

Enterprise Environmental Transparency and ESG Implementation

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Abstract: The aim of this article is to describe the transparency of enterprises regarding their environmental impacts in the context of ESG implementation. The research was conducted through a quantitative questionnaire survey at the enterprise level. In total, 78 valid responses were collected across various sectors, providing a diverse empirical basis. The study is structured around three research questions: (1) How do enterprises approach transparent monitoring of their environmental impacts? (2) What is the effect of having a clearly defined strategy for reducing the environmental impacts of enterprises' activities on transparent monitoring of environmental impacts? (3) What is the effect of the perceived barriers to ESG implementation on transparent monitoring of environmental impacts? The findings contribute to a better understanding of the relationship between the level of transparency in monitoring and communicating environmental impacts and selected variables such as enterprise size, environmental impact reduction strategies, and perceptions of barriers to ESG implementation.

Keywords: environmental impact, environmental transparency, enterprises, ESG, sustainability

JEL Classification: Q01, Q56

1 Introduction

On its path to achieving sustainable development (WCED, 1987), the European Union and EU law require enterprises to disclose information on social and environmental issues in a transparent manner. The rules were applied for the first time by enterprises in the 2024 financial year for reports published in 2025. This information is intended primarily for investors, consumers, and other stakeholders to assess enterprises in terms of sustainability, as required by the European Green Deal (European Commission, n. d.). The abbreviation ESG stands for environmental, social and governance factors (Gaia Soana, 2024), with these factors being systematically taken into account in corporate governance and investment analysis (Henriquez-Salman, 2025). Kaźmierczak (2022) further adds that these factors are essential for measuring sustainability, but also the impact of an enterprise. These factors are a set of non-financial indicators that lead to enterprise responsibility and can be used by investors to evaluate enterprises. Enterprises therefore focus on ESG in order to remain competitive in an ever-changing environment (Yadav & Prashar, 2022).

In today's world, enterprises need to be managed in innovative and sustainable ways. That is why emphasis is placed not only on implementing ESG principles, but also on reporting on them (Kaźmierczak, 2022). In recent years, non-financial reporting has been growing steadily, especially in developed economies, where enterprises are under increasing pressure not only from investors (Behl et al., 2021). ESG reporting often focuses on quantitative data, which is described in a very concise manner (Gole et al., 2021). Arvidsson & Dumay (2021) also argue that if enterprises do not openly disclose information and respond to questions about sustainability, they expose themselves to the risk of mistrust from the market, but also to higher capital costs. However, Searcy & Buslovich (2014) suggest that ESG reporting sometimes provides ambiguous and incomparable information, which may cause problems for the enterprise.

This is closely linked to environmental impact reporting. This can be characterised as the process of collecting and analysing data from various areas of the environment. These include, for example, air quality, water, soil and weather conditions. Its purpose is to assess environmental policies and their impacts (Shalu & Singh, 2023). The most important factor in monitoring environmental impact is transparency. In recent years, the demand for transparency has increased,

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leading to the expansion of business activities focused on monitoring services. For this purpose, enterprises may employ smart technologies, artificial intelligence, or various audits (Searcy et al., 2022).

Communication is fundamental to ensuring transparency in environmental monitoring. According to Erbaugt et al. (2024), communication shapes both the form and the boundaries of monitoring through specific communicative activities. These activities subsequently contribute to the regulation of human behaviour and generate outcomes related to the environment. Newig et al. (2023) further add that whoever communicates has decision-making power. This applies to the shaping of citizens, enterprises, and the interactions between them.

2 Methods

The aim of this article is to describe the transparency of enterprises regarding their environmental impacts in the context of ESG implementation.

Three research questions were identified based on a literature review.

- 1) How do enterprises approach transparent monitoring of their environmental impacts?
- 2) What is the effect of having a clearly defined strategy for reducing the environmental impacts of enterprises' activities on transparent monitoring of environmental impacts?
- 3) What is the effect of the perceived barriers to ESG implementation on transparent monitoring of environmental impacts?

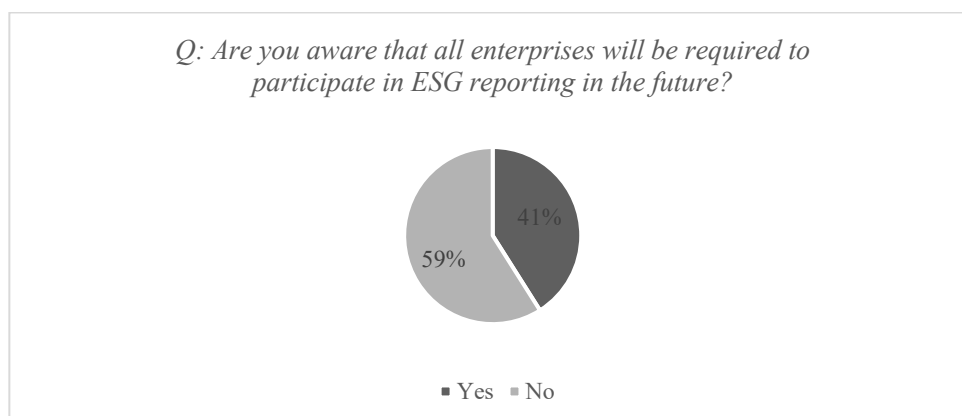
The data collection took place in the first quarter of 2025, specifically during February and March. Data for this study were collected through quantitative research using a questionnaire consisting of 23 questions. The instrument was structured into three main parts: (i) questions characterising the respondent (5 items), (ii) questions concerning the enterprise in which the respondent is employed, and (iii) research-related questions. In total, 78 completed questionnaires were obtained. Among these, 23 responses came from micro-enterprises, 30 from small enterprises, 18 from medium-sized enterprises, and 7 from large enterprises. Regarding sectoral representation, the most of responses originated from manufacturing (15), followed by construction (13), retail (11), transport and logistics (7), IT (4), health and pharmaceuticals (3), financial services and banking (2), and energy (2). An additional 21 responses were classified in the "other" category, which included enterprises engaged in agriculture, tax services, consultancy, or property management.

Contingency tables within the crosstabs procedure in IBM SPSS were used for statistical verification of the dependence between the variables under investigation. To test the statistical significance of the categorical variables, the Chi-square test of independence was employed (IBM, 2025). In data analysis, the abbreviation AR stands for adjusted residual.

3 Research results

The first important variable for interpreting the results is whether the enterprises surveyed are aware that in the future, enterprises will be required to participate in ESG reporting. A total of 41% of respondents indicated that they were aware of this fact (Figure 1).

Figure 1 Awareness of Enterprises' Obligation to Participate in ESG Reporting

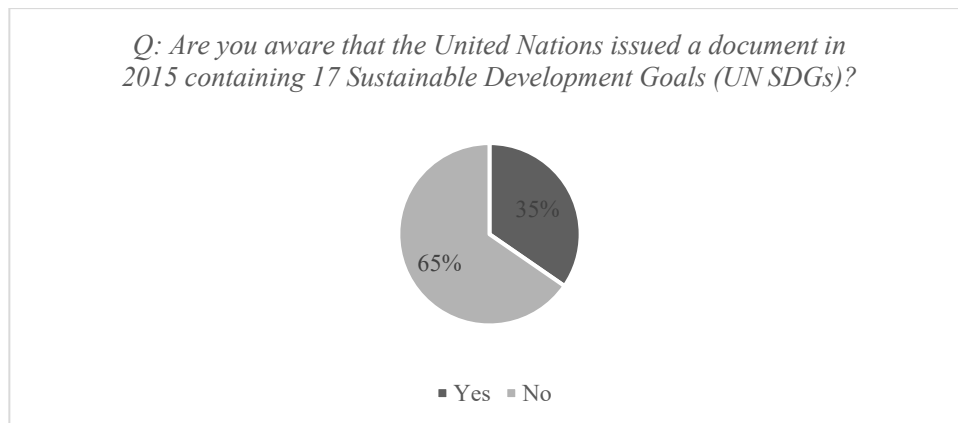


Source: Own processing; n = 78

Moving to a more general level, to the sphere of global commitments to sustainability, the SDGs are considered to be the current commitment of signatories to sustainability. Another change being monitored is whether business leaders are

aware of the fact that their individual activities contribute to this global commitment at the UN level. Only 35% of respondents stated that they were aware of this fact (Figure 2).

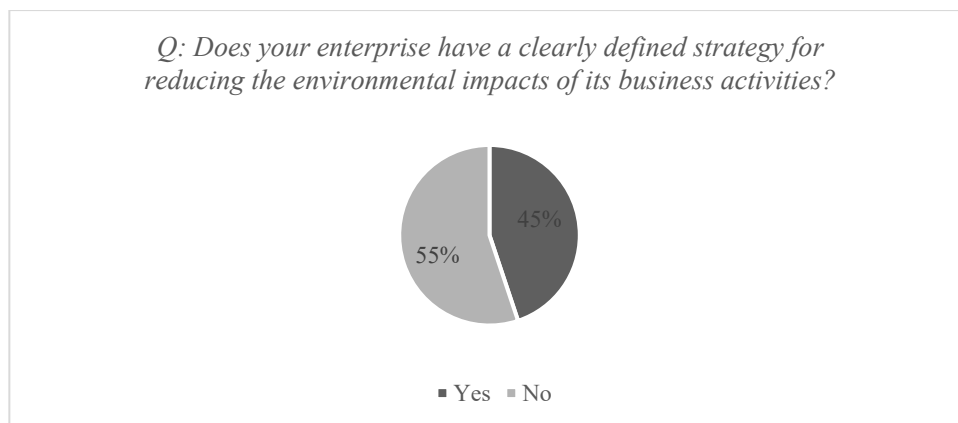
Figure 2 Awareness of the United Nations' 2015 SDG Document



Source: Own processing; n = 78

An integral characteristic of the companies surveyed is whether they have developed a strategy to reduce the environmental impact of their business activities. In our sample, a total of 45% of enterprises have incorporated such a strategy into their strategic management (Figure 3).

Figure 3 Defined Strategies for Reducing Environmental Impacts of Business Activities



Source: Own processing; n = 78

Another variable for contingency tables is the perceived barriers to ESG implementation at the enterprise level. The outputs of previous research, which focused primarily on barriers and support for overcoming them (Buchtele et al., 2025), were used. Table 1 shows the ranking of these barriers according to the importance assigned to them by the respondents. The average value was calculated by converting the responses into numerical values (Definitely a barrier = 1, Rather a barrier = 2, Rather not a barrier = 3, Definitely not a barrier = 4). The biggest obstacle for enterprises is perceived to be unclear return on investment in ESG measures. This is followed by a lack of ESG specialists and the complexity of ESG regulations.

Table 1 Ranking of Barriers to the Implementation of ESG Principles

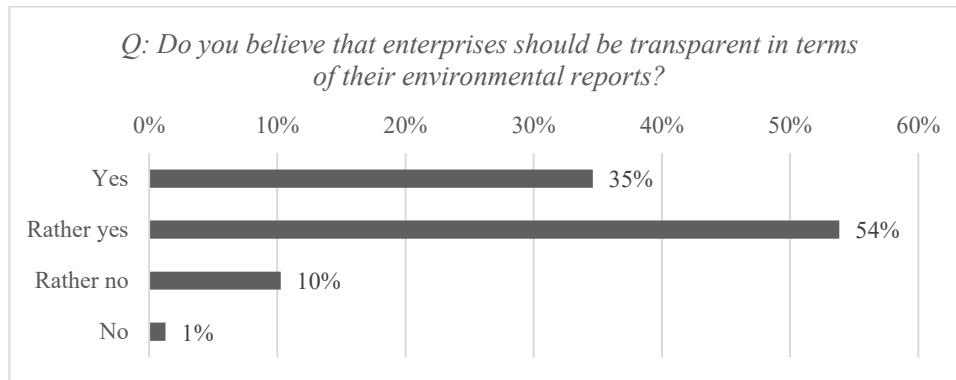
<i>Please rank the following barriers to the implementation of ESG principles in order of their importance</i>	Mean	Rank
Lack of financial resources	2.12	4
Insufficient knowledge of ESG	2.03	3
Complexity of ESG regulations	1.94	2
Lack of ESG specialists	1.94	2
Weak pressure from customers	2.78	6
Weak pressure from business partners	2.79	7
Limited access to validated data	2.47	5
Unclear return on investment in ESG measures	1.86	1

Source: Buchtele et al., 2025; n = 78

The key question posed to representatives of the selected enterprises, and subsequently subjected to the main statistical analysis, is whether they believe that enterprises should be transparent in terms of their environmental reports. Figure 4 shows that the majority of respondents express agreement. A total of 35% of respondents choose the affirmative answer "yes" and 54% choose the more moderate agreement "rather yes."

A statistically significant relationship was also found between the question under consideration and whether the enterprise has a clearly defined strategy for reducing the environmental impact of its business activities ($\chi^2 = 11.448$; df = 3; p = 0.010). If the enterprise has such a strategy, it agrees excessively more with the question under consideration and chooses the answer yes (ar = 3.3). If the enterprise does not have such a strategy, it is significantly more likely to choose the moderate answer "rather yes" (ar = 2.2).

Another statistically significant relationship was found between the question surveyed and the perception of barriers to ESG implementation—unclear return on investment in ESG measures ($\chi^2 = 29.005$; df = 9; p = 0.001). If the respondent selects "yes" for the question surveyed, it is significantly more likely to state that the unclear return on investment in ESG measures is more of an obstacle (ar = 2.6). If respondent selects the more moderate affirmative answer "rather yes" to the monitored question, respondent states that the unclear return on investment in ESG measures is definitely an obstacle (ar = 2.6).

Figure 4 Enterprises and Transparency in Environmental Reports

Source: Own processing; n = 78

Figure 5 illustrates the share of surveyed enterprises that monitor the environmental impact of their activities. A total of 40% of enterprises indicated "yes," while a further 23% selected the more moderate option "rather yes." These results demonstrate that the majority of surveyed enterprises monitor the environmental consequences of their activities.

A statistically significant relationship was found between the question surveyed and the size of the enterprise ($\chi^2 = 21.599$; df = 12; p = 0.042). Enterprises with 1-9 employees are more likely to select the answer "no" (ar = 3.0). Conversely, the enterprises with 50-249 employees are disproportionately more likely to select the answer "yes" (ar = 2.1).

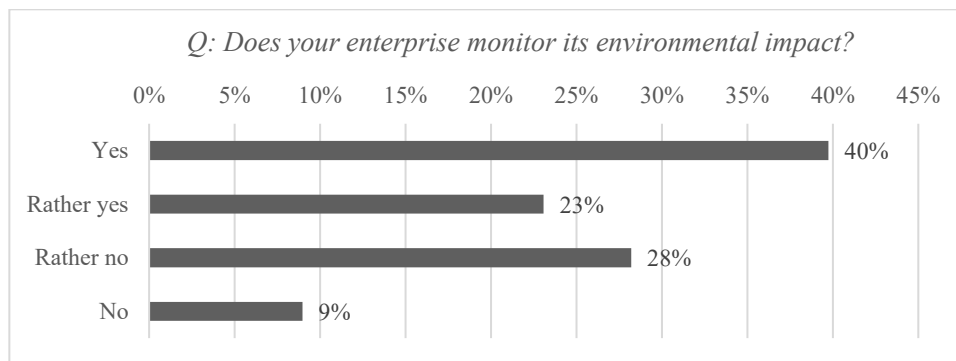
Another statistically significant relationship was found between the question under review and awareness of enterprises' involvement in ESG reporting ($\chi^2 = 9.633$; df = 3; p = 0.022). Enterprises that are aware of this fact are significantly more

likely to answer "yes" to the question under review ($ar = 2.0$). Conversely, enterprises that are unaware of this fact more often select the answer "no" to the monitored question ($ar = 2.3$).

The existence of the aforementioned strategy ($\chi^2 = 28.223$; $df = 3$; $p = 0.000$) also influences the question under study. Enterprises that have such a strategy are significantly more likely to answer "yes" ($ar = 5.2$). Conversely, those that do not have such a strategy are more likely to answer "no" ($ar = 2.5$) and "no" ($ar = 2.5$).

The last statistically significant relationship was found between the observed question and the perception of weak pressure from business partners as an obstacle to ESG implementation ($\chi^2 = 18.300$; $df = 9$; $p = 0.032$). Enterprises that report that this is not an obstacle for them are disproportionately more likely to answer "yes" to the observed question ($ar = 3.4$).

Figure 5 Monitoring of Environmental Impact by Enterprises



Source: Own processing; $n = 78$

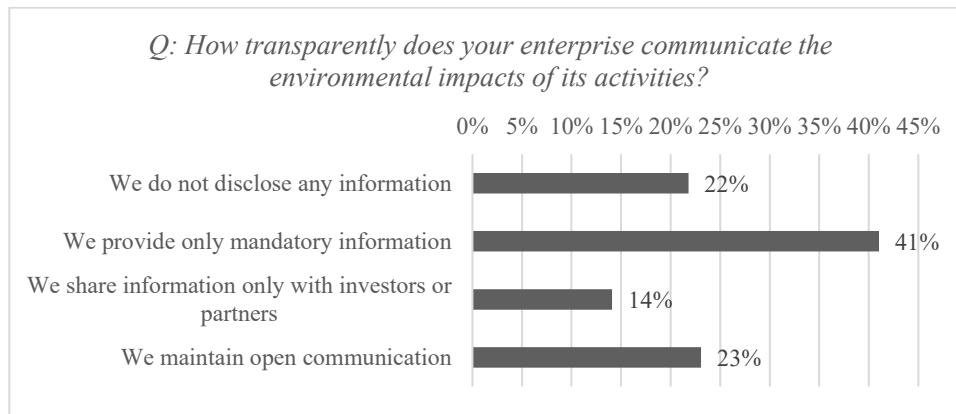
Enterprises were also asked to evaluate how transparently they communicate the environmental impact of their activities. A total of 41% reported that they provide only mandatory information, while 23% indicated that they practice open communication. Furthermore, 14% of enterprises stated that they share such information exclusively with investors and business partners, and 22% reported that they do not provide any information at all (Figure 6).

A statistically significant relationship was observed between enterprise size and the variable under investigation, which was, however, anticipated ($\chi^2 = 26.036$; $df = 12$; $p = 0.011$). Enterprises with 1–9 employees were disproportionately more likely to report that they do not disclose any information ($ar = 3.7$).

A statistically significant relationship was also found in the case of the above-mentioned strategy for reducing environmental impact and the question under study ($\chi^2 = 17.251$; $df = 3$; $p = 0.001$). Enterprises that have such a strategy maintain open communication to an excessive degree ($ar = 3.7$). Conversely, enterprises that do not have such a strategy do not disclose any information ($ar = 2.6$).

The last statistically significant relationships were between the observed variable and the perception of barriers to ESG implementation. In the case of the barrier of insufficient knowledge about ESG ($\chi^2 = 17.432$; $df = 9$; $p = 0.042$), enterprises that report this as a barrier are disproportionately more likely to report that they only provide mandatory information ($ar = 2.0$). Enterprises that perceive the absence of ESG specialists as only a minor obstacle tend to engage in open communication to a greater extent ($\chi^2 = 20.793$; $df = 9$; $p = 0.014$; $ar = 2.7$). The same pattern is observed regarding the perception of barriers related to unclear ESG investments ($\chi^2 = 18.493$; $df = 9$; $p = 0.030$). Enterprises that consider this factor to be only a minor barrier tend to engage in open communication to a greater extent ($ar = 2.9$).

Figure 6 Transparency of Enterprises' Communication on Environmental Impacts



Source: Own processing; n = 78

4 Discussion and Conclusions

Our study shows that most companies (54%) tend to agree with the transparency of environmental reports of enterprises, while 35% express absolute agreement. However, as was found, 40% of companies monitor their own environmental impacts, another 23% tend to monitor them, and 28% tend not to monitor them. The highest proportion of companies (41%) provide only mandatory information in terms of communicating their environmental impact, 23% maintain open communication, and 22% provide no information. Another 14% provide information only to stakeholders.

Sharing information about the environmental impact of activities is a contentious issue, with the transparency of this communication and companies' efforts to prevent the dissemination of negative information being well-documented (Caputo et al., 2021). Furthermore, it has been proven that several factors positively influence environmental performance and transparency of communication, such as gender diversity in enterprise management or its age structure (Van Hoang et al., 2021). Furthermore, the literature shows that there are still significant gaps in the transparency, completeness, and methodological accuracy of impact communication, and not all companies communicate their impacts transparently (Traub et al. 2025).

At the same time, the research focused on the impact of a clearly defined strategy for reducing the environmental impact of business activities on transparent monitoring of environmental impacts. As the analysis showed, all three issues monitored are affected, i.e., areas related to the belief that companies should be transparent in their reports, whether they monitor environmental impacts themselves, and how transparent the communication of these impacts is.

The literature in this area also provides a number of insights and strategies related to the transparent monitoring of environmental impacts in terms of their communication and strategy. In general, a positive relationship is observed between pressure for environmental legitimacy and impression management when disclosing information. At the same time, companies facing pressure for environmental legitimacy tend to engage in selective disclosure of information and have a stronger motivation to manage impressions (Luo et al., 2022). It has also been found that when companies adhere to the Global Reporting Initiative rules in preparing ESG reports, they have more proactive strategies in the areas of environmental investment, carbon emission reduction, and stakeholder engagement (Luo & Tang, 2022). However, it should be noted that creating an optimal strategy for corporate impact reporting and sustainability reporting requires financial investment, which does not necessarily lead to greater transparency (Tang & Higgins, 2022).

The research also focused on determining the impact of perceived barriers to ESG implementation on transparent monitoring of environmental impacts. In terms of whether organizations should be transparent in their environmental reporting, three barriers were identified as having an impact: insufficient knowledge, a lack of ESG specialists, and unclear return on investment. A similar effect was observed for the barrier of weak pressure from business partners to monitor the environmental impact of enterprises. The attitude towards the transparency of enterprises in relation to their environmental reports is influenced by the unclear return on investment in ESG.

Unclear return on investment is an obstacle mentioned in connection with the modernization of equipment or production processes to meet ESG targets, which is closely related to the communication of the environmental impact of enterprises (Liou et al., 2023). The study by Bezerra et al. (2024) identifies other challenges related to the implementation of ESG and its subsequent reporting, such as a lack of indicators and regulatory guidelines, organizational resistance, or insufficient transparency of indicators. The perceived obstacles can be of various kinds. In addition, some studies show that the

exchange of information on environmental impacts negatively moderates the relationship between enterprise stakeholders and sustainable practices within the enterprise's supply chain, pointing to the fact that stakeholders do indeed influence the transparency of an enterprise's environmental impacts (Agyabeng-Mensah et al., 2024).

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