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Seeing more than reading: The visual mode in utilities' sustainability reports

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ABSTRACT

The analysis of semiotic modes of communication used in corporate reports is very relevant for understanding how meanings are communicated to readers or viewers. But researchers' interest has mainly focused on verbal and numerical modes of communication, and the focus on the visual mode has been very limited. This paper contributes to filling this gap through an explorative analysis of how the visual artefacts are used with the text (verbal and numerical) in utilities' corporate sustainability reports. Results show that visual artefacts are more used for captivating readers' or viewers' attention, spatializing and materializing concepts than infiltrating meanings.

1. Introduction

Several are the reasons why strategic relevance is attributed to communication – for example, stakeholder management, identity construction and organizations' reputation (Cornelissen, 2004). These reasons and those related to managerial dimensions are strictly linked to a conceptualization of corporate communication as a function able to contribute to corporate legitimation (Hrasky, 2012; Monfardini et al., 2013; Rodrigue et al., 2013) and, among the different available communication tools, corporate reports are one of the most relevant for contributing to this objective (Schnitzer, 2018). Unlike other types of communication, corporate reports allow for building institutional communications that characterize an organization over a long period. Consequently, this increases the possibility for organizations to be trusted and legitimated in front of their internal and external stakeholders, and this makes corporate reports strategically relevant because they can influence the future development of organizations by setting their discourses with stakeholders. According to Oberwallner et al. (2021), “different preparers can follow different reporting logics, but also that even when preparers follow the same reporting logic, they might employ different assumptions in their respective constructions of users”. Therefore, corporate reports are not neutral communication tools but tools that, due to their complexity, need to be appropriately governed and managed.

Until the recent past, corporate reports have overlapped with financial reports because of the strict focus on the economic dimension of companies assuming that they do not have any other role in society. But the increasing awareness of a broader role for companies in society and the limited capacity of numbers, especially financial figures, to represent performance dimensions different from the financial ones called for a renovation of corporate reporting. Corporate reporting of non-financial performance, such as ESGs, is increasingly relevant (Cho and Patten, 2007; Deegan, 2002). Non-financial reports communicate information about different dimensions of performance, thus making it necessary to adopt communication modes consistently with the object to be communicated and the objective to be pursued through that communication. From this perspective, analyzing semiotic modes of communication used in corporate reports could be very relevant for understanding how meanings are differently communicated to readers or viewers of those documents. But researchers' interest has mainly focused on verbal and numerical modes of communication, and very limited has been focused on the visual mode of communication in corporate reports.

Researchers and professionals' interest in non-financial reports focused primarily on what has been defined as the narrative turn of corporate reporting (Beattie, 2014): the evolution of the topics in non-financial reports compared to traditional ones. Interest is mainly due to the need to define new measurement metrics capable of providing

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information on phenomena not translatable into financial figures and consequently providing representations useful for managerial purposes (Behn, 2003; Saravanamuthu, 2004). This interest in the topics and aspects contained in non-financial reports has also been justified by the continuous increase in the types of documents used for reporting non-financial performance (Dossi and Patelli, 2010; Stolowy and Paugam, 2018), whether they are related to the analysis of sustainability reports (Contrafatto and Burns, 2013; Hossain, 2018; Tregidga et al., 2014; Valenza and Damiano, 2023), or integrated reporting (Dumay et al., 2016; Higgins et al., 2014; Ruggiero and Monfardini, 2013) or intellectual capital (Bozzolan et al., 2003; Dumay et al., 2015, 2016; Inkinen et al., 2017).

This type of reporting is not as standardized as financial or corporate governance reports, giving room for different communication behaviors from organizations. Focusing on the topics of corporate reports has not allowed the analysis and understanding of organizations' communication strategies and the ways adopted for communicating corporate strategies. To this end, research must also focus on the semiotic modes used within reports for communicating those contents. Recently, there has been a growing interest in the visual dimensions of communication, especially in the semiotic visual modes (Kress, 2010; Kress and van Leeuwen, 2006). Some scholars have identified this shift to the visual as a moment of visual twist in organizational studies (Greenwood et al., 2019; Meyer et al., 2013; Quattrone et al., 2021). But despite this turn, contributions that investigate the role of the visual mode of communication in corporate reporting are still scarce (Busco and Quattrone, 2015; Davison, 2011b, 2015; Hrasky, 2012; Puyou and Quattrone, 2018; Ronzani and Gatzweiler, 2022; Ruggiero, 2020).

This paper sets out to contribute to filling this gap. Based on an explorative approach, the case-study methodology has been adopted to provide an in-depth more than a generalized analysis of the topic investigated (Yin, 2017). The paper analyzes how the visual modes are used in relation to text (verbal and numerical) in corporate reports for communicating meanings and dimensions of performance (Ligorio et al., 2022). To pursue this research objective, the sustainability reports of two relevant utility companies have been analyzed over four years (2018–2021). As these types of organizations are characterized by pursuing different dimensions of performance (Argento et al., 2019b), communication could be very relevant for achieving the highest level of legitimation in front of their stakeholders (Lammers, 2011). Utilities are companies where a continuous balancing between private and public perspectives and financial and non-financial performance needs to be maintained. Visual communication modes could make the simultaneous highlighting and communication of different meanings to stakeholders easier.

The paper is structured as follows. Section 2 provides a literature review of sustainability reporting to draft the existing literature and clearly define the gap to be filled. Section 3 presents the theoretical framework used for analyzing the selected case studies. The methodology and results are respectively provided in sections 4 and 5. Finally, section 6 discusses the findings and provides some final remarks.

2. The role of non-financial information for utilities

Developing effective and transparent institutions requires the disclosure of both financial and non-financial information (NFI) with high levels of quality, as the transparency and information quality can improve financial management (Cucciniello et al., 2017). Moreover, stakeholders request sustainable reporting as they are more and more interested in the impacts of organizations. Information about prospective risks is increasing to fulfill these needs (Rupley et al., 2012). As a result, sustainability reports were born as an accountability instrument to satisfy interest groups, with social and environmental aspects acquiring particular relevance.

The Directive 2014/95/UE of the European Parliament about disclosure of NFI and the recently updated versions of the European

Sustainability Reporting Standards (ESRS) approved on 16 November 2022 by the European Financial Reporting Advisory Group (EFRAG) show the level of institutionalization of elaborating NFI to develop more transparent institutions and ensure public access to information. In their study about hybrid organizations, Ligorio et al. (2022) assert that the specific country norms about NFI do not affect the selection of the disclosed information in countries. The importance of divulging information on sustainability to identify sustainability risks and increase society's trust is recognized. Disclosure of NFI is essential for managing change towards a sustainable global economy by combining long-term profitability with social justice and environmental protection. In this context, disclosure of NFI helps measure, monitor, and manage undertakings' performance and their impact on society. One of the objectives of these regulations is to take account of the diversity of corporate social responsibility (CSR) policies implemented by entities matched by a sufficient level of comparability to meet the needs of stakeholders and let users access information on the impact of businesses on society. However, Bocancia & Cozma (2020) assert that, despite the importance of NFI in judging the performance of entities, it is not clear the definition of this term in the literature because NFI represents different issues, such as information on the strategy, social responsibility, corporate governance, internal control or risk management. In line with this, Caputo et al. (2021) find that corporate governance and report characteristics affect environmental transparency, and managers avoid the disclosure of unfavorable NFI. NFI makes data meaningful and understandable by supplementing financial information and potentially increasing managerial effectiveness (Biondi et al., 2021). However, authors are critics and assert that NFI is not sufficiently comparable because entities do not report all the information considered needed by users (La Torre et al., 2020). The reliability of the information provided is not guaranteed due to the absence of benchmarking (Monfardini and Ruggiero, 2014). Rodrigue et al. (2013) defend that companies follow a proactive and transparent strategy for communicating NFI when stakeholders demand more information about their social performance. Cupertino et al. (2022) find that, although NFI regulation is costly for corporate ownership and management, it contributes to mitigating the adverse effects of corporate sustainability on financial performance. Kolk (2003) asserts that multinational companies have become more active in reporting to avoid globalization's negative social and environmental implications.

One objective of NFI is to increase communication with stakeholders and to guarantee their participation in decision-making processes. NFI will have value if it can influence the decisions and behavior of the organization and stakeholders (Badia et al., 2020). As utilities are oriented to fulfill a wide range of information needs, they must report a high level of disclosure. Utilities are used to provide essential services such as electricity, natural gas, energy, water and telephone service. This feature can lead to enlarge considerations on the companies' sensibility about NFI. The appropriateness of adopting NFI, oriented not only to optimize their profit but also to pursue social aims, implies that their stakeholders may be extremely cautious regarding NFI and their impact on society (Pozzoli and Gesuele, 2016). Utilities can be considered an evolutionary form of a previous public company; therefore, the choice of undertaking NFI could be influenced by the change from traditional public management towards management undertaken with a private partner. This may be an explanation for paying particular attention to the role of NFI to be more transparent. Stakeholders could pressure utilities to adopt NFI to account for the company's running (Badia et al., 2020).

A particularity of this sector that makes the NFI especially relevant is that the stakeholders' expectations in utilities can be satisfied by using this kind of information as it can be used to legitimize the decision-making process and align social values and acceptable behavior of the entity. Therefore, NFI's quality, credibility, and reliability may be increased with the involvement of stakeholders.

In this sense, utilities provide vital resources for society, and these

companies seek to pursue financial sustainability. Both financial and NFI will be relevant to these accountability relationships (Yetano and Sorrentino, 2023). However, disclosure of NFI by companies operating in the utility sector represents a critical task due to reputational risks and the disclosure of unfavorable information that could negatively affect the company (Imperiale et al., 2023).

3. From text to visual mode: the visual turn in corporate reports and its affordances

A deep process of reform has interested the utility sector, especially during the corporatization/privatization process experienced during the neo-liberal based reform process of the public sector labelled as New Public Management (Hood, 1995; Steccolini, 2004; Steccolini et al., 2020) and the current coming back to a prevalent “stand-alone, state-owned corporations to deliver core services” (McDonald, 2016). During this reform process, corporate reports have been asked to communicate a more comprehensive set of performance because of the necessity of satisfying the information needs of a more significant and different number of stakeholders. (Siboni and Sangiorgi, 2013). To this end, using only numbers could limit corporate reports’ capacity and the necessity to properly communicate performance dimensions that are not financial (Dossi and Patelli, 2010), especially for utility companies which are the companies operating in an economic sector which report more information about their social and environmental performance compared to any other economic sector (Gao et al., 2005; Burritt, 2002; Gray, 2006; Marcuccio and Steccolini, 2005; O’Donovan, 2002). The necessity of reporting different dimensions of performance besides the financial one has pushed the issuing of new corporate reports characterized by a widening and integration of the aspects and performance dimensions reported (Dumay et al., 2016; Eccles et al., 2015; IIRC (International Integrated Reporting Council), 2013; Ruggiero and Monfardini, 2013; Ruggiero and Cupertino, 2018). But, the increasing complexity of the aspects and performance dimensions reported by companies has raised the necessity to analyze and integrate the capabilities of the usual communication modes used in corporate reports (Iberdrola, 2018), the numerical and the textual, with other semiotic modes of communication, such as the visual (Brown, 2010; Iberdrola, 2019; Ruggiero, 2020). According to Davison (2010), the visual dimension of reports is more difficult to interpret than other forms of communication, such as text and numbers. While words can be interpreted through coding mechanisms and numbers can be evaluated for their accuracy in applying the evaluative criteria, images cannot be quickly submitted to such evaluative forms. The communicative result of visual objects depends on the interaction between these objects and their viewers, regardless of their authors (Iberdrola, 2020). A visual object, mainly photographic, is “evaluated” by the viewer primarily for the reality it represents (Enel, 2021). It is generally believed there is a close link or overlap between what the image shows and the reality (if there is one) represented. It implies that the message conveyed by an image is without a code, and it is continuous. The lack of a code means that the viewer is simply looking at the object represented without making any reasoning about it. Greenwood et al. (2019) state that analyzing a visual object could aim at describing the signifier by responding to the question “What is it?”. In this sense, the viewers do not ask themselves reflexively anything about the visual images apart from what they are. This continuity is interrupted when the viewers start describing the visual object. In this case, the viewers need to use a code belonging to the knowledge available at a social level that they possess for conveying the additional message coming from the visual object. “To describe is thus not simply to be imprecise or incomplete, it is to change structure, to signify something different to what is shown” (Barthes, 1977).

Consistently with these features of visual objects and drawing in Roberts’ (1991) distinction between communicative and instrumental reporting, the visual turn of reporting seems the material evidence that

reporting practices are becoming more communicative than instrumental. The content of reporting documents and the related message is not built only to represent a situation instrumentally but also to lead the viewer toward a specific decision and consequent action. The viewer is influenced by a visual artefact not only through the direct message that it represents but also, if not primarily, by the meaning the viewer reflexively attributes to that visual artefact.

Even if numbers, verbal, and visual objects have been stressed within reports in different periods, it does not mean that they are exclusive in their use and independent of each other in providing meaning through communication (Kress, 2010; Ronzani and Gatzweiler, 2022). In this sense, the different visual objects have different possible affordances for communicating, similar to text (Meyer et al., 2018) and numbers (Espeland and Stevens, 1998, 2008). Affordances, which usually support textual communication (Kress, 2010). Meyer et al. (2018) state that visual objects hold four communication affordances. They infiltrate the meaning produced through text with additional ideas and concepts perceivable and constructed by the viewer by reflexively looking at images. Visual modes are less constrained in their use by social regulation, or the transgression of their rules is less criticized. Therefore, visual modes could be used for communicating messages that could be less legitimated to be communicated through text. They specialize by providing the possibility to put different aspects in the same image that are difficult to put and/or link together through text. By visually representing signs that recall different concepts, the viewer is led to combine them and understand what comes from their interaction. The achievement of this result could be much longer or even impossible using textual modes as they produce artefacts that are much more difficult to understand than images. They captivate by capturing the attention of the audience. Visual modes are much faster than text in capturing the viewer’s attention, mainly because images can stimulate the viewer’s emotional side much more than text for a reader. Finally, they materialize by providing ‘material’ representations. The viewer is emotionally absorbed in the situation where the concept and meaning communicated exist.

4. Methodology

Due to the limited literature on the role of visual mode in corporate reporting (Davison, 2007, 2008, 2014; Greenwood et al., 2019; Ruggiero, 2020), an explorative approach has been adopted to pursue the research objective of this paper. In particular, a case study methodology has been adopted (Yin, 2017). Specifically, two cases have been selected to get a more extensive picture of and analyze the current situation in the visual mode of communication of non-financial information to find similarities and differences (Baxter and Jack, 2015). Multiple cases provide researchers with a tool for deeply understanding a specific phenomenon. Numerous studies have demonstrated that this methodology can be used successfully to analyze a situation and to provide a richer context for understanding the phenomena under study (Yin, 2017).

4.1. Cases selection and data collection

The analysis of the visual mode in corporate reporting primarily called for selecting the organizations to sample. To this end, a purposeful sampling technique has been adopted (Patton, 2015). Purposeful sampling permits identifying and selecting information-rich cases related to the phenomenon of interest. For this reason, two utility companies have been selected. As hybrids (Denis et al., 2015), these organizations are very useful for pursuing the purpose of this article as they are made of different values to manage and different audiences to satisfy for their legitimation (Grossi et al., 2022). In addition to the more “classic” mode of communication (numbers and verbal text), the visual mode could be used in their corporate reports to balance the complexity of the messages and meanings to communicate. The companies selected are Iberdrola

Table 1
Biggest electric companies in the EU in terms of capitalization.

Company Name	Nationality	Capitalization (€)	%
Iberdrola SA	Spain	68,976,094	100%
Enel SPA	Italy	54,930,571	79.64%
Électricité de France (EDF)	France	45,797,322	66.40%
National Grid PLC	UK	44,111,170	63.95%
Engie	France	31,975,292	46.36%

Source: Orbis Europe database

and Enel, the two biggest listed electric utility companies in Europe, measured in capitalization (see Table 1). The information about capitalization and other financial data comes from the Orbis database. Even if located in different countries, to guarantee a high level of homogeneity among the selected cases, the companies in the sample belong to administrative environments characterized by the same tradition (the Napoleonic tradition) (Painter and Peters, 2010).

The two selected companies belong to the Eurozone, important as for the sake of the paper, we want to purposefully select companies operating in an environment characterized by the presence of the same regulation for non-financial disclosure (for example, the Directive, 2014/95/UE). Additionally, both companies are the most similar in size. A comparative study with smaller companies could affect the reporting practices adopted (Schreck and Raithel, 2018). The selection of the corporate reports drawn by the organizations for communicating their performance is also a relevant factor for our study. Among the different types of corporate reports, the selection of the financial report would have led to selecting a communication focused on financial performance, which potentially implies a prevalent use of the numerical and verbal modes of communication. This prevalence would have limited the possibility of analyzing the use of the visual mode in corporate reporting. Consequently, non-financial reports have been chosen as documents to be analyzed. Among the different non-financial reports available, we have focused on the sustainability report as it is the only one in common between the companies selected. Due to the starting date of the sustainability reports and their availability on the organizations' websites, the period analyzed has been 2018–2021.

4.2. Data analysis

The sustainability reports have been analyzed in two different steps: descriptive and semiotic (Greenwood et al., 2019). The first step of the analysis aimed at providing a statistical description of the use of the visual semiotic mode of communication during the period analyzed. To this aim, different visual techniques (images, photographs, tables and graphs) have been detected in the different corporate reports analyzed (Hrasky, 2012). The analysis aims to define a trend in using the visual mode in communicating non-financial performance. This trend analysis allows an understanding of whether there has been a change in the organizations' communication process, at least in terms of the modes of communication used. The second step of the analysis focuses on using the affordances of the visual mode in the reports. In particular, the authors have independently attributed the visual artefacts used in the reports to each affordance. To avoid classifying a visual artefact in different affordances, the authors have decided to classify it according to the principle of prevalence. Each visual artefact has been assigned to the prevalent affordance used. Then the authors compared their classifications to check for potential divergences and moderation among them was carried out to achieve a unique classification of the different visual artefacts used in the reports.

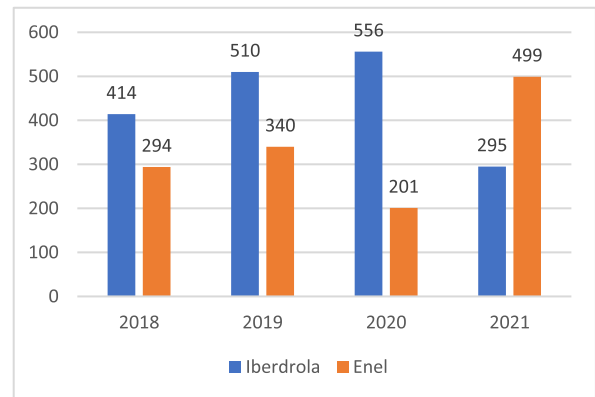


Fig. 1. Number of pages in the report by company (2018–2021).

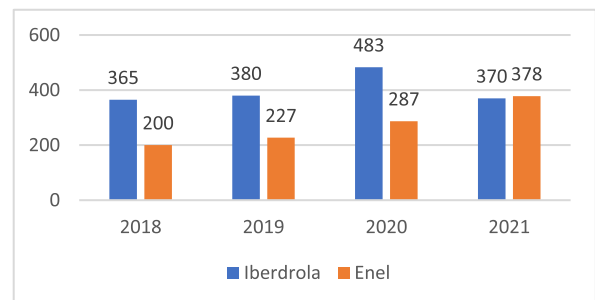


Fig. 2. Number of visual elements per report (2018–2021).

Table 2
Percentage of visual artefacts in the reports (%).

Iberdrola	2018	2019	2020	2021
Images	27,95	33,68	45,55	51,62
Photograph	0,27	0,26	0,21	0,27
Graph	9,04	6,05	3,52	0,54
Tables	62,74	60,00	50,72	47,57
Enel	2018	2019	2020	2021
Images	25,00	14,10	23,34	14,29
Photograph	20,50	26,87	18,82	36,51
Graph	21,00	23,35	24,74	23,54
Tables	33,50	35,68	33,10	25,66

5. Findings

5.1. The descriptive analysis of the visual mode

In this section, the result of the descriptive analysis carried out on the sustainability reports is described to provide some information on the sustainability reports used for the analysis and to know how sustainability aspects have been communicated through visual artefacts.

Fig. 1 shows the number of pages per year of the sustainability reports of the two organizations during the period analyzed. Iberdrola's sustainability report is the biggest in pages from 2018 to 2020. However, in 2021, the size of Iberdrola's report decreased significantly, and ENEL published the most extensive report. In general, Iberdrola and ENEL keep a similar format in their reports.

If we analyze Fig. 2 (total number of visual artefacts: Images, Photography, Graph and Tables), it can be observed that the trend is similar to that represented in Fig. 1. A higher number of visual artefacts for Iberdrola than ENEL in 2018–2020. However, in 2021, the number of visual artefacts is very similar for Iberdrola and ENEL.

Table 2 shows the evolution of the percentage of each visual element from 2018 to 2021. As can be seen, Iberdrola's percentage of images

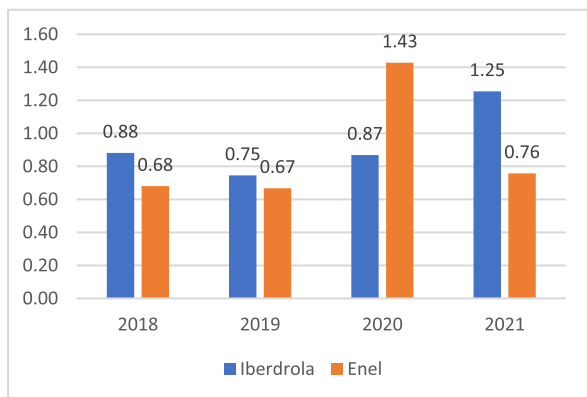


Fig. 3. Ratio of visual elements per page (2018–2021).

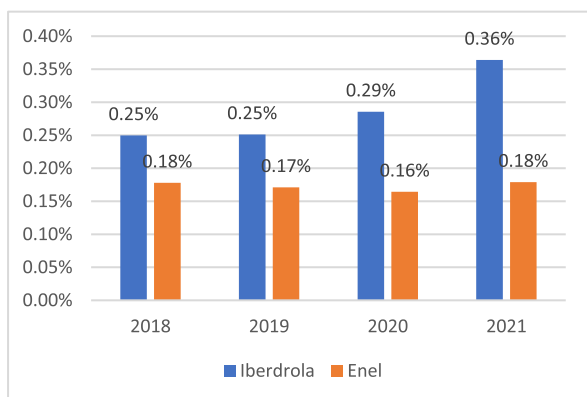


Fig. 4. Ratio of visual elements per number of words (2018–2021).

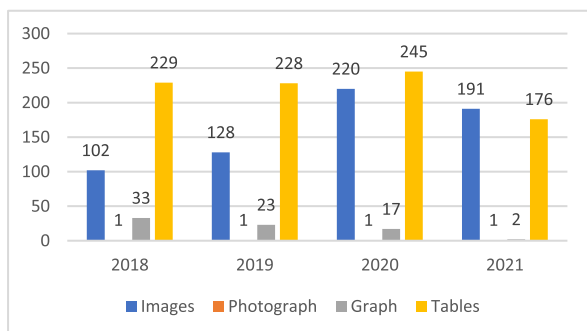


Fig. 5. Number of visual elements by categories for Iberdrola.

increases significantly during the period analyzed from 28% in 2018 to 52% in 2021. The number of photographs is the same during the period, only one. The percentage of graphs decreases significantly, and the number of tables remains high but decreases from 2018 to 2021. For Enel, the percentages of images and tables decrease, the graphs remain constant, and the percentage of photographs increases significantly.

Fig. 3 shows the ratio between visual artefacts and the number of pages for each company in the period analyzed. While there is a consistent behavior among Iberdrola and Enel in using visual artefacts in the reports of the first two years analyzed, the situation is different and opposite between the two companies in the last two years. In 2020, Enel used visual artefacts more intensively than Iberdrola did in the sustainability report, while the situation was opposed in 2021. This contraposition is undoubtedly due to the different lengths of the 2021 sustainability reports of the two organizations. But this quantitative

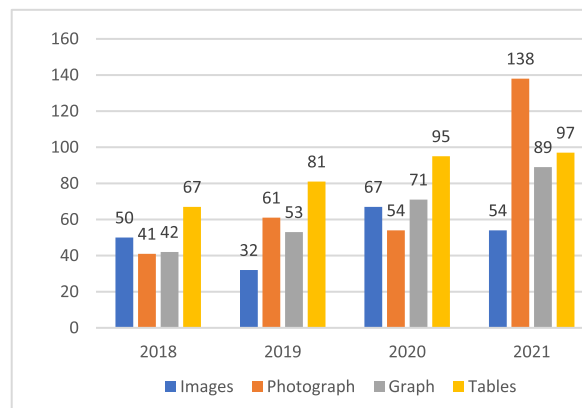


Fig. 6. Number of visual elements by categories for ENEL.

instability in using visual artefacts in the reports makes understanding the types of visual artefacts used relevant and the role attributed to the visual artefacts in these documents.

Fig. 4 shows the ratio between visual artefacts and the number of words for each company in the period analyzed. While Iberdrola's ratio increases significantly in 2021, it remains constant for Enel.

Let us analyze (using a criterion of prevalence in classification of the visual artefacts in case of their composite use) the classification of the visual elements in Images, Photography, Graph and Tables. Iberdrola (Fig. 5) mainly includes tables in its reports. The number of images increased significantly during the period analyzed, with the maximum in 2020. The number of graphs is lower than the other visual elements, except for the number of photographs, as only one photograph is shown in the report (the photograph of the company President). As for ENEL (Fig. 6), the elements are more balanced, as reports include photographs, graphs, images, and tables. It is remarkable the number of photographs included in the 2021 sustainability report.

Due to the period of reference of this study, it is possible to see the impact of the pandemic on reporting. Regarding the number of pages, it is highlighted that the most extensive Iberdrola report is that of 2020; but the opposite happens for Enel, as its report is the smallest this year. This divergence does not allow us to generalize about the effect of the pandemic. However, the pandemic positively affected reporting in terms of the number of pages for Iberdrola. Regarding the total number of visual artefacts, the evolution is the same as in terms of pages for Iberdrola. For Enel, the number of visual artefacts in 2020 is similar to previous years; as the number of pages decreases, the ratio of visual elements per page for Enel is the highest in 2020.

5.2. The affordances of the visual mode used in the sustainability reports

In this section, an analysis of the use/affordances of the visual artefacts is provided. The analysis focuses on each case included in the purposeful sample selected. Findings are presented adopting a temporal perspective by emphasizing the differences in the affordances used in the sustainability reports of the two organizations analyzed by comparing the first year, 2018, with the following years. This analysis contributes to making evident, among the different possibilities, the use of visual artefacts in the reporting documents analyzed. In particular, the analysis aims at highlighting the use of the different affordances of the visual mode in the sustainability reports of the two utility companies analyzed. To this end, at least an example is provided as evidence for each affordance whose use is detected in the reports.

- Iberdrola

In the 2018 sustainability report, the almost exclusive visual artefacts used in the report are tables. Most of the tables are used for

Efficiency at buildings

Iberdrola continues to implement energy efficiency measures at the buildings and offices of the company all over the world. Energy audits of the buildings allow it to determine the actions to take at the buildings: optimising acclimatisation (heating and air conditioning) performance, improving thermal insulation, efficiency in the lighting of buildings, and automation of the facilities associated therewith.

The savings by application of these measures compared to the prior year was 672 GJ.

Reductions in energy requirements of products and services

Iberdrola fosters efficiency, gradually reducing the environmental impact of its products and services. It also offers advice to its customers, encouraging and researching eco-efficient solutions.

In addition to electricity and gas, Iberdrola sells new products and services to encourage energy and financial savings by its customers, efficiency, and care for the environment.

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Energy savings of green products and services (GJ)	2018	2017	2016
Photovoltaic solar energy	20,536	1,879	908
Energy audits and plans	46,548 ⁵³	100,376	199,980
Gas maintenance service	876,336	790,441	806,607
Other savings and efficiency activities	99,970	168,124 ⁵⁴	27,489
Green energy supplied	42,700,000 ⁵⁵	49,674,302	61,764,036
Total	43,742,176	50,928,130	52,861,967

More information about these and other initiatives is available at the websites of [Spain](#), [Brazil](#), [United Kingdom](#), [United States](#) (through NYSEG, RG&E and CMP) and [Portugal](#).

Energy consumption outside of the organisation 302-2

The most significant consumption of energy outside of the organisation is consumption associated with the transport of fuel by motorway, with trips to/from work by group employees, and with business travel (planes and motorways). All of this information forms part of scope 3 of the calculation of greenhouse gas emissions. Energy consumption outside of the organisation is estimated based on the distances travelled by each means of transport and is transformed by means of conversion factors from official sources⁵⁶. The energy consumption for these items is around 847,440 GJ.

53. The energy audits and plans are in effect for 5 years, giving rise to the reduction they produce.

54. Recalculated data.

55. No data available from Brazil as at the date this report is issued.

56. Defra: Department for Environment, Food and Rural Affairs (United Kingdom).

Source: Iberdrola 2018 Sustainability Report (p. 131)

Fig. 7. Example of a table used for captivating in the Iberdrola sustainability report
Source: Iberdrola 2018 Sustainability Report (p. 131).

capturing the reader or viewer’s attention by focusing on specific data and information and therefore captivating the reader or viewer’s attention on a specific meaning communicated in the report. In particular, the captivating used through the tables reported aims at providing a temporal dimension of the topic represented in the report (see Fig. 7). In this way, the report, or better, its creator, aims at stimulating reflexive focused reasoning in the reader or viewer by linking and evaluating the actual results of the organization compared to previous years’ performance.

To evaluate performance, it is always necessary to compare the actual result with other measures of the same performance. In most of the tables reported in the sustainability report, the comparison is provided with the same performance measures at the end of the previous

financial years. In this way, the reader or viewer will compare the different measures provided and will reflexively evaluate the organization’s efficiency in managing the performance represented in the report.

The images used in the 2018 sustainability report are mainly used for providing a materialization of the content communicated through the verbal text used in the report. For example, an image is used to make more explicit the concept of internationalization related to the activity carried out by Iberdrola (see Fig. 8).

This image makes it clear to the reader or viewer where the organization is located and the market areas where it runs its activity. In this way, the image provides the material representation of the description provided through the text used in the report. In addition, the materialization provided through the image gives the possibility to make a

Presence and areas of activity

102-4

Iberdrola and its subsidiaries and affiliates carry out their activities in almost thirty countries. However, for operational and economic/financial purposes, Iberdrola concentrates a large portion of its business activities in five principal countries: Spain, the United Kingdom, the United States, Brazil and Mexico. It also engages in activities in Germany, Portugal, Italy and France, among other countries.

The following infographic shows the group's principal areas of activity. The countries in which it operates, the activities performed in each of them and the criteria used to define the significance thereof are set forth in the "Scope of Information" section of this report.

An international energy leader



*Avangrid, Inc. is 81.50% owned by Iberdrola, S.A.
** Neoen is 50.45% owned by Iberdrola, S.A.

Source: Iberdrola 2018 Sustainability Report (p. 18)

Fig. 8. Example of an image used to materialize Iberdrola's international presence
Source: Iberdrola 2018 Sustainability Report (p. 18).

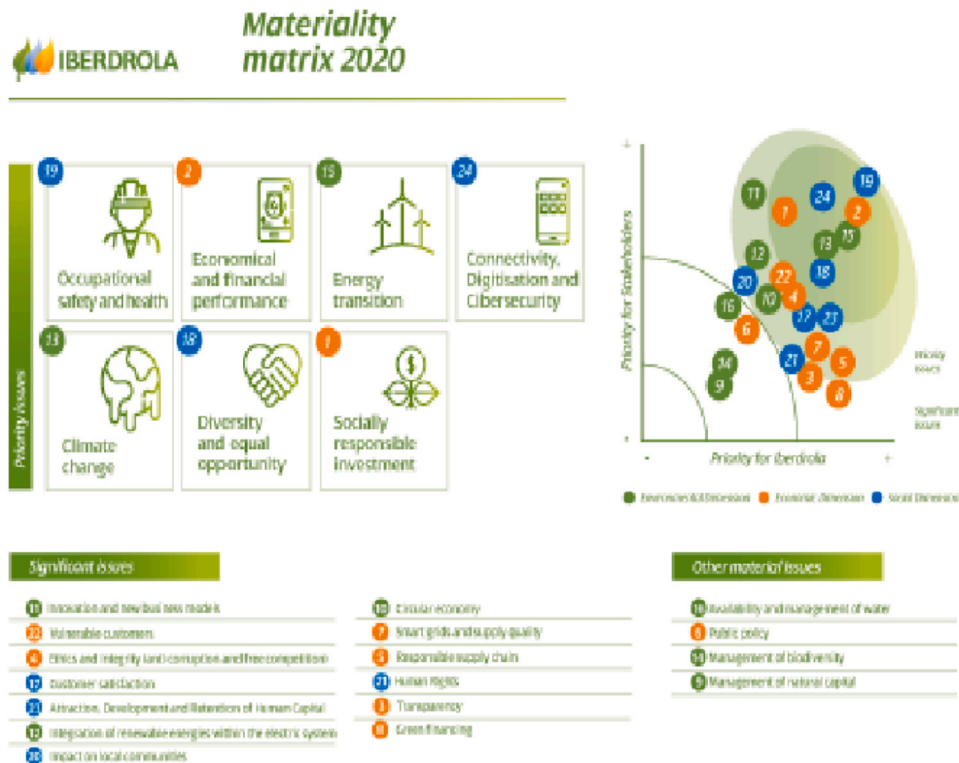


Source: Iberdrola 2019 Sustainability Report (p. 93)

Fig. 9. Example of an image used as captivation in the Iberdrola report
Source: Iberdrola 2019 Sustainability Report (p. 93).



The following image shows the result of the analysis:

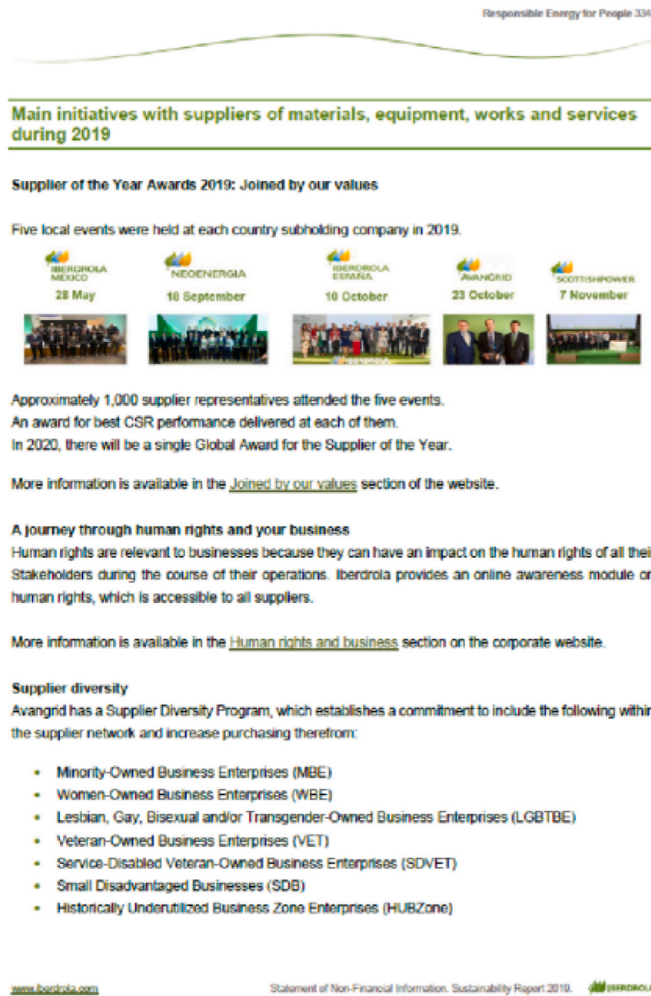


The coverage of the material topics; that is, whether the topics are significant within the organisation (internal impact on the company or its employees) or outside it (impact outside the company, outside its scope of control or on outside Stakeholders) is reflected in detail in the various sections of this report.

The various sections of this report offer a concrete response to the aspects identified, as shown in the following table:

Source: Iberdrola 2020 Sustainability Report (p. 432)

Fig. 10. Example of an image used as the spatialization of Iberdrola’s international presence
Source: Iberdrola 2020 Sustainability Report (p. 432).



Source: Iberdrola 2019 Sustainability Report (pp. 334, 91)

Fig. 11. Examples of photographs used as materialization in Iberdrola sustainability reports

- Enel

Source: Iberdrola 2019 Sustainability Report (pp. 334, 91).

reason for the company's size. Such reasoning is made possible by comparing the areas covered by the two nuances of green used in the image. Therefore, the image not only materializes the concept of internationalization but infiltrates the text related to the image by making it reflexively possible to think about the company's size, referring to the markets covered and not covered.

In the reports of the following years, visual artefacts are used almost in the same way, even if some additional affordances of the visual mode are exploited for communicating. In the Iberdrola Sustainability Report 2019, the first difference that appears evident is the use of images also for captivating the attention of the reader or viewer of the report (see Fig. 9).

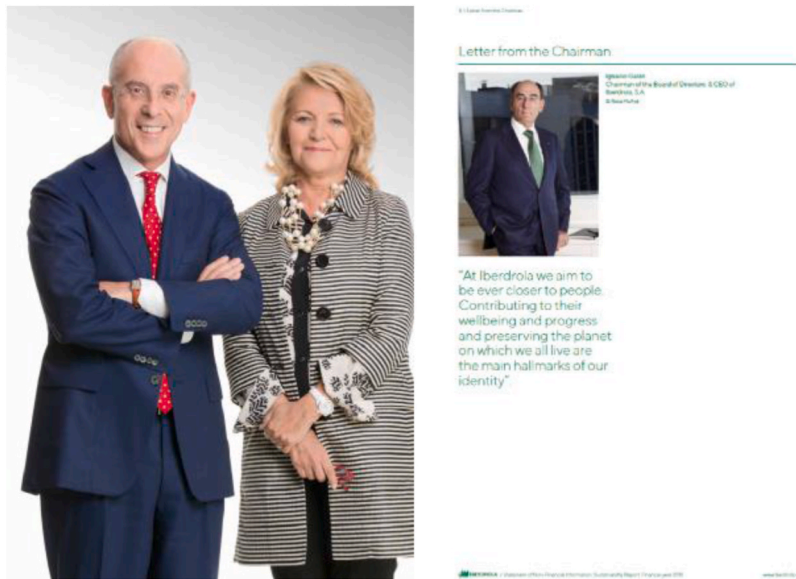
In the Iberdrola 2020 and 2021 Sustainability Reports, the images are also used for materializing and spatializing the meanings communicated about a particular performance. As evident in Fig. 10, the visual artefact used provided, at the same time, a link to the reality of the concept of materiality of the activities carried out by Iberdrola and reported in the document and spatialization of the concept of materiality because the dimensions recalled in the image are different.

The materialization is provided by representing through the visual artefact images usually referable to the reported concept. For example, in Fig. 10, a mobile phone is outlined to materialize the safeness and

health of a person wearing a helmet or the concept of connectivity and digitalization. In both cases, the outlined figures symbolically recall the meaning the creator wants the reader or viewer to focus on and perceive. As for spatialization, in Fig. 4, many topics are put together and related. Specifically, topics are attributed to the three ESG (environmental, economic, social) non-financial performance dimensions and prioritized according to their importance for the organization and its stakeholders.

In all of Iberdrola's sustainability reports, photographs and graphs are almost unused. In the handful of cases of using photographs, these visual artefacts mainly materialize the concepts communicated. In the upper photographs of Fig. 11, the meetings held in different countries for awarding the best organization's suppliers are materialized. Similarly, in the lower part of Fig. 11, photographs materialize the concept of the planet (on the left side). In contrast, the concept of generations of today and tomorrow used in the text are represented by providing examples of different subjects in action: researchers that discuss together, a man and a woman playing with a child and a woman practising sport.

In the case of Enel, what comes immediately in evidence is the more extensive use of photographs. As reported in the section about the descriptive statistics on the reports analyzed, even if tables have been, in absolute number, more used than the other visual artefacts, during the first three years analyzed, Enel has used relatively more photographs



Source: Enel (left, p. 1) and Iberdrola (right, p. 8) 2018 Sustainability Reports

Fig. 12. Photographs of Enel and Iberdrola Board Members for infiltrating and materializing purposes
Source: Enel (left, p. 1) and Iberdrola (right, p. 8) 2018 Sustainability Reports.

than Iberdrola. However, photographs have been the most used during the last year analyzed, 2021.

Apart from the front cover of the 2018 Sustainability Report, which is a recall of the environmental sustainability dimension lived by people, the first visual message coming from the report is the human dimension of Enel. A full-page photograph depicting members of the board of directors is provided immediately in the report before presenting any text or number. The photograph does not mention who those people are (see Fig. 12).

Enel seems to capture the attention of the reader or viewer of the report differently compared to Iberdrola. The latter has reported the photograph of the Chairman of the Board, but the photograph is reported to materialize the subject that is writing the letter. In the former report, visual communication seems much more aimed at infiltrating the human dimension (and potentially also an idea of gender balance) in the texts and numbers provided in the document. It is independent of the contents and meanings that the text and numbers will provide.

In most of the other cases of visual communication in the 2018 Sustainability report, visual artefacts are used for spatializing (e.g., images in Fig. 13 – left side) and materializing (e.g., photograph in Fig. 13 – right side) the textual communication used in the report.

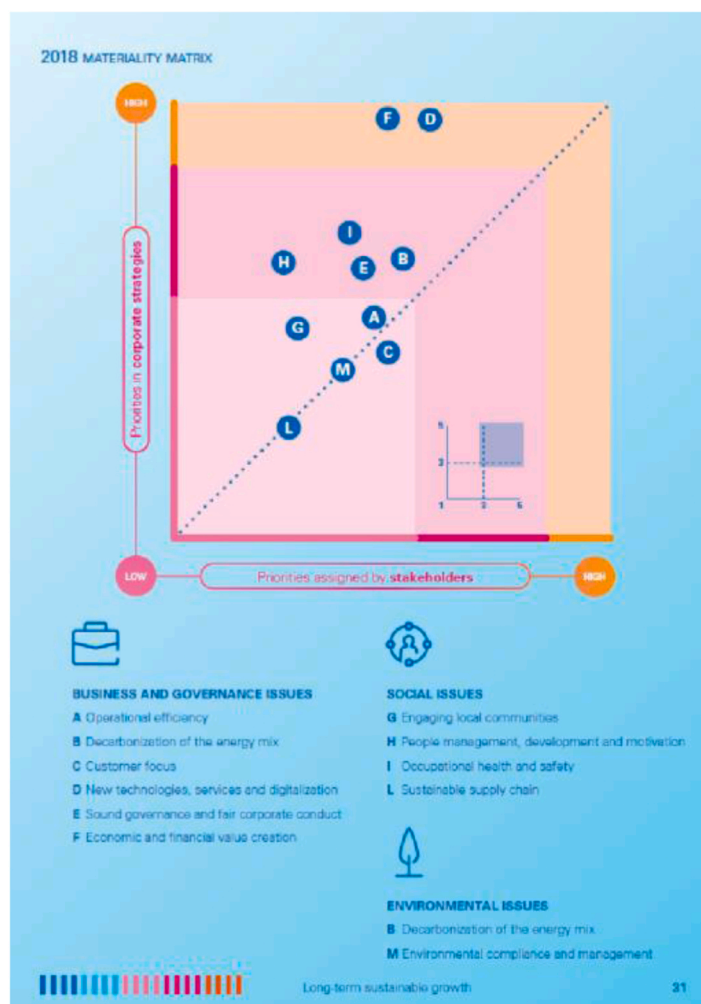
The visual artefact on the left side of Fig. 13 puts together the prioritization of ESG issues from the organization's strategic and stakeholders' perspectives. In this way, for each of the issues analyzed, the reader or viewer of the image should understand how the organization's strategic perspective is consistent with the organization's stakeholder expectations.

Differently, the right side of Fig. 13 represents different people, and in the hands in one of them is a document aiming at leading any reader or viewer of the report to think that the access to energy (the title of the text reported in the page) materializes in that document which states the right of access to energy.

The successive Enel sustainability reports do not highlight a change in using visual artefacts. Tables and graphs (e.g., Fig. 14 – left side) continue to be used mainly for captivating the attention of the readers or viewers and/or for spatializing the meanings communicated through the reports. However, images and photographs continue to be mainly used for spatializing (e.g., Fig. 14 – centre) and materializing (e.g., Fig. 14 – right side) the meaning contained and communicated through the text.

6. Discussion and conclusions

The increasing relevance of corporate communication has stimulated an intense debate at the academic and professional levels about corporate reporting, especially NFI. The recognized limited capacity of financial figures to represent non-financial performance has led to the development of different types of reports with different aims or contents. Among them, sustainability reports are the most published (de Villiers and Sharma, 2020; Mio, 2010), where different dimensions of performance are communicated to increase the level of legitimacy in front of targeted stakeholders (Deegan, 2002, 2007; Hrasaky, 2012; Ruggiero and Monfardini, 2013). To this end, semiotic modes can be used (i.e., verbal, numerical and visual). But the interest in the visual mode of communication in corporate reports, both at the academic and professional level, has been limited (Davison, 2011a, 2014; Quattrone et al., 2021). This limited attention on the usage of the visual mode in corporate reports is no more deferrable because of its intensive use in corporate reports. As shown by our analysis, the organizations analyzed have increased the total quantity and the average quantity per page of visual artefacts used in 2018–2021. The increasing use of images and photographs in sustainability reports could be related to three reasons. Firstly, as graphs and tables use text (verbal and/or numerical) for communicating messages, images and photographs could be preferred because of their faster way of communicating messages (Kress, 2010). According to Meyer et al. (2013), “the visual mode of meaning construction [...] is characterized by a prevalence of holistic and immediate information, rather than linear and sequentially arranged information”. Secondly, the more extensive use of images and photographs could be related to pursuing a more pragmatic legitimation than moral due to the weaker linkage between the message communicated through images and photographs and the underlying sustainable activities (Suchman, 1995). Thirdly, as utility companies are hybrid organizations characterized by the existence of multiple performance dimensions, the increasing use of images and photographs could signify the approaching to or the achievement of a balance between different logics, stakeholder and market logics, which exist and drive decisions and operations in utility companies (Argento et al., 2019a, 2019b; Ligorio et al., 2022). All these reasons imply the need to analyze corporates' communication strategies to understand better the aims and roles that organizations attribute to visual artefacts in defining the messages and meanings conveyed



Source: Enel (left, p. 31) and Iberdrola (right, p. 50) 2018 Sustainability Reports

Fig. 13. Examples of graphs, images and photographs used as spatialization and materialization in the 2018 Enel Sustainability Report

through corporate reports.

According to Hrasky (2012), using the visual mode for communicating non-financial performance could depend mainly on the level of sustainability-drivenness of organizations. Sustainability-driven organizations use more tables and graphs than other organizations because their communication aims to provide more quantitative information. They are considered more reliable in communicating the activities they represent than other types of visual communication (i.e., images and photographs). This situation could be explained at least by the ample room for readers or viewers of corporate reports to interpret the meanings depicted through images and photographs (Barthes, 1977; Davison, 2011a; Ruggiero, 2020). These reflections suggest a change in the legitimation the two organizations analyzed are searching: from moral to pragmatic. Both Iberdrola and Enel demonstrate an increasing use of tables during the first two years of the period investigated. However, focusing on the last two years analyzed (2021 and 2022), the level of use of tables and graphs is almost balanced by that of images and photographs. Consistent with this idea is the captivating function attributed to tables (Meyer et al., 2018). They provide readers or viewers of their NFI with precise and faster information representing the sustainability-driven activities carried out by the two organizations analyzed.

The idea of precision linked to tables and graphs raises the opportunity to develop some other considerations related to images and

photographs. Focusing on the use of these visual artefacts within the sustainability reports analyzed, they have been used for both spatializing and mainly materializing the messages communicated through text (both verbal and numerical). Images and photographs have respectively aimed at, firstly, making more accessible and faster the representation of different messages that otherwise would have needed long text to be communicated and, secondly, specifying the meaning to be attributed to the text of the report by providing the readers or viewers of the sustainability reports examples representing part of their knowledge to be recalled for interpreting what is communicated in the text. In this way, similarly to tables and graphs, images and photographs have contributed to making the textual communication in the reports more precise and faster.

As a result of these considerations, it is possible to argue that the visual mode in the sustainability reports of the utility companies analyzed has been used for accountability more than meaning construction purposes. Quattrone et al. (2021) state that "the visual constitutes a mode of communication that enables meaning-making in and around organizations". To this end, visual artefacts, especially images and photographs (Barthes, 1977), contribute to meaning construction through what is visible and mainly through what is not visible in the visual artefacts. Meanings come from an active engagement of the reader or viewer of the visual artefact with what is not represented. To pursue this aim, visual artefacts should be used for infiltrating the text



Source: Enel 2021 Sustainability Report (pp. 184, 16, 264)

Fig. 14. Examples of graphs, images and photographs used as spatialization and materialization in the 2021 Enel Sustainability Report
Source: Enel 2021 Sustainability Report (pp. 184, 16, 264).

with additional messages that stimulate reflexivity in readers or viewers of corporate reports. But the infiltration affordance of visual artefacts is practically unused in the sustainability reports analyzed.

The growing use of the visual mode within sustainability reports and financial reports and its different affordances make it worthwhile, if not necessary, to reflect on the importance of governing this phenomenon (Caputo et al., 2021). If not appropriately used, the adoption of some visual artefacts (for example, images and photographs) could lead to a reduction in the information quality of the reports due to their more significant level of subjectivity due to both the breadth of the message they could communicate and the varieties and multiplicity of reflexivity that a message could stimulate in its receiver. Nevertheless, adopting a regulatory approach to the visual mode of communication in corporate reports could limit the communication possibilities for organizations, once again binding them towards the adoption of visual artefacts representative of enumerable phenomena, considered more objective. This condition would limit the development of forms of reporting that were born precisely to overcome the limits of financial reporting, mainly based on text (verbal and numerical, especially financial figures). The regulation of the use of the visual mode in the context of corporate reporting could limit one of the main characteristics of the visual, for example, the stimulation of the viewer's reflective capacity not for what is represented by the visual but rather for what is not represented, the invisible (Quattrone et al., 2021).

On the one hand, using the visual mode, if used for pragmatic legitimation rather than practical and transparent information, could lead to what Hopwood defined as the thickening of the corporate veil. It makes still valid Hopwood's (2009) view, according to which "a case can therefore be made that calculation, including that of new forms of accounting, is likely to be a significant feature of a world not only conscious of environmental issues and constraints but also committed to achieving a more harmonious relationship between the human and natural worlds". Therefore, even stronger must be the call for research to analytically study the use of the different modes of communication, especially visual modes, within corporate reports and besides adopting a multimodal perspective (Kress, 2010). Furthermore, the results of this

analysis provide some relevant hints at the professional level. In particular, within organizations, in addition to the relevant role of communication, it is becoming increasingly relevant to develop organizational capacities for governing the different semiotic modes of communication. Visual artefacts can no longer be considered only an aesthetic dimension of corporate reports. Visual artefacts could give organizations' communications a different role in front of their stakeholders. Depending on the visual affordance exploited, an organization can attempt to close the meanings communicated (for example, materialization, spatialization) or open them (for example, infiltration) in order to favour an external construction of those meanings that are not yet clear or that has not its interest to define them precisely. In the first case, an organization plays an active role by deciding to affect the meanings perceived by its stakeholders, while in the second case, it moves more as a follower waiting for the construction of meanings by its stakeholders.

Despite the results and contributions made in the paper, it suffers from some limitations. The analysis was carried out only on large companies, while it would be helpful to see if the trend in using the visual mode can also be found in smaller companies. This further investigation arises as necessary above all following the doubts stated by Hrasaky (2012): "companies that are more sustainable are still producing hardcopy reports that contain high quality glossy photographs, resulting in a report with a larger "footprint" that needs to be the case. Isomorphic pressures might be responsible with the more sustainable firms needing to match the disclosure patterns of their less sustainable counterparts in order not to be misjudged about their claim to sustainability". Another limitation is the focus on the utility sector. It could be interesting to investigate if the use of the visual mode has increased in the same way in the non-utilities sector, above all to verify if the level of hybridization of these companies and the existence of different logics within them leads to greater use of the visual mode to capture the attention of stakeholders and balance the focus on their financial dimension.

Declaration of competing interest

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Data availability

No data was used for the research described in the article.

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