, p. 27.

The matrix operates through a data visualization code characteristic of corporate reporting. The coordinate system suggests objectivity and measurability, the application of a boundary curve introduces binary categorization (material/immateral), and the hierarchical arrangement of elements indicates the possibility of precise resource allocation. This system requires the recipient to be familiar with ESG reporting conventions and materiality analysis methodology consistent with GRI standards. A significant absence is the interpretive key for colors - although the color scheme remains consistent with the entire report, the recipient lacks an unambiguous tool for decoding thematic categories.

The seemingly neutral presentation of data carries a number of implications that go beyond literal representation. The matrix suggests that ethical and social issues are measurable and that there exists an objective line of demarcation separating important from less important topics. The placement of “raw materials” in the upper right corner - highest in the hierarchy of both dimensions - signals a pro-environmental approach, yet simultaneously reveals a paradox: what is positioned highest represents areas where the company actually has the lowest impact. Analysis of topic placement reveals that issues such as animal welfare or local communities have been deemed less material, while matters directly related to business interest (raw materials, supply chain) dominate the “high materiality” space. The correlation between both axes suggests a natural convergence of company and societal interests, which constitutes a significant simplification of reality.

The matrix naturalizes a series of ideological assumptions characteristic of contemporary corporate capitalism. First, the presentation of social and environmental issues as measurable and mappable on a two-dimensional scale suggests that ethics can be quantified and subjected to rational management - this is the myth of ethics objectification. Second, the visualization reinforces the belief that enterprises possess the power to effectively solve social and environmental problems, while simultaneously omitting the fact that they are often their source. The most striking discovery is the disproportion in the perception of materiality - topics placed above level 9 show that how the environment affects business is treated as more than four times more important than business's impact on the environment, revealing the actual primacy of corporate interest. Additionally, the static character of the matrix suggests that ESG priorities are stable and can be planned in advance, ignoring the dynamic nature of social and environmental challenges.

The sequence of elements and their spatial relationships create a coherent narrative. The upper right corner as the “highest” and “furthest advanced” place functions culturally as a space of success and progress. The arrangement of icons creates a visual hierarchy that guides the viewer's eye from “less material” social issues toward “key” business matters. The presence of paratextual elements (title, footnote, GRI marking) gives the matrix an appearance of scientific credibility and professionalism. The correlation between axes - with few exceptions - reinforces the impression of natural harmony between business objectives and social responsibility.

The matrix functions within the context of CSRD directive requirements and GRI standards, which defines its formal audience - auditors, ESG analysts, and informed stakeholders familiar with reporting methodology. For the average reader, the document remains seemingly readable, yet its semantic complexity may mislead, suggesting actual actions rather than an analysis of topic materiality.

Semiotic analysis reveals a fundamental contradiction between the tool's declared function (objective assessment of topic materiality) and its actual operation as an instrument for legitimizing corporate priorities. The matrix, operating through the language of objectivity and international standards, naturalizes a worldview in which the enterprise's interest remains paramount over social and environmental issues, while simultaneously masking this hierarchy through the neutral language of metrics and professional data visualization.

The another object of analysis presents a photographic portrait of a young African woman in traditional attire, holding a large wicker basket filled with ripe cacao fruits (Figure 2). The composition is based on a medium portrait shot with direct eye contact, which builds an intimate relationship with the viewer. The background - blurred greens and browns suggesting tropical vegetation - concentrates attention on the figure and the exposed basket.



**Figure 2.** Photography – resource protection.

Source: Lidl Polska. Raport, p. 56.

The color scheme of the image creates a coherent narrative about harmony with nature. The dominant browns, beiges, oranges, and yellows - both in the woman's attire and in the cacao fruits - symbolize earth, maturity, and warmth. Characteristic is the deliberate omission of green in the clothing, which emphasizes the connection with the final product rather than with the plantation itself. The yellow-and-white headscarf and wicker basket function as signs of traditionalism and authenticity, signaling distance from modern civilization. The absence of machines, plastic, or contemporary devices reinforces the impression of temporal suspension.

Particularly significant is the woman's radiant, genuine smile - constructed as an expression of pride in her work, satisfaction, and contentment with her situation. Combined with her weathered hands, this creates a narrative about dignified, satisfying work close to nature.

The image activates several overlapping cultural codes. It evokes the convention of National Geographic photography - an aestheticized representation of "authentic" Africa, where tradition and nature remain untouched by modernization. This aligns with the "noble savage" trope - a figure living in harmony with nature, in their proper place, unburdened by civilizational progress. The Arcadian idyll is complemented by the fair trade code, signaling an equitable economic model not based on exploitation.

At the deepest level, the photograph naturalizes a series of ideological beliefs. It promotes the myth of fair capitalism, which allegedly leads to global prosperity while leaving traditional production structures intact. Simultaneously, it perpetuates the notion of Africa's technological backwardness as a natural and desirable state - tradition becomes a value in itself rather than an effect of structural inequalities.

The image reinforces postcolonial power relations: Europe/the West remains the consumer, Africa the supplier of raw materials, with this relationship presented as mutually beneficial. The woman as guardian of tradition and natural producer fits into a broader narrative about

simple living as the source of happiness, which justifies maintaining the status quo in the global value chain.

The photograph is addressed to the Polish middle class - environmentally conscious consumers seeking authentic, ethically sourced products. The promise of certification and support for small-scale farmers is meant to legitimize the act of consumption as an ethical choice, though it simultaneously maintains asymmetric economic relations. Paradoxically, the emancipatory rhetoric of fair trade coexists here with the perpetuation of imaginaries of Africa as a pre-modern space, locked in the eternal present of tradition.

#### **4.1.4. *Functional profile***

Functional analysis reveals 340 total functional instances across six categories. Informational functions lead with 115 instances, distributed across icons (38), logos (23), infographics and photographs (16 each), and tables (14). Emotional functions nearly match with 116 instances, dominated by photographs (62) and logos (23), indicating deliberate balance between rational disclosure and affective engagement. Persuasive functions appear 56 times, concentrated in logos and icons (23 and 18 respectively). Narrative functions contribute 24 instances, spread across illustrations and icons (7 each). Comparative functions appear minimally with 16 instances, while interpretive functions provide 13 instances. The near-perfect balance between emotional and informational functions represents the report's core architecture: equal investment in accountability and affective connection. Photographs serve primarily emotional purposes (68.9% of all photos), while icons function as informational workhorses. The minimal comparative and interpretive functions suggest confidence that emotional authenticity and factual transparency together constitute sufficient grounds for stakeholder trust.

## **4.2. Case 2: Biedronka**

### **4.2.1. *Report Structural Profile***

The Biedronka sustainability report comprises 131 pages organized into six streamlined sections. Opening with management letters and organizational context, the substantive content structures around three thematic pillars: environmental stewardship (caring for the environment), stakeholder relations (building responsible relationships), and corporate governance (managing responsibly). The report concludes with methodological transparency about reporting practices. This simplified, stakeholder-friendly architecture prioritizes thematic clarity over exhaustive categorization, reflecting accessibility-oriented communication philosophy. The tripartite substantive framework aligns with conventional ESG paradigms while maintaining organizational simplicity suitable for broad audience engagement.

#### 4.2.2. Typological distribution

The report contains 469 visual elements across 131 pages, yielding exceptionally high density of 3.58 elements per page. Other graphic elements overwhelmingly dominate with 218 instances (46.5%), encompassing mainly navigational elements, decorative borders and design elements. Photographs provide 103 instances (22.0%), serving as primary representational content. Icons and pictograms contribute 47 instances (10.0%), infographics 31 (6.6%), logos 26 (5.5%), tables 22 (4.7%), and illustrations 20 (4.3%). Charts appear only once (0.2%), while maps appear once as well. This profile reveals design-intensive, graphically elaborate approach fundamentally distinct from photography-dominant strategies, prioritizing visual branding, aesthetic appeal, and design cohesion as primary communication values.

#### 4.2.3. Semiotic analysis exemplars

The subject of analysis is a timeline presenting the chronology of a thirty-year period of Biedronka's operations in Poland, covering the years 1995-2019 (Figure 3). This visual artifact presents not only the commercial milestones of the enterprise but, above all, exposes the evolution of activities in the area of corporate social responsibility. The composition is based on a linear narrative structure, constructed through red arrows made of dashed dots that guide the viewer's eye and impose a specific reading direction.



**Figure 3.** Infographic Commemorating Biedronka's 30th Anniversary in Poland.

Source: Raport zrównoważonego rozwoju sieci Biedronka, p. 8.

The dominant element is the title in capital letters using a large, black font, while the date 1995 stands out with an enlarged, red, decorative typography - signaling the starting point of a success narrative. The remaining eleven dates are presented in a unified, simple font, creating a coherent visual rhythm. The white background and numerous empty spaces give the whole clarity and lightness, while the even distribution of three groups of red and yellow quadrilaterals - resembling confetti in corporate colors - introduces an atmosphere of celebration. The composition includes four logos (Caritas, the joint logo of Biedronka and PZPN, Clean

Tatras, Biedronka Health Academy) and four illustrations presenting selected initiatives (a competition, the Fresh Gang, a Go Bio brand product, the Good Bag).

At the denotational level, we are dealing with a simple chronological juxtaposition of events from the company's history. However, the true meaning is revealed at the connotational level. Red - the color of blood and energy - becomes a symbol of the brand's passion, dynamism, and determination. Partnerships with institutions such as Caritas connote Christian values of mercy, while cooperation with PZPN refers to Polishness, patriotism, and community around the national sport. Individual initiatives build a multi-layered message: the Fresh Gang represents family values and care for the health of the younger generation, bio products signal ecological awareness and middle-class aspirations, the Good Bag symbolizes the fight against waste, and the Clean Tatras project combines ecological responsibility with local Polish patriotism.

The artifact operates with a set of recognizable cultural codes: legitimization through partnership with recognized Polish institutions, moral business based on caring for the weak, and the traditional Polish family as a social foundation. Health, sport, and education are constructed as fundamental values that the corporation actively promotes and supports. The analysis reveals a series of myths embedded in the visual narrative. Central is the myth of Biedronka's Polishness - a Portuguese company manifests itself as an enterprise deeply rooted in Polish culture, operating a polycentrism strategy. Another myth is corporate paternalism: Biedronka not only sells products but educates and trains consumers, cares for their health, promotes ecology and family values.

The myth of corporate altruism also emerges, which naturalizes the belief that CSR activities stem from authentic care rather than tax or image calculations. The idea that responsibility for social assistance is shifting from the state to the consumer cooperating with the corporation is also implicitly promoted. Paradigmatic analysis reveals what was deliberately omitted. The absence of people - both employees and customers - leads to depersonalization; it is the idea that counts, not the person. There is no mention of the company's Portuguese origin, failed local shops, competition, or crises. History is presented as a linear success story. Also absent are elements typical of discount stores: promotions, lowest prices, basic (often unhealthy) products - the company escapes pigeonholing as a cheap store.

The sequential nature of the timeline creates a progressive narrative: as time passes, especially after 2006, the number of social initiatives grows, suggesting an evolution of image - from a purely commercial company to a socially responsible organization engaged in community life. The whole is directed at an idealized recipient: a traditional Polish family, religious, patriotic, identifying with the national team, ecologically aware, but also socially diverse - both in need of help and capable of sharing with others. This is the average Pole whose values the company declares to share and promote.

The analyzed infographic is an example of an advanced corporate image-building strategy, where a foreign company adapts to the local cultural context through consistent communication of values considered genuinely Polish. Semiotic analysis reveals the ideological work of the sign: the naturalization of a paternalistic model of the corporation as an educational and caring institution that supplements - and perhaps replaces - the traditional functions of the state and other social institutions.

The other subject of this analysis is an advertising infographic from the Biedronka retail chain, part of an employer branding campaign (Figure 4). The graphic presents data about employee diversity on a black background, with the centrally placed slogan “RóżniMY. tworzymy Biedronkę” (We're Different. We create Biedronka) and seven colorful circles containing statistics about the workforce composition.



**Figure 4.** Advertising infographic – “RóżniMY”.

Source: Raport zrównoważonego rozwoju sieci Biedronka, p. 63.

At the literal level, the infographic presents numerical data about the company's employees: 84 thousand people employed, 1300 people with disabilities, 500 self-checkout assistants, 40 nationalities, 4 generations, an average age of 39, and 67% parents in the workforce. The composition uses diverse graphic forms - circles in various sizes and pastel colors, decorative elements such as streamers, sparkles and triangles, yellow lines symbolizing energy, and different types of fonts, including handwriting. The minimalist design abandons photographs or illustrations of human figures in favor of abstract geometric forms.

Connotative analysis reveals a rich layer of cultural meanings. The slogan “RóżniMY” operates as a play on words, combining the adjective “różni” (different) with the pronoun “my” (we), which builds a narrative about a community based precisely on diversity. The word “tworzymy” (we create) suggests active employee participation in shaping the organization, going beyond the traditional employer-employee relationship and implying co-authorship of the company's success. Visual diversity - colors, shapes, fonts - constitutes a direct metaphor for human diversity, where each element is different but co-creates a cohesive whole.

Pastel colors evoke warmth and openness while simultaneously giving the message a light, almost playful character. Deliberately uneven, imperfect circles can be read as a message about accepting imperfection - a suggestion that “we're not perfect and we're fine with that”. The black background serves as a uniform surface on which diversity becomes more visible, creating a dynamic contrast between uniformity and differentiation. The emotional code of the graphic operates on positive associations - streamers and balloons evoke a celebratory atmosphere, while dynamic yellow lines suggest energy, movement and optimism. The use of concrete numbers is meant to authenticate the message, building an impression of transparency and reliability in corporate communication.

At a deeper ideological level, the infographic naturalizes a series of beliefs characteristic of contemporary corporate discourse. It promotes the myth of work as a source of joy and self-realization, where diversity becomes a value in itself, independent of actual organizational practices. The modern design implies an equation: modernity equals progressiveness, which in turn equals moral value. The company presents itself as people-oriented, where everyone is equal and has the opportunity to co-create, which masks actual hierarchies and power structures.

However, what is crucial is the tension between declared values and strategic omissions. The graphic contains no information about the power structure within the organization - we don't know what diversity looks like in managerial and executive positions, whether the composition of management reflects the diversity of the workforce. The statement that employees “create” the company masks the hierarchical nature of an organization that is not, after all, a worker cooperative. There is also no information about the geographical origin of these 40 nationalities - is this global diversity, or is it limited to specific regions?

Particularly problematic is a mechanism that could be called disability-washing. The number of 1300 employees with disabilities, presented as proof of inclusivity and company success, may actually indicate non-fulfillment of the statutory obligation to employ 6% of people with disabilities, which with 84 thousand employees would mean the need to employ over 5000 people. Similarly, self-checkout machines are presented as an addition creating new jobs (500 assistants), not as a potential threat to traditional cashier positions. The graphic suggests that numbers ensure transparency, but it omits key information about working conditions, turnover, satisfaction, or employee engagement.

The fundamental omission is the complete absence of employees' own voices - it is the corporation speaking about them and for them, constructing an image consistent with its own image objectives. Compositional choices are significant in this context. The central placement of the slogan “RóżniMY” prioritizes the message about diversity as a fundamental brand value. The free, somewhat chaotic arrangement of elements suggests flexibility and lack of rigid structures, which is meant to correspond with the promise of an open, relaxed organizational culture. At the same time, the choice of abstract forms instead of photographs of actual employees may raise questions - would authentic diversity not be aesthetically pleasing enough

for the campaign's assumptions? Would it not risk violating the uniformity of the visual message?

Biedronka's infographic is a typical example of contemporary employer branding communication that appropriates progressive values of diversity and inclusivity for image and recruitment purposes. It operates through a code of positive emotions and modernity, while strategically omitting issues of power, actual working conditions, the real organizational structure, and the voices of those actually concerned. What we have here is diversity-washing - a facade presentation of commitment to diversity without actual transformation of corporate relations and decision-making structures. The graphic celebrates diversity as an aesthetic and marketing value, not as a foundation for democratizing the workplace.

#### **4.2.4. Functional Profile**

Functional analysis reveals 380 total instances. Informational functions dominate with 142 instances, led by photographs (37), icons (28), and logos (26), establishing factual credibility foundation. Emotional functions follow with 91 instances, concentrated in photographs (42) and logos (26), indicating substantial investment in affective engagement. Persuasive functions contribute 64 instances, with logos (26), photographs (15), and icons (9) advancing strategic advocacy. Comparative and interpretive functions share modest presence at 31 instances each, with tables driving comparison (12) and icons supporting interpretation (10). Narrative functions appear minimally with only 21 instances. The informational-emotional-persuasive triad suggests communication model recognizing sustainability credibility requires factual disclosure, emotional identification, and strategic persuasion. Photography serves dual informational-emotional purposes, while tables maintain concentrated informational-comparative neutrality. The minimal narrative investment indicates preference for thematic disclosure over chronological storytelling.

### **4.3. Case 3: Žabka**

#### **4.3.1. Report Structural Profile**

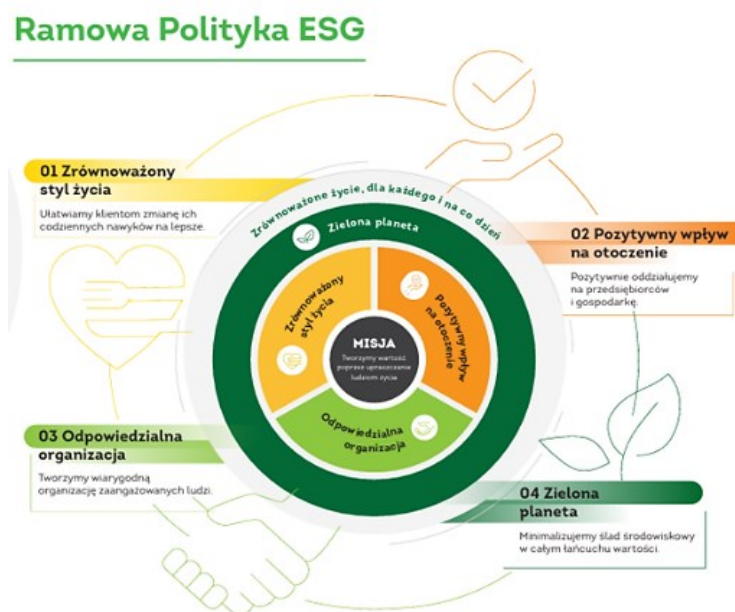
The Žabka sustainability report comprises 67 pages organized into five sections with multiple subsections, reflecting technically sophisticated, regulation-oriented approach aligned with European Sustainability Reporting Standards (ESRS). Opening with selected ESG information, the report addresses sustainability reporting fundamentals including corporate governance and double materiality analysis. The environmental pillar subdivides into decarbonization, biodiversity, circularity, and EU Taxonomy alignment. Social issues structure around own workforce and consumers/end users. Corporate governance constitutes the fourth section. The extensive appendix incorporates disclosure requirements index and external assurance report. This regulation-driven architecture prioritizes systematic coverage of mandated areas, analytical rigor, and transparency through comprehensive indexing and third-party validation, positioning the report as technical reference document for sophisticated stakeholders.

### 4.3.2. Typological distribution

The report contains 395 visual elements across 67 pages, yielding extraordinarily high density of 5.89 elements per page. Icons and pictograms dominate with 107 instances (27.1%), indicating heavy reliance on symbolic communication for efficiency. Logos appear 76 times (19.2%), other graphic elements 80 times (20.3%), and tables 64 times (16.2%)—the highest table deployment across cases. Infographics contribute 31 instances (7.8%), while photographs provide only 27 (6.8%), illustrations 10 (2.5%). Charts and maps are completely absent (0%). This profile reveals strategy centered on symbolic efficiency, structured data presentation, and brand reinforcement while minimizing representational imagery and traditional analytical visualization. The table-heavy approach indicates commitment to systematic, verifiable data disclosure aligned with regulatory expectations.

### 4.3.3. Semiotic analysis of exemplars

The subject of analysis is an infographic presenting the ESG Framework Policy in the form of a conceptual circular graphic, maintained in the characteristic color scheme of greens, yellows, and oranges on a white background (Figure 5). The visual structure is based on five concentric rings that create a complex semiotic composition.



**Figure 5.** Infographic presenting the ESG Framework Policy.

Source: Raport roczny Żabka Group, p. 61.

The infographic is built around a centrally placed company mission, highlighted against a black background. The first ring contains three policy pillars: Sustainable Lifestyle, Positive Impact on the Environment, and Responsible Organization, presented in light green, orange and yellow. The second ring constitutes the fourth pillar - Green Planet - on a dark green background with white text. The third ring presents the policy result: “Sustainable Life for Everyone, Every Day” on a gray background with green text. The whole is surrounded by decorative

elements – text fields with icons in vibrant colors that extend beyond the main circle, creating a dynamic composition.

A key semantic element is the dominance of green color, which directly connotes ecology, nature, and environmental care. The circular structure suggests completeness, interdependence, and organic wholeness - it evokes associations with a tree trunk, where policy grows in successive rings from the central mission. The icons used, such as clasped hands, a leaf, a heart with a fork and knife, or a hand with a circle, reinforce the message of cooperation, health, transparency, and positive impact. Placing the mission in the center against a black background gives it the rank of the most important, unchanging, and stable element - the entire organization is built around it.

The even distribution of the first three pillars suggests their equivalence, while the fourth pillar - Green Planet - encompassing the others, appears as their overarching context or effect. It is characteristic that the policy result is the only element not explained in detail, which allows freedom of interpretation and builds an impression of openness. The graphic balance of the entire composition additionally reinforces the message about the organization's balanced policy.

The analysis reveals a series of encoded ideologies and cultural myths. The infographic naturalizes the belief that all elements are interconnected and mutually influence each other, promoting an organic - rather than mechanical - model of operation. The dominance of green can be read as a deliberate marketing technique, a form of greenwashing, intended to build the company's ecological image. A key myth is the central position of the organization's mission - it, not people or the environment, constitutes the reference point for the entire system.

The infographic also suggests that it is the consumer who bears responsibility for the planet, while the company merely supports these efforts, which can be interpreted as a shift of responsibility from the corporation to individuals. The slogan “Sustainable Life for Everyone, Every Day” promotes the belief that business knows better what we want and can shape our consumer habits. Other ideological assumptions are also reinforced: the myth of authentic employee engagement, the belief in the exclusively positive impact of business on the environment, and faith in the organization's credibility as an equal partner. The equivalence of the pillars proves to be only apparent - their hierarchical arrangement and differences in presentation suggest different priorities in corporate reality.

The simple, readable form indicates that the infographic is not intended for auditors or specialists - it lacks specific data and measurable goals. This is a message directed at the average recipient, intended to build trust through visual transparency and promises contained in slogans such as “we facilitate”, “we positively influence”, “we minimize”, or “we create”. It is a shallow yet strong and safe message that, through aesthetic coherence and symbolism of naturalness, legitimizes the organization's activities in the ESG area, while simultaneously concealing the complexity of actual power relations and responsibility, and shifting the burden of ecological responsibility from the corporation to consumers.

The another analyzed artifact is a tabular infographic presenting climate risks and opportunities for an enterprise, compliant with TCFD (Task Force on Climate-related Financial Disclosures) guidelines and the ERM risk management system (Figure 6). The infographic is characterized by clear compositional symmetry - the left side is dedicated to climate risks, while the right side focuses on opportunities. The left side is dominated by yellow (10 icons) and orange (1 icon) colors, while the right side features light blue (4 icons) and navy blue (3 icons). A contrasting white background enhances the readability of the message. Significantly, red and black colors, which symbolize extreme threats, are completely omitted. The structure consists of three columns: category, risk/opportunity description, and organizational response.

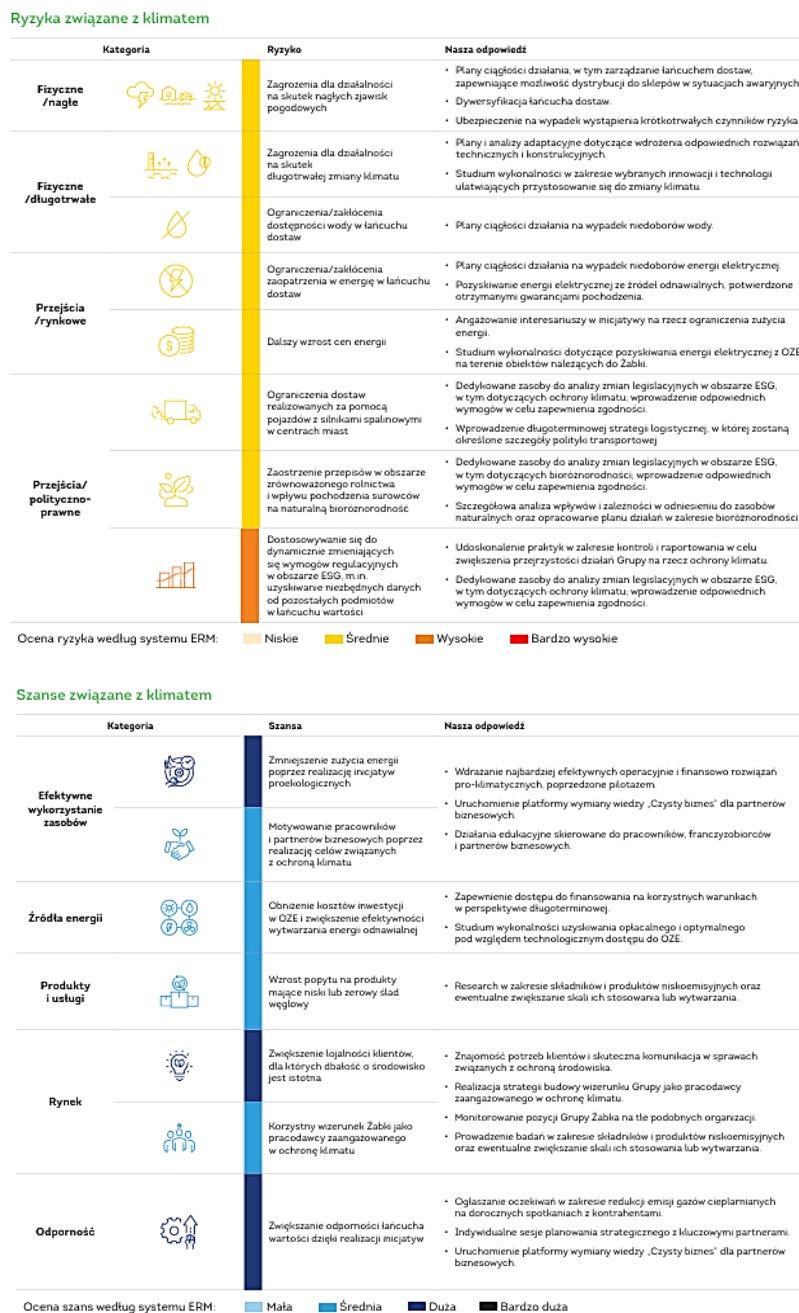


Figure 6. Infographic - climate risks and opportunities.

Source: Raport roczny Żabka Group, p. 83.

At the denotative level, the infographic catalogs four categories of climate risks (acute and chronic physical, transitional market and political-legal) and five categories of opportunities (resource efficiency, energy sources, products and services, markets, resilience), assessed on a four-point scale. Connotatively, however, the message extends far beyond neutral data presentation. The symmetrical distribution of risks and opportunities suggests balance and control over the situation. Warm warning colors (yellow, orange) on the threat side contrast with calm, professional blue tones on the opportunity side, visually communicating a transition from anxiety to mastery. The dominance of navy and light blue colors in the lower part of the table - symbols of stability, trust, and professionalism - optically suggests the prevalence of opportunities over threats.

The artifact operates with several significant cultural codes. First and foremost, it fits into the discourse of green capitalism, naturalizing the belief that the climate crisis can primarily constitute a business opportunity rather than a fundamental threat requiring systemic transformation. The myth of technological solutionism is omnipresent here - it suggests that appropriate risk management and innovation are sufficient to solve the problem. The ideology of control and quantification is also crucial here. The transformation of climate uncertainty into quantified risk on the ERM scale carries a reassuring message: the situation is measurable, and therefore manageable. This naturalizes human dominance over nature and reinforces belief in the possibility of maintaining the existing model of economic growth.

Paradigmatic choices are highly significant. Instead of actual actions, response plans are presented, which minimizes the impression of inaction. Instead of responsibility for caused climate changes, risks are discussed - which semantically shifts the company from the position of perpetrator to the position of victim of external circumstances. Most importantly: instead of moral obligations, business opportunities are discussed, which instrumentalizes ethics in favor of market logic. Syntagmatic relations reinforce these meanings. The left-right arrangement (risks-opportunities) creates a progressive narrative: from problem to solution, from threat to possibility. Placing the greatest risks at the end of the table makes them less noticeable during cursory reading. The dispersion of navy color on the right side optically suggests an abundance of opportunities.

In the context of the escalating climate crisis, which requires fundamental changes in business models and consumption patterns, the infographic serves an ideologically reassuring function. It communicates that radical transformation is not necessary - appropriate risk management and exploitation of market opportunities are sufficient. This is a classic example of corporate green mythology, where reporting compliance substitutes for actual action, and the narrative of economic growth driven by green transformation replaces the difficult debate about the necessity of limiting consumption or degrowth. The infographic naturalizes the conviction that capitalism not only can but must continue to develop - albeit in a "green" form.

Ultimately, the analyzed artifact constitutes a sophisticated corporate communication tool that, under the guise of transparency and responsibility, reinforces the status quo and postpones fundamental questions about systemic change in favor of technical-managerial solutions within the existing economic order.

#### **4.3.4. Functional Profile**

Functional analysis reveals 558 total instances—the highest functional multiplicity across cases. Informational functions overwhelmingly dominate with 229 instances (41.0%), led by logos (76), tables (64), and icons (55), establishing report's primary orientation as regulatory data disclosure document. Persuasive and emotional functions emerge as nearly equivalent secondary priorities with 108 and 102 instances respectively, both concentrated in logos (76 each) that function as triple-purpose anchors serving informational, persuasive, and emotional roles simultaneously. Photographs serve primarily emotional purposes (15 of 27), despite minimal presence. Comparative functions appear 55 times, dominated by tables (36). Interpretive functions contribute 41 instances, with tables (16) and illustrations (9) driving methodological explanation. Narrative functions appear minimally with only 23 instances. Tables function exclusively for informational and comparative purposes, maintaining strict objectivity. The complete absence of charts despite data intensity indicates preference for tabular organization over graphical visualization, reflecting regulatory compliance model balancing factual transparency, strategic advocacy, and emotional engagement while prioritizing verifiable data as credibility foundation.

#### **4.4. Cross Case Analysis**

All three sustainability reports - Lidl Polska, Biedronka, and Żabka - demonstrate striking convergence in their visual communication strategies despite significant structural differences. Most remarkably, all three systematically avoid conventional data visualization through charts (Lidl 0.35%, Biedronka 0.21%, Żabka 0%), suggesting deliberate preference for emotional and symbolic communication over quantitative transparency. All employ high visual density ranging from Lidl's 2.03 to Żabka's extraordinary 5.89 elements per page. Text-visual ratios reveal strategic choices: Lidl allocates 64% of space to visuals despite lowest element density, indicating larger comprehensive elements, Biedronka maintains balanced 47/53 distribution, while Żabka dedicates 59% to visual content through numerous discrete symbolic elements.

The ideological operations embedded within these reports reveal consistent patterns. Each presents business priorities as naturally aligned with social and environmental good while systematically shifting accountability from corporation to consumers, positioning them as primary agents of sustainability. Strategic omissions are universal: power structures remain invisible, negative impacts absent, foreign ownership obscured, and idealized representations replace actual conditions. All leverage external institutions for legitimization. Semiotic analysis reveals how these reports naturalize corporate ideologies: Lidl's materiality matrix suggests objectified ethics where business interest correlates with social good, Biedronka's anniversary

timeline constructs corporate paternalism through partnerships that position the foreign retailer as authentic Polish civic actor, Żabka's climate risk infographic reframes existential threats as business opportunities through balanced visual symmetry and color coding that suggests control and manageability, while Biedronka's diversity infographic celebrates statistics that potentially conceal non-compliance with disability employment mandates. Semiotic analysis of Lidl's African cocoa farmer photograph reveals how it perpetuates postcolonial narratives through aestheticized pre-modernity, constructing "fair trade" as solution while maintaining asymmetric economic relations.

Despite shared ideological operations, the three reports diverge fundamentally in structure and audience. Lidl's 141-page comprehensive document targets ESG analysts and informed stakeholders through systematic sustainability coverage. Biedronka's 131-page report addresses general Polish public through accessible tripartite structure. Żabka's compact 67-page document functions as technical compliance reference for regulators and financial stakeholders aligned with European Sustainability Reporting Standards.

The dominant visual strategies reveal distinct communication philosophies. Lidl employs photography-dominant authenticity strategy (31.36% photographs - highest across cases - depicting employees and stakeholders) combined with icons (22.65%), creating narrative-image reporting with sense of proportion that balances authentic representation with strategic symbolism. Biedronka pursues design-intensive branding strategy where decorative elements overwhelmingly dominate (46.48% - highest single category proportion), supplemented by photographs (21.96%) and icons (10.02%), creating communication based on aesthetics and emotions - engaging but less analytical. Żabka adopts efficiency and regulatory strategy through icons (27.09%), graphic elements (20.25%), and logos (19.24% - highest logo deployment), with minimal photography (6.84% - lowest) and maximum table use (16.20% - highest), creating functional, iconic visuality with high formalization.

Functional profiles reveal fundamentally distinct priorities. Lidl uniquely achieves emotional primacy (116 instances, 35.11%) with nearly equivalent informational secondary (115 instances, 33.82%) - only one instance difference representing perfect balance between accountability and affective connection. Biedronka demonstrates informational dominance (142 instances, 37.36%) with substantial emotional secondary (91 instances, 23.95%), combining factographic message with emotional CSR tone through educational and socially friendly communication. Żabka's overwhelming informational dominance (229 instances, 41.04% - highest absolute and proportional) with persuasive (108 instances, 19.35%) and emotional (102 instances) secondaries establishes orientation as regulatory disclosure document where emotions give way to transparency and fact-based persuasion.

The ideological positioning reveals distinct cultural strategies and corresponding "washing" practices. Lidl pursues global-local authenticity through supply chain narratives that naturalize Global South producers as traditional guardians whose pre-modern conditions justify their position in global value chains (greenwashing and fairwashing). Biedronka executes strategic

Polonization, naturalizing Portuguese ownership through patriotic partnerships while statistical presentations potentially conceal compliance failures (diversity-washing and “Poland-washing”). Żabka embraces technocratic managerialism, systematically reframing climate risks as market opportunities and presenting compliance as leadership (greenwashing and technowashing).

Ultimately, all three reports demonstrate corporate sustainability reporting as ideological apparatus where visual communication naturalizes corporate priorities as universal goods, minimal change as radical transformation, and management as ethics. The fundamental contradiction shared across cases: tools presented as objective assessment mechanisms actually function as instruments for legitimizing predetermined corporate priorities through language of standards and metrics. The reports differ in functional emphasis - Lidl's emotional-informational balance through photographic authenticity, Biedronka's accessible information wrapped in aesthetic sophistication, Żabka's regulatory compliance through formalized data presentation - yet all share commitment to sustainability credibility theater: elaborate performance of accountability without fundamental transformation of power structures or business models. Table 2 presents a comparison of the obtained test results.

**Table 2.**  
*Comparative summary of research results*

| Item                  | Biedronka                                                                              | Lidl                                                                                   | Żabka                                                                            |
|-----------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Total pages           | 131                                                                                    | 141                                                                                    | 67                                                                               |
| Total visualizations  | 469                                                                                    | 287                                                                                    | 395                                                                              |
| Visualizations/page   | 3.58                                                                                   | 2.03                                                                                   | 5.89                                                                             |
| Text-visual ratio     | 47/53                                                                                  | 36/64                                                                                  | 41/59                                                                            |
| Dominant type (Top 3) | Other graphic elements (46.48%),<br>Photographs (21.96%),<br>Icons/pictograms (10.02%) | Photographs (31.36%),<br>Icons/pictograms (22.65%),<br>Other graphic elements (16.38%) | Icons/pictograms (27.09%),<br>Other graphic elements (20.25%),<br>Logos (19.24%) |
| Second type           | Tables, Infographics,<br>Maps, Illustrations, Logos,<br>Charts                         | Tables, Infographics,<br>Illustrations, Logos,<br>Charts, Maps                         | Tables, Photographs,<br>Infographics, Maps,<br>Illustrations, Charts             |
| Primary function      | informational 142<br>(37.36%)                                                          | emotional 116 (35.11%)                                                                 | informational 229<br>(41.04%)                                                    |
| Secondary function    | emotional 91<br>(23.95%)                                                               | informational 115<br>(33.82%)                                                          | persuasive 108<br>(19.35%)                                                       |

Source: based on own results.

The comparative analysis reveals systematic ideological convergence - avoidance of quantitative visualization, alignment of business priorities with social good - yet fundamental divergence in visual strategies: Lidl's photography-dominant authenticity, Biedronka's design-intensive branding, and Żabka's icon-driven regulatory compliance. Corporate sustainability reporting ultimately operates as visual performance of accountability where professional aesthetics naturalize corporate worldviews while maintaining existing business models.

## 5. Discussion

This study reveals a striking paradox: as CSRD regulations intensify disclosure obligations, visual communication strategies systematically obscure the accountability these regulations seek to establish. The near-complete absence of charts across all three cases (Lidl 0.35%, Biedronka 0.21%, Żabka 0%) represents departure from transparency-oriented communication. While Beattie and Jones (2008) documented systematic manipulation within graph usage contemporary retail reporting reveals more sophisticated strategy: eliminating the analytical format entirely. This confirms Cho et al.'s (2015) thesis that organizations maintain organizational facades even under mandatory reporting regimes. Numerical data appear primarily in tables embedded within narrative contexts, lacking the comparative and temporal context that graphs provide.

The functional profiles reveal three distinct legitimacy strategies reflecting organizational contexts. Lidl's photography dominance (31.4%) and near-perfect emotional-informational balance constructs what Hrasky (2012) termed "legitimacy management through strategic use of visual imagery" - extensive stakeholder depiction creating visceral authenticity impression while minimizing analytical transparency. Biedronka's design-intensive approach (46.5% decorative elements) transforms the report into what Preston et al. (1996) identified as ceremonial communication, where aesthetic sophistication signals corporate modernity. Żabka's table-heavy strategy (16.2%) suggests that even compliance-oriented reporting resists visualization formats enabling comparison, aligning with Beattie and Jones's (2000) observation of "selectivity bias". These variations confirm Dumay et al.'s (2016) observation that standardization increases comprehensiveness but doesn't eliminate strategic differentiation, while supporting Hahn and Lülfs's (2014) argument that companies navigate legitimacy pressures through sophisticated disclosure strategies.

Semiotic analysis exposes the ideological work these strategies perform. Lidl's materiality matrix prioritizes business interests 4:1 over environmental impacts while employing what Davison (2015) termed visual rhetoric of objectivity - coordinate systems and quantitative scales masking corporate interest prioritization. The cocoa farmer photograph activates what Lyon and Montgomery (2015) identified as greenwashing through rhetoric without substance - aestheticized traditional imagery naturalizing asymmetric global value chains as equitable partnerships, precisely the pattern Hrasky (2012) documented where photographs served ceremonial and legitimizing functions. Biedronka's anniversary timeline constructs "Polishness" while obscuring Portuguese ownership, and the diversity infographic celebrates 1300 disabled employees potentially concealing non-compliance with statutory 6% mandate requiring 5000+ employees - exemplifying Mahoney et al.'s (2013) finding that sustainability reports often function as signaling mechanisms rather than genuine accountability tools. Żabka's climate risk infographic represents what Delmas and Burbano (2011) classified as

selective disclosure greenwashing, systematically reframing existential threats as manageable opportunities through what Cho et al. (2012) identified as strategic visual complexity.

Our central theoretical contribution identifies visual greenwashing not as isolated deceptive practices but as systematic architecture integrating five mechanisms: analytical visualization avoidance eliminating formats enabling evaluation, emotional substitution replacing analytical transparency with affective engagement, aesthetic legitimation deploying design sophistication as proxy for performance, semiotic naturalization normalizing corporate-favorable assumptions, and symbolic efficiency substituting verifiable disclosure with icon-heavy signaling. This extends foundational work establishing visual elements' ceremonial and legitimizing functions (Preston et al., 1996; Graves et al., 1996) by revealing how multiple visual elements integrate into coherent systems performing what Cho et al. (2015) termed "organized hypocrisy" - maintaining accountability appearance while protecting organizational interests. The near-zero chart usage extends Lyon and Montgomery's (2015) selective disclosure tactic from content to format selection, while intensive photography deployment (Lidl 31.4%) constructs authenticity theater through what Davison (2007, 2015) termed visual-verbal synergy - photographs anchor textual claims while obscuring structural power relations.

These mechanisms manifest distinctively in retail due to sector characteristics. Unlike extractive industries where environmental harms are geographically concentrated and measurable, retail's distributed accountability - labor practices across thousands of stores, global supply chains, diffuse waste - resists quantification and enables emotional visualization strategy. Visual elements perform legitimacy work distinctively through semiotic operations - connotation, cultural codes, ideological naturalization (Davison, 2013) - rather than explicit propositional claims subject to verification. This semiotic legitimacy work represents evolution in impression management: moving from textual claims (increasingly scrutinized) toward visual rhetoric operating through connotation and cultural association (Cho et al., 2010).

Our findings contribute to debates about ESG standardization (Dumay et al., 2016; Bebbington, Unerman, 2018) by revealing how mandatory frameworks interact with communication strategies. CSRD mandates content but not visualization approaches, creating regulatory gaps where companies maintain strategic control. All three retailers comply technically with CSRD/ESRS - they disclose mandated topics and numerical data - yet visualization choices systematically undermine transparency objectives, confirming fundamental limitation in content-focused regulation identified by Cho et al. (2015): mandating what companies report doesn't ensure how they communicate shapes stakeholder understanding toward accountability.

These findings challenge companies to recognize that sophisticated visual strategies, while serving short-term impression management (Cho et al., 2012), ultimately undermine stakeholder trust that sustainability reporting purportedly builds (Hahn, Lülfs, 2014). Companies genuinely committed to sustainability leadership should embrace analytical visualization as credibility foundation - chart avoidance represents missed opportunity to

demonstrate transparency, countering Beattie and Jones's (2008) finding that graph manipulation concentrates among poor performers. They should balance emotional and analytical elements strategically, ensuring charts constitute substantial proportion with emotional elements supporting rather than substituting transparency; rigorously apply double materiality frameworks avoiding corporate interest prioritization that subverts stakeholder accountability (Dumay et al., 2016); deploy semiotic awareness recognizing that visual elements communicate through connotation beyond literal content (Davison, 2015); and make omissions explicit rather than relying on format choices to obscure limitations, as strategic omissions become greenwashing when systematically excluding stakeholder-needed information (Lyon, Montgomery, 2015).

Study limitations qualify findings' scope. Three -case design enabled rich analysis but limits generalization; findings reflect Polish retail characteristics potentially not transferring to other contexts. Single-year analysis provides current snapshot but cannot reveal visualization evolution; reports analyzed reflect CSRD implementation process, potentially showing transitional practices. Qualitative semiotic analysis yields rich insights but introduces researcher subjectivity despite systematic procedures. Published reports examine official self-presentation rather than internal decision-making or stakeholder reception - the gap between intended impression management and actual sense-making remains empirically open. Future research should extend visualization analysis cross-sectorally, track longitudinal evolution across reporting cycles, employ experimental studies examining how visualization strategies affect stakeholder perceptions, correlate visualization characteristics with independent ESG performance assessments testing whether visual greenwashing concentrates among poor performers, and conduct stakeholder-focused studies examining actual report usage and interpretation - the critical empirical gap.

## 6. Conclusions

This study examined ESG visualization strategies employed by Lidl Polska, Biedronka, and Żabka through systematic analysis of their 2023-2024 sustainability reports, addressing critical gap: while research has concentrated on textual disclosure (Hahn, Kühnen, 2013; Dumay et al., 2016), visual communication elements have received limited systematic analysis despite occupying substantial report space and serving strategic functions (Preston et al., 1996; Davison, 2015). Most striking is fundamental convergence on visualization strategies privileging emotional engagement over analytical transparency despite organizational diversity - all three retailers demonstrate near complete chart avoidance (averaging 0.19%), representing evolution from the selective graphing and manipulation documented by Beattie and Jones (2008) and Jones (2011) to strategic format elimination. This suggests sector-level dynamics:

retail's distributed supply chain complexity creates reporting pressures favoring impression management over accountability, resulting in technical CSRD adherence through formats undermining transparency objectives.

The central theoretical contribution demonstrates that visual greenwashing operates not through isolated deceptive practices but as comprehensive strategic architecture integrating five mechanisms: analytical visualization avoidance, emotional substitution, aesthetic legitimation, semiotic naturalization, and symbolic efficiency. This extends foundational work establishing visual elements' ceremonial and legitimizing functions (Preston et al., 1996; Graves et al., 1996; Hrasky, 2012) by revealing how multiple visual elements integrate into coherent systems performing what Cho et al. (2015) termed “organized hypocrisy”. Semiotic analysis revealed these mechanisms' operation: materiality matrices presenting corporate priorities as objective measurement, photographs naturalizing inequalities as equitable partnerships (confirming Hrasky's 2012 findings), infographics reframing threats as opportunities, and statistical presentations potentially concealing non-compliance. These examples demonstrate visual rhetoric performing legitimacy work through connotation resistant to verification (Davison, 2007, 2015), representing evolution from textual claims toward visual communication exploiting what Delmas and Burbano (2011) identified as greenwashing tactics adapted to mandatory disclosure contexts.

While core architecture converges, manifestation reflects organizational characteristics - Lidl's photography-dominant authenticity strategy, Biedronka's design-intensive branding approach, and Żabka's regulatory-efficiency model demonstrate that standardized frameworks (CSRD) increase comprehensiveness but don't eliminate strategic differentiation (Dumay et al., 2016), confirming fundamental limitation: mandating what companies report doesn't ensure how they communicate aligns with accountability objectives (Cho et al., 2015). This research contributes to ongoing debates about sustainability reporting effectiveness, engaging the transparency versus legitimation tension (Hahn, Lülfs, 2014; Cho et al., 2015) by providing visual analysis evidence that contemporary reporting, despite expanding regulatory requirements, continues serving impression management more than stakeholder information needs. It addresses standardization versus contextualization debates (Dumay et al., 2016; Bebbington, Unerman, 2018), demonstrating how mandatory frameworks enable compliance without ensuring transparency, and advances the visual turn in accounting research by revealing visual rhetoric as primary mechanism through which companies navigate accountability pressures.

For companies, findings challenge assumptions that sophisticated visual communication builds genuine trust - systematic visual greenwashing deployment suggests industry normalization of practices ultimately undermining credibility as stakeholder capabilities intensify. Companies genuinely committed to sustainability should embrace analytical visualization as credibility foundation, balance emotional and analytical elements based on

stakeholder needs, ensure materiality assessment reflects stakeholder priorities, and make omissions explicit rather than obscuring through format choices.

The gap between regulatory objectives (transparent, comparable, decision-useful information) and documented practices (strategic formats minimizing transparency while maintaining accountability impression) suggests current reporting paradigms require reconsideration. Content mandates without format requirements create space for sophisticated greenwashing undermining policy objectives. Regulators should establish mandatory analytical visualization requirements that ensure quantitative data is presented in formats enabling comparison and evaluation (charts, graphs, trend analyses), proportionality standards that prevent overwhelming analytical content with decorative or emotional elements, and explicit prohibitions on misleading visual techniques such as presenting corporate priorities as objective assessments or using aesthetic sophistication to substitute for performance transparency. The convergent patterns identified - chart avoidance, emotional substitution, aesthetic legitimization, semiotic naturalization - likely represent systematic characteristics of corporate sustainability communication under mandatory disclosure rather than Polish-specific anomalies. Yet companies face genuine tensions: diverse stakeholder audiences, sustainability challenges involving quantifiable metrics and qualitative values, and reports that must inform and engage. The challenge lies not in eliminating visual communication but developing approaches genuinely balancing transparency with accessibility, accountability with engagement. Achieving this balance requires commitment from multiple actors: companies embracing transparency as competitive advantage, regulators developing requirements attending to format alongside content, civil society enhancing analytical capabilities and maintaining pressure, and researchers continuing to investigate how corporate communication practices either enable or impede the sustainability transformations that contemporary challenges urgently demand.

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