Beyond the Ballot: The Power of Shareholder Sustainability Questions

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Keywords: Shareholder engagement, corporate sustainability, shareholder questions, shareholder meetings, institutional investors, ESG

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This paper examines the effectiveness of the shareholder question right as a direct yet soft tool for shareholder engagement with sustainability issues within the Dutch corporate governance landscape. Utilizing a comprehensive dataset comprising over 3,000 sustainability-related questions, remarks, and board responses from more than 400 shareholder meetings of the largest listed companies in the Netherlands, we analyze the frequency, nature, and impact of the shareholder question right from 2015 to 2023. Our findings reveal that different types of shareholders, including institutional investors, NGOs, retail shareholders, and representative shareholder associations, employ this tool in varied ways, aligning their approaches with their strategic objectives and using different tones of voice. The study particularly focuses on the strategic use of questioning by the Dutch Association of Investors for Sustainable Development (VBDO), demonstrating how its systematic and thematic questioning drives significant corporate sustainability commitments. This paper provides evidence that, when used effectively, shareholder questions can be a powerful mechanism for promoting corporate transparency, accountability, and sustainable practices. However, significant challenges remain in establishing further causal relationships between shareholder questions and corporate actions, highlighting substantial scope for future research.

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1. Introduction

In recent years, the focus on responsible business and finance practices has intensified in Europe, as evidenced by European legislative initiatives such as the Corporate Sustainability Due Diligence Directive (CSDDD), Corporate Sustainability Reporting Directive (CSRD), and Sustainable Finance Disclosure Regulation (SFDR). Sustainability or ESG investing and active ownership are considered indispensable for the transition to a greener economy.[4] The core idea is that the financial sector must channel capital into sustainable investments to ensure sustainable economic growth.[5] Institutional investors and other shareholders are therefore increasingly recognized as key drivers in advancing corporate sustainability efforts.[6]

Shareholders can utilize a wide range of formal and informal rights to influence corporate sustainability practices, including informal conversations with the corporate board, voting, shareholder proposals, and questioning boards at (Annual) General Meetings (hereinafter: [A]GMs or shareholder meetings). Despite the seemingly widespread use of the latter tool – posing (sustainability) questions to the corporate board in (A)GMs – it surprisingly has received much less attention in the existing body of research. This paper conducts a pioneering analysis of the practices and effects of shareholders questioning board of directors about corporate sustainability issues. Our study is centered on the Dutch context, as the Dutch Corporate Governance Code (hereinafter: DCGC) requires the disclosure of detailed (A)GM minutes. As a result, Dutch listed companies commonly publish these minutes on their corporate websites, providing a unique opportunity to explore the usage and effects of shareholder engagement in the form of sustainability questions and remarks during shareholder meetings.

In this way, our research complements existing literature that primarily focuses on shareholder voting, shareholder proposals, and engagement behind the scenes.[7] In addition, while previous research primarily focuses on institutional investors, this study explores the sustainability engagement of various shareholder types, including retail investors, NGOs, shareholder associations, and institutional investors. Notably, shareholder questions can be considered a 'low-cost' public engagement tool accessible to all shareholder types, even those owning just one share. This makes the tool available to a broad range of shareholders. Finally, this research demonstrates that, contrary to what established literature often suggests, the physical AGM still plays an important role in the shareholder engagement process for various shareholder types.[8]

While shareholder questions in shareholder meetings may initially appear to be a relatively 'soft'[9] or even powerless tool for shareholder engagement—given that it involves merely posing

[4] European Commission, Strategy for financing the transition to a sustainable economy, July 6, 2021.
[5] *Idem.*
[6] McNulty and Nordberg (2016); Strine (2019); Strampelli (2020); Ahlström and Monciardini (2022); Bose et al. (2023).
[7] McCahery et al.(2016); Ng et al. (2021); Gormley et al. (2023).
[8] Fisch (2022); Auzepy et al. (2023).
[9] Levit (2019); Auzepy et al. (2023).

questions that the board can easily dismiss—this engagement method can in fact exert considerable influence. Our research shows that this influence is particularly notable when the questioning right is employed by shareholders systematically or in conjunction with other available engagement tools. Moreover, the presence of media at these meetings ensures that any interactions are subject to public scrutiny, which can lead to reputational damage if responses are perceived negatively.[10] Furthermore, it is important that the corporate board adheres to and implements the answers they provide; failure to do so may in exceptional cases lead to a breach of information disclosure,[11] effectively resulting in the dissemination of false information directly from the board.[12] Additionally, the presence of other shareholders like (representatives of) institutional investors in (A)GMs also may play an important role, as these shareholders not only witness the questions and responses firsthand, but can also use this information in their own engagement strategies. Finally, in the context of the Netherlands, as required by the DCGC, the minutes of shareholder meetings are public, ensuring that any dismissive responses or (false) commitments made by the board are also made public. These mechanisms can significantly amplify the impact of shareholder questions, potentially making them a more powerful tool for influencing corporate sustainability practices.

The primary research objectives of this study are to examine which shareholder types exercise their questioning rights at Dutch shareholder meetings for sustainability matters, how they employ this tool, and how and under what conditions these questions can impact corporate policies and practices. Using a comprehensive and recent dataset comprising over 3,000 sustainability-related questions and answers from 402 AGMs of the largest listed companies in the Netherlands, we document that the question tool is – in contrast to shareholder proposals in the European context[13] – frequently used in Dutch practice and show a positive trend in shareholder engagement on sustainability issues from 2015 to 2023. Our results reveal an enhanced use of shareholder questioning rights specifically targeting sustainability concerns. A notable proportion of these questions originate from the Dutch Association of Investors for Sustainable Development (In Dutch: *Vereniging van Beleggers voor Duurzame Ontwikkeling*, hereinafter: VBDO), a multi-stakeholder association with institutional membership that appears to systematically employ the questioning right to promote corporate sustainability. We provide an in-depth examination of the practices of VBDO to illustrate a comprehensive view of soft shareholder engagement through questioning in the Netherlands. Furthermore, we explore the questioning practices of other shareholder groups, including non-governmental organizations (NGOs), and institutional investors, to broaden our understanding of how different shareholders (stakeholders) engage with companies on sustainability matters. We also provide evidence demonstrating how the exercise of question rights by shareholders can effectively influence and transform corporate sustainability policies

[10] Benton and You (2019).
[11] One may note that oftentimes the answers are formulated in terms of expectations and ambitions. So this is so-called 'soft information', which is generally not considered to be misleading.
[12] Gullifer and Payne (2020).
[13] Cools (2023).

and practices. Here, we intentionally adopt a qualitative approach, as a more quantitative method aiming to establish a causal relationship between this soft engagement tool and corporate sustainability performance would face complex challenges related to endogeneity and causality.

The structure of this paper is organized as follows: Section 2 explores relevant legal and financial literature, offering deeper insights into shareholder questioning rights and distinguishing them from more frequently studied shareholder engagement tools, such as shareholder proposals. In Section 3, we provide information about our dataset and the quantitative text analysis techniques that are employed. In Section 4 we discuss our findings. We explore how different shareholder types, including VBDO, incorporate the shareholder question tool within their broader engagement strategies and use them systematically (Section 4.1) and analyze the topics (Section 4.2) and sentiment (Section 4.3) of their questions. Here, we also provide the first (more qualitative) steps in analyzing how and in what ways shareholder sustainability questions of these various shareholder types are likely to influence corporate policies and practices (Section 4.4). Section 5 provides concluding remarks.

2. Shareholder voice tools

Current literature distinguishes two primary mechanisms through which investors can influence corporate decision-making: voice and exit. This dichotomy centers on whether shareholders actively engage with corporate management to effect change or choose to exclude the company from their investment portfolio. Within this framework, voice is regarded as the more effective tool for directly motivating corporate management to implement changes.[14] When shareholders opt for exit, they forfeit their direct influence over the company's sustainability (and other) policies. Consequently, although debated, scholars generally agree that voice, as a direct engagement strategy, is often the preferred approach for fostering corporate change, particularly in enhancing corporate sustainability.[15]

Voice includes shareholder engagement, where shareholders actively engage in dialogues with the corporate board and other corporate officers, often behind the scenes. Additionally, investors can exercise their formal voice rights through, amongst others, voting and shareholder proposal rights. Shareholder proposal rights enable shareholders to introduce voting items at shareholder meetings. Filing or supporting sustainability shareholder proposals nowadays is a key strategy for institutional investors to influence corporate management (sustainability) practices.[16] In the US, submitting a shareholder proposal has historically been relatively accessible and did not require substantial financial investments from a shareholder in the portfolio company. For many years, holding a minimum market value of $2,000 in company shares was sufficient. However, the in 2022 introduced amendments to Rule 14a-8 have raised the barriers for small shareholders, making it more challenging for them to

[14] See e.g. Broccardo et al. (2022).
[15] Pacces (2021); Broccardo et al. (2022).
[16] Barzuza et al.(2020); Bernard et al.(2023)

utilize the shareholder proposal mechanism.[17] Existing research highlights the prevalent use of shareholder proposals in the US. For instance, between 2005 and 2018, companies within the US S&P 1500 received between 450 and 630 shareholder proposals annually, with approximately 20-30% pertaining to sustainability issues.[18] Despite their frequent use nowadays, researchers have historically been critical of the actual impact of these proposals on corporate sustainability practices and policies. Notably, sustainability-related shareholder proposals have often struggled with low support rates,[19] and their non-binding nature has contributed to perceptions of them as weak tools for driving corporate change.[20] In contrast, more recent research signals a shift, with increasing support from institutional investors for sustainability proposals.[21] Research suggests that shareholder proposals are having a positive impact on corporate sustainability, highlighting their importance in the US context,[22] even when they are withdrawn.[23]

In contrast, in Europe, shareholder proposals are seldom used as a shareholder activism tool,[24] primarily due to high ownership thresholds and other (contractual) legal barriers present in many jurisdictions.[25] For instance, in the Netherlands, shareholder proposals face additional hurdles due to 'oligarchic clauses' commonly embedded in the articles of association of Dutch (listed) companies and can easily be excluded or tabled as a discussion item without being a voting resolution.[26] These clauses can require that some kinds of shareholder resolutions receive approval from the managing or supervisory board, significantly restricting shareholder autonomy in using these proposal rights. At the European level, it is article 6 of the Shareholder Rights Directive (SRD I)[27] that permits shareholders to place items on the agenda of the general meeting, either with a justification or a draft resolution. The minimum threshold for exercising this right set by Member States cannot exceed 5 per cent of the share capital, though some Member States have opted for lower thresholds.[28] Importantly, in various European corporate law systems, sustainability matters are typically viewed as strategic issues that fall within the board of directors' domain, rather than the shareholders meeting.[29] However, the Corporate Sustainability Reporting Directive (CSRD)[30] may indirectly grant shareholders of large companies,

[17] Cox and Thomas (2021).
[18] Kastiel and Nili (2021).
[19] Proffitt and Spicer (2006).
[20] Levit and Malenko (2011).
[21] Gerber et al. (2021); Quinson (2021).
[22] Lee and Lounsbury (2011); Grewal et al. (2016); Flammer et al. (2021); Bauer et al. (2022).
[23] Bauer et al. (2015).
[24] Cziraki et al. (2010).
[25] Cools (2023); Bakker (2023); Nagtegaal and Breukink (2024).
[26] *Idem.*
[27] Directive 2007/36/EC of the European Parliament and of the Council of 11 July 2007 on the exercise of certain rights of shareholders in listed companies. *OJ* L184.
[28] Kaur et al. (2022).
[29] Cools (2023). See for a detailed discussion of the Dutch approach and the limitations to put shareholder proposals regarding strategic issues as an item on the agenda of the AGM, van Olffen and Breukink (2023).
[30] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting. *OJ* L322.

including but not limited to stock exchange-listed companies, greater influence over the company's sustainability strategy. It does so by giving shareholders the right to propose an agenda item requesting an accredited third party to prepare a report on specific aspects of the company's sustainability reporting and make it available to the general meeting..[31] Regardless this 'new' shareholder right,[32] shareholder proposals are rarely used by shareholders in Europe, particularly for addressing corporate sustainability matters.[33]

In addition to exercising voting rights and submitting shareholder proposals, larger institutional investors and other shareholders (collaboratively) engage with companies through behind-the-scenes interactions. Many institutional investors seem to prefer this form of engagement, holding dialogue meetings with the management of their investee companies at least once a year.[34] Systematic and anecdotal evidence highlights the frequent and collective use of this technique, particularly in the corporate sustainability context.[35]

While existing literature has extensively explored various shareholder voice tools, surprisingly much less attention has been given to shareholder question rights.[36] This tool – that is widely available to shareholders in virtually all jurisdictions[37] – enables shareholders to directly pose questions to the corporate board during shareholder meetings, without any capital requirement or hardly any content restrictions.[38] Article 9 SRD I states, "every shareholder shall have the right to ask questions related to items on the agenda of the general meeting. The company shall answer the questions put to it by shareholders." Although this provision appears to limit questions to agenda items, it is important to note that in several Member States, including the Netherlands, shareholders may pose questions that extend beyond the agenda items.[39] Furthermore, the agendas of shareholder meetings are often broadly defined, typically including discussions on the annual report of the previous financial year, allowing shareholders considerable scope to ask questions about various aspects of corporate affairs. Article 9 of SRD I also allows Member States to enable companies to provide a collective response to questions

[31] Article 2 (25) Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting. *OJ* L322/15. The right to table a shareholder resolution introduces uncertainty regarding several aspects, including which elements of sustainability reporting can be assessed, the type of reporting that can be requested, and the criteria for accreditation, etc... See for a further analysis, Nagtegaal and Breukink (2024, 2025)).
[32] Furthermore, as of the time of writing, the future of the CSRD remains uncertain due to the launch of the Omnibus Commission proposal on February 26, which suggests important amendments to the CSRD and other sustainability regulations.
[33] Lafarre and Van der Elst (2019).
[34] McCahery et al. (2016).
[35] For instance, Dimson et al. (2015); Azar et al. (2021); Barko et al. (2021); Slager et al. (2023).
[36] Lafarre and Van der Elst (2018); Lafarre and Van der Elst (2019); Auzepy et al. (2023).
[37] Kaur et al. (2022).
[38] Nagtegaal and Breukink (2024).
[39] Lafarre (2017). For questions unrelated to the agenda items, it is generally considered acceptable for the company to provide a more general response compared to questions related to agenda items. This is because the company would not have had the same opportunity to prepare for answering the former (van Olffen and Breukink (2023)).

with similar content, to consider questions answered if the relevant information is already accessible on the company's website in a 'question and answer' format, and to protect the good order, confidentiality and business interests of the company. Despite these potential limitations, the widespread use of this soft tool in practice by various shareholder groups seems to indicate that the shareholder question right can be viewed as a flexible and cost-effective means of shareholder engagement.[40] The exercise of shareholder question rights can serve as a crucial tool for shareholders who lack other means of engagement, making it particularly relevant to research in the context of active ownership. While detailed information on shareholder proposals is readily accessible, however, there is a notable scarcity of data and research regarding the types and quantity of shareholder questions.[41]

Shareholders, including institutional investors, commonly use and combine various engagement techniques in their engagement processes. They discuss specific issues with the board of directors, propose actions to management, question management in conference calls, submit shareholder proposals, and criticize and question management and the board at general meetings, among other methods.[42] When discussions at AGMs are reported in the media and detailed minutes of the shareholder meetings are published, shareholder questions can enhance other voice strategies by making these interactions with corporate management accessible to other shareholders and the broader public. This increased transparency can enhance shareholder engagement processes, foster collective action, and potentially improve corporate accountability. Therefore, the shareholder question tool should not be studied in isolation.

In the following sections, we explore the use of shareholder question rights for sustainability matters to gain a comprehensive understanding of how these rights are utilized in practice and integrated into the engagement strategies and processes of various types of shareholders.

3. Data and methodology

Our pioneering study employs a mixed-methods approach to investigate a manually-compiled database of shareholder sustainability questions and their corresponding answers. This approach integrates quantitative text analytics with qualitative content analysis, desk research on shareholder types and their engagement processes, and input from stakeholders affiliated with these shareholders.[43] In the following sections, we outline the sample composition and its descriptive statistics (Section 3.1). Afterwards, we

[40] The limited research available indicates that shareholder questions are frequently posed by a diverse range of shareholder types, including institutional investors, retail shareholders, shareholder associations, and lobby groups, particularly in the context of corporate sustainability. See Van der Elst (2012); Lafarre and Van der Elst (2018); Lafarre and Van der Elst (2019); Birkmose and Sorensen (2022); Auzepy et al. (2023).

[41] To our knowledge, the following authors are the only ones studying shareholder questions. In the European context: Van der Elst (2012); Lafarre and Van der Elst (2018); Lafarre and Van der Elst (2019); Birkmose and Sorensen (2022). In the US context: Auzepy et al. (2023).

[42] McCahery et al. (2016).

[43] These qualitative methods are used mainly for Section 4.1.

introduce the methodologies for the quantitative textual analyses utilized in this research, including topic modeling (Section 3.2) and other textual analysis techniques like sentiment analysis (Section 3.3).

3.1. Sample composition and statistics

Dutch companies commonly disclose the minutes of shareholder meetings (the 'report of the general meeting') on their corporate websites, aligning with Principle 4.1.10 of the DCGC 2022 (consistent with earlier versions of the DCGC) that follows a comply-or-explain approach:

> "The report of the general meeting should be made available on request to the shareholders no later than three months after the end of the meeting, after which shareholders should have the opportunity to react to the report in the following three months. The report should then be adopted in the manner provided for in the articles of association."[44]

As most companies complied with Principle 4.1.10 we could compile a sample of 402 AGM minutes over a 2015-2023 period from the corporate websites of large-cap (AEX-25) and mid-cap (AMX-25) companies listed on Euronext Amsterdam, with their incorporation seats in the Netherlands. Our selection criterion to be included in the research sample required that the AGM meeting minutes of a company should be available for at least three consecutive years within the research period.

We utilize a sustainability dictionary in R to identify text passages containing sustainability-related terms within these minutes. Due to the bilingual nature of the documents, our dictionary includes both English and Dutch sustainability terms.[45] This approach identified an initial dataset of 10,031 paragraphs with sustainability terms. The research team then manually[46] examined these paragraphs to identify those specifically containing shareholder sustainability questions (including those articulated as remarks[47]) and the corresponding answers provided by corporate board members or external auditors. This refined dataset comprised 1,583 shareholder sustainability questions and 1,480 related sustainability answers. Note that there is not always a direct one-to-one correlation between questions

[44] English translation of DCGC 2022, Principle 4.1.10. Note that while this principle does not explicitly require companies to publish a detailed meeting report on their corporate websites, it is a common practice among Dutch listed companies.

[45] Following the approach of Lafarre and Van der Elst (2018), keywords were retrieved from international soft law guidelines (including the OECD Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights, the ILO MNE Declaration, ISO 26000 standards Social responsibility, the Global Reporting Initiative and the United Nations Global Compact), Dutch soft law guidelines (SER Dutch Banking Sector Agreement and MVO Nederland, DCGC 2022) and the European regulatory framework (including the CSRD, SFDR, Taxonomy and CSDDD). The Dutch (or English) translation of the keywords was included as well.

[46] Since Principle 4.1.10 DCGC only stipulates that the report of the general meeting should be made available, there is no standardized format that can be used to automatically extract shareholder questions for our empirical analysis.

[47] Shareholders can offer suggestions, comments, and other statements as well. Following Lafarre and Van der Elst (2018, 2019), we ensure that our analyses include these various forms of communication.

and answers, because, for instance, some questions remain unanswered or their responses are consolidated into a single reply, in accordance with article 9 SRD I.

We categorized each question according to the type of shareholder who asked it. The meeting minutes typically include the names of the shareholders or their representatives who raised questions. Since shareholders usually identify themselves before posing a question or making a statement, the vast majority of questions in the records clearly indicate the shareholder's name and, in brackets or in-text, their affiliation. We determined the type of shareholder based on their name, affiliation, and, if necessary, the content of their statement. This allowed us to identify five distinct shareholder groups: institutional investors, the Dutch Association of Investors for Sustainable Development (VBDO),[48] the Dutch Association of Securities Holders (VEB),[49] non-governmental organizations (NGOs) and labor unions, and retail and other shareholders. The 'other shareholders' category includes those who asked questions but whose affiliations were not mentioned and could not be identified.

Table 1 presents the descriptive sample information, including the average number of sustainability questions per year and the shareholder types that asked these questions.

[Insert Table 1 about here]

Table 1 shows that the average number of corporate sustainability questions is about three to four questions per meeting, but increases to more than six in 2023. About 70 per cent of the questions in the research sample stem from VBDO. From the dataset, it appears that this shareholder consistently raises questions about the same sustainability themes across AGMs of numerous Dutch listed companies (see Section 4.1.1 for a further analysis of the engagement process of VBDO). Table 1 shows that retail shareholders and institutional investors use the question right about as equally often for sustainability matters, being even slightly higher for the first group of shareholders.

3.2. Topic modeling

To explore the content of the sustainability questions, we use natural language processing (NLP) tools. As a first methodological step, we pre-process the textual data. After translating all questions into American English using the DeepL tool, we follow standard NLP practices. This includes removing stop words, punctuation, and white spaces, as well as converting text to lowercase. We also remove terms such as 'question', 'ask', 'behalf', 'shareholder', years, company names, and the most common names of speakers, including representatives of associations. Finally, we apply Porter's stemming method to reduce words to their base or root forms. Stripping suffixes from words allows for a more

[48] VBDO is a Dutch multistakeholder association that focuses on sustainable development. See for more information on VBDO, Section 4.1.1.
[49] VEB is a Dutch investor association. VEB not only participates in AGMs but also initiates lawsuits on behalf of its members and engages in lobbying activities with Dutch and European policymakers and other organizations.

efficient and systematic comparison of lexical variants (also known as ‘tokens’). Table 2 presents the descriptive statistics for the corpus of sustainability questions.

[Insert Table 2 about here]

We apply topic modeling tools in R to the dataset of 1,583 sustainability questions to uncover underlying themes. Topic modeling involves identifying collections of topics that best fit a set of documents—in this case, the questions. We utilize the Latent Dirichlet Allocation (LDA) model from the topicmodels package in R. LDA is a prevalent method in topic modeling that presupposes each question consists of a blend of various topics, each represented by a distinct group of words. This algorithm helps determine the topics each question relates to by analyzing the specific words it contains. For example, if the model identifies only two topics, it can determine that a particular question is composed of 80% of topic 1 and 20% of topic 2. Additionally, each topic is characterized by a mix of specific words. For instance, the topic labeled ‘emissions’ might predominantly include words such as ‘carbon’, ‘Paris’, and ‘reduction’, while ‘human rights’ might be represented by words like ‘supply’, ‘chain’, and ‘wage’. LDA estimates the proportion of words associated with each topic as well as the proportion of topics that describe each question, facilitating an understanding of hidden thematic structures within the questions and enabling their classification into distinct topics. In Section 4.2 the results of the topic (LDA) model are outlined and analyzed.

3.3. Other methods

There is a rich variety of textual techniques and methods one can apply to textual data like the questions and answers in our research. For instance, not only the topics of the questions matter, also the way a question is posed, including its tone of voice, can be relevant for its impact. In this explorative research, we employ two textual analysis techniques in addition to general topic modeling as outlined in the previous section. First of all, we assess the tone of voice of the 1,583 sustainability questions. There are various dictionaries and algorithms that can measure the tone of voice or sentiment of texts, including the Loughran-McDonald Master Dictionary that is mainly used in finance and accounting research and designed for 10-K filings and other corporate disclosures.[50] Given the nature of this research, however, we selected another advanced NLP tool, the ‘Linguistic Inquiry and Word Count (LIWC-22)’ algorithm,[51] that is commonly utilized in academic research[52] and facilitates the evaluation of psychological, cognitive, and emotional undertones in texts. Unlike other corporate disclosures (such as financial reports), AGM interactions involve spoken language, informal statements, and dialogue. Therefore, LIWC-22 allows us to more generally analyze the linguistic content of these interactions,

[50] Available at: https://sraf.nd.edu/loughranmcdonald-master-dictionary/.
[51] See for more information about this dictionary: https://www.liwc.app/static/documents/LIWC-22%20Manual%20-%20Development%20and%20Psychometrics.pdf.
[52] Tausczik and Pennebaker (2010).

capturing nuances, emotions, and sentiment that may not be present in formal documents. Particularly, LIWC-22 analyzes several linguistic dimensions including Analytical Thinking, Clout, Authenticity, and Emotional Tone. Analytical Thinking measures the presence of formal, logical, and hierarchical thought in communication; Clout explores the expression of social status, confidence, or leadership; Authenticity measures the candidness and honesty of expressions, indicating spontaneity and unfiltered communication; and Emotional Tone captures both positive and negative emotional expressions, with higher scores reflecting a more positive communication tone. We also explore the dimensions Moralization (or Moral) and Interpersonal Conflict (or Conflict); whereas Moral captures language that reflects moral judgments, ethical values, and considerations of right and wrong, Conflict identifies language associated with tension, disagreement, hostility, and emotional struggle, whether internal or external. We use the LIWC-22 tool to evaluate the tone of the questions and the differences in tone between the different shareholder classes. Section 4.3 shows the results of the sentiment analysis using the LIWC-22 algorithm.

We also investigate the impact of shareholder sustainability questions by considering their related answers. Since there is not (yet) – at least to our knowledge – a suitable dictionary or algorithm that can qualify the answers of the corporate board in AGMs and capture promises and commitments,[53] we use a machine learning approach with a well-known LLM – ChatGPT-4 – and carry out few-shot prompting.[54] Few-shot prompting involves providing the model with several examples of the task (more than one but typically a small number) within the prompt. Each example helps further guide the model's understanding and response. Few-shot prompting is especially useful for more complex tasks or when the accuracy of the model's outputs needs to be improved by giving it more context. Section 4.4.1 provides the findings of this machine learning approach.

4. Results

4.1. Shareholder types

Shareholders form a heterogeneous group with varying resources, preferences, and objectives. For instance, institutional investors often allocate dedicated staff and resources to actively engage with companies across a wide range of topics.[55] NGOs, on the other hand, oftentimes have specific goals such as protecting human rights, local communities, or the environment, which guide their shareholder engagement efforts. Retail shareholders, who commonly hold modest and more concentrated portfolios, may be primarily concerned with the financial performance of their investments. Representative organizations like VBDO advocate for the general or specific interests of their members and engage

[53] Whereas LIWC-22 provides some useful categories like 'Certitude', it does not allow us to assess whether there are commitments of the corporate board in response to shareholder questions.
[54] Please refer to Table 8 (in section 4.4.1) for a full overview of our (prompting) methodology.
[55] Flammer et al. (2021).

with investee companies. These divergent interests and approaches can be reflected in how shareholders use their questioning rights.

To gain a comprehensive understanding of how shareholder question rights are utilized in practice and incorporated in engagement strategies and processes, we first analyze how different shareholder types exercise these rights to foster corporate sustainability. Additionally, we explore whether they complement question rights with other engagement tools, such as behind-the-scenes dialogues. Our initial focus is on VBDO, institutional investors, and NGOs, as the main shareholder groups that ask sustainability questions (see Table 1).[56] This provides insights into how questions actually function as shareholder engagement tools within the Dutch corporate governance landscape.

4.1.1. VBDO

VBDO, a multi-stakeholder membership association,[57] comprises diverse members including but not limited to financial institutions, institutional investors, service providers, civil society organizations and NGOs, and individuals.[58] Albeit VBDO conducts other activities as well, including benchmarking and lobbying, in this research we particularly focus on VBDO's shareholder engagement in AGMs. In every year in our research sample, VBDO posed questions in the AGMs of about 33-37 companies. VBDO actively exercised its shareholder question rights by posing shareholder questions linked to three predefined sustainability themes, each aligned with one of the ESG pillars (Table 3).

[Insert Table 3 about here]

Holding very minimal shares in Dutch listed companies (usually only one or two), VBDO's influence seems to transcend its share ownership stake.[59] Its goal is to strategically impact companies by introducing more innovative sustainability topics at AGMs.[60] VBDO also aims at raising awareness among institutional investors and other shareholders that attend the AGMs.[61] VBDO's engagement process regarding question-asking at AGMs can be outlined as a ten-step procedure, starting with the selection of sustainability themes, as depicted in Figure 1.

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[56] In this Section 4.1, we do not delve into the involvement of VEB and retail investors. While VEB poses numerous questions at Dutch shareholders meetings, its focus is not on sustainability matters. While retail investors are well represented in our research sample, they typically lack alternative means for engagement. Thus, it appears that for these shareholder types, the shareholder question tool operates largely as a standalone mechanism.

[57] While the name VBDO suggests it is an association exclusively for investors, its membership base also includes NGOs, banks, consulting and professional services firms, and trade unions (Clune and O'Dwyer, 2020).

[58] Clune (2017); Clune and O'Dwyer (2020); VBDO (2020, 2023).

[59] But many of VBDO's members hold larger stakes in these companies.

[60] VBDO (2016).

[61] *Idem.*

[Insert Figure 1 about here]

Commencing with the first step, VBDO selects its shareholder question themes, aligning each theme with one of the 'E-S-G' pillars (see Table 1). These themes are used for a three- to four-year period, in order to enable VBDO to monitor commitments and progress of companies in subsequent AGMs and to enable companies to take the necessary time to familiarize themselves with the question themes. VBDO's engagement project team produces a long-list of possible themes based on sustainability trends for each ESG pillar, taking into account materiality for the companies involved and particularly seeking themes that reflect global societal challenges requiring business conduct adjustments or transformations that are not limited to a particular business sector, making them suitable for engagements across the broader scope of companies. A subsequent process involves contributions from various stakeholders. The resulting short-list undergoes discussion within VBDO's board, leading to the engagement project team's final decision on the selection of the question themes.

The second step includes question theme letters. These letters, addressed to both the company contact person (often the sustainability manager, investor relations, or company secretary) and the corporate board, announce VBDO's presence at the company's AGM and provide a detailed description of the question themes for that year's AGM. Furthermore, the letter references the company commitments made in response to VBDO's previous engagements and extend an invitation for a follow-up conversation to discuss the priority themes in depth.

As a third step, VBDO's engagement project team conducts a company-specific year-on-year assessment for each theme, evaluating the company's performance based on various criteria such as the presence of a corporate policy, its implementation, and results, using information from desk research (including for instance the annual reports) and insights from previous dialogues with the company. This assessment informs the subsequent fourth step where specific questions are formulated for each company, guided by possible commitments from the previous year and the company's assessment. From our database of shareholder questions, we can derive that VBDO's questions seem to be forward-looking and specifically call for company commitments or confirmations. For instance, during the Aalberts 2020 AGM, the following question was posed:

> "Ms. X (VBDO) inquired whether Aalberts could provide an overview of the risks regarding working conditions and vulnerable groups within the supply chain and whether Aalberts was willing to communicate more transparently about this to its stakeholders in the coming years."

Typically, VBDO's questions follow a format to compliment the company with its current progress and afterwards asks about the importance of the particular theme to the company and/or the company's approach to addressing the theme, possible elements missing from the approach, including suggestions for improvement. It is reflected in one of the questions posed at the 2016 AGM of ABN AMRO:

> "Mr. X (of the Association of Investors for Sustainable Development / VBDO) expressed his appreciation of ABN AMRO's integrated annual report, which he believed will set a trend both in the Netherlands and abroad. He also mentioned ABN AMRO's score on the Dow Jones Sustainability Index and described ABN AMRO's management team as excellent. Mr. X pointed out that one of the positive aspects is that ABN AMRO has developed a sustainability risk policy for the purpose of screening all activities and clients and assessing them in the light of moral and ethical principles. He wondered whether the sustainability risk policy relates to all eligible clients and products, including the passively managed funds, and whether ABN AMRO reports on how this policy has been put into practice in relation to clients with whom problems may possibly arise."

Another question posed by VBDO during the Aegon 2020 AGM:

> "Introduction: We would like to congratulate Aegon with enhancing the disclosures based on the recommendations from the TCFD. To manage the risks that stem from climate change, AEGON initiated the new Responsible Business Investment Committee (RBIC) that instructs the Climate Change Working Group (CCWG). The RBIC is chaired by AEGON's CEO of the Americas. The initial climate change risk analysis only covered the Dutch general account and insurance assets and the Dutch mortgage portfolio, while these in turn only cover for one third of the underlying earnings before tax over 2019. Question: When does Aegon expect to conduct climate risk analyses for the Americas and for other geographical locations where AEGON's assets under management and business activities could be negatively impacted by the consequences of climate change?"

The formulation of VBDO's questions primarily lies with the engagement project team but involves feedback and amendments from so-called 'sector committees' within VBDO (Step 4). These committees, comprised of sector-specific experts including for instance retired employees from companies and sustainability analysts, focus on a subset of companies to ensure that the questions are pertinent and aligned with sector-specific nuances. These sector-specific experts (also called sector representatives) typically also pose the questions in the AGM on behalf of VBDO.

Next, pre-AGM dialogues between VBDO and companies are initiated through engagement letters addressed to the corporate board, outlining the company's performance on the themes and including the questions VBDO intends to pose at the AGM (Step 5). These engagement letters serve as a basis for discussions with various company representatives including for instance sustainability officers and, in some cases, corporate board members. The engagement letters yield a notably high response rate, with VBDO indicating nearly one-to-one conversations stemming from the letters sent. These meetings offer a platform for discussing VBDO's questions, including a potential identification of additional issues by company personnel. Typically, both the VBDO engagement team and the sector representative who will pose the questions at the company's AGM actively engage in these dialogues. The outcomes of the pre-AGM dialogues lead to a final formulation and selection of the shareholder questions (Step 6). VBDO typically asks an average of five questions per engagement letter, with the final three questions selected as the most material for each company to be addressed at the AGM.

The seventh step illustrated in Figure 1 includes the shareholder questions raised during AGMs. While the primary objective of publicly posing questions is to raise corporate awareness about sustainability themes and foster corporate sustainability conduct, VBDO also emphasizes promoting a higher-quality sustainability dialogue during AGMs and informing other shareholders. Posing shareholder questions therefore serves as the publicly visible aspect of the engagement process, with VBDO emphasizing the significance of securing public commitments from the corporate board during the AGM.

Post-AGM engagement covers the final steps, involving the integration of AGM information, including new commitments and confirmations, into the ongoing assessment of companies. The results are subsequently published in yearly AGM engagement reports,[62] which score companies and their commitments on the three yearly themes. These reports are made publicly available on VBDO's website, contributing to transparency and accountability. The final step in the engagement process involves follow-up conversations before the selection of themes for the upcoming year. These meetings, initiated by either the company or VBDO, provide a platform to discuss advancements on themes, share information, gather feedback on new question themes, and address issues that may not have been adequately covered in previous discussions. Typically, it seems that VBDO conducts follow-up conversations with a subset of five to ten companies each year.

4.1.2. Institutional investors

While institutional investors may not prioritize their engagement strategies as explicitly as VBDO does with regard to posing questions during AGMs, it is evident from our dataset that these shareholders also employ questions as a shareholder voice tool within their broader engagement endeavors. Among the institutional investors observed in our sample AGMs, most prominent contributors to the AGM dialogue through the use of shareholder questions include PGGM and MN, both of which are non-commercial Dutch asset and fiduciary managers, as well as Robeco, a leading commercial Dutch asset manager. PGGM oversees pension schemes for various funds, including its major client PFZW, and collaborates with MN in pension administration. Managing PFZW's pension assets and investing in other smaller funds, PGGM reports $330,069 million in assets under management (AUM) based on the Insightia database. MN, a prominent pension administrator and asset manager for Dutch pension funds, engages in integral asset management for nine institutional clients, with reported AUM of $146,300 million (Insightia). Robeco, an international commercial asset manager, reports $187,950 million AUM as per

[62] See for example VBDO (2020 and 2023).

Insightia. Reports from these institutions highlight their active use of shareholder rights for sustainability engagement, including leveraging the shareholder question right. Notably, Robeco's Steward Approach and Guidelines emphasize shareholder questions in AGMs as part of their value engagement process, focusing on long-term, financially material issues with adverse sustainability impacts.[63]

From our dataset we can derive that these and other institutional investors pose shareholder questions at AGMs on behalf of other institutional investors that are participants in an organization called Eumedion. Eumedion, a foundation representing Dutch and foreign institutional investors in listed Dutch companies,[64] emphasizes corporate governance and sustainability.[65] Functioning similarly to the PRI collective engagement style,[66] Eumedion facilitates coordinated engagement in Dutch listed companies. Eumedion coalitions, often comprising a Dutch lead investor and opt-in participants, employ various engagement tools, including private behind-the-scenes engagement and voting alerts signaling contentious items.[67] Our AGM question data suggests that the shareholder question right is also utilized by these coalitions. An example is a question posed at the 2021 AGM of ING.

> "PGGM, also on behalf of certain participants in Eumedion: "ING shows ambition in its climate strategy as we can read in the latest Terra report. We would like to see a more progressive climateneutral commitment in the near future. Is ING prepared to formulate an ambitious climate-neutral policy before the annual general meeting next year and, like Royal Dutch Shell and Unilever, submit it to the annual general meeting for an advisory vote?"

At the 2018 AGM of Aegon, the representative of MN asks a question:

> "Mr. [X] represents MN Investors and is also authorized to speak on behalf of Menzis and APB Vermogensbeheer. He has a question about Aegon's sustainability goals. He is pleased that Aegon subscribes to the Sustainable Development Goals (SDGs) and is pleased with the report on the performance of selected indicators that has been published. What are Aegon's strategy and goals for 2030 to increase impact? Is there an intention to broaden the scope of the three selected goals?"

And for Robeco at the Arcadis 2020 AGM:

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[63] Robeco (2023).
[64] Hermes et al. (2016).
[65] Lafarre and Slager (2023).
[66] The Principles for Responsible Investment (PRI) is a United Nations-supported initiative founded in 2006 to promote the incorporation of ESG factors into investment practices. By adhering to its six guiding principles, signatories commit to responsible investment. For more information, see: https://www.unpri.org/.
[67] Lafarre and Slager (2023).

> "Finally, Robeco, RobecoSAM and Eumedion ask whether the Company intends to request the auditor to issue a reasonable assurance statement on the published sustainability information instead of the current limited assurance statement."

In contrast to VBDO that poses questions related to the same three themes at the AGMs of different companies, institutional investors, particularly participants of Eumedion, seem to use the question right more selectively, treating it as an additional engagement tool in specific situations. Disclosures from these investors, along with Eumedion's documentation, suggest that engagement primarily unfolds behind the scenes or, when necessary, as an escalation tactic involving the exercise of their voting rights. The lead investor, as determined by Eumedion's Investment Committee, takes the lead in these dialogues and asks questions in AGMs if deemed necessary.[68] These dialogues and much of the engagement process by institutional investors occur behind the scenes;[69] thus, shareholder questions play a crucial role in revealing aspects of these private interactions. By doing so, they inform other shareholders and stakeholders about the agendas of institutional investors, particularly how they address sustainability issues with their investee companies, shedding light on their broader engagement activities.

4.1.3.NGOs

The non-governmental organizations (NGOs) in our research sample, such as *Milieudefensie* (Friends of the Earth Netherlands), Greenpeace, BankTrack, Extinction Rebellion, and Migrant Justice, seem to utilize the shareholder meeting platform in distinctive ways that set them apart from other investors and associations like Eumedion and VBDO. Unlike these groups (albeit VBDO indirectly), NGOs do not primarily represent capital interests; they embody activist positions, advocating for social and environmental justice through more confrontational tactics. Their engagement in AGMs using the shareholder question right tool reflects this distinct stance, using it to challenge and expose corporate practices publicly. This method of engagement allows them to bring critical issues directly to the attention of company executives and shareholders, often disrupting the usual flow of these meetings to highlight their concerns. In the broader context of social movement theory,[70] these actions at AGMs can be seen as part of the NGOs' toolkit for effecting change, which also includes lawsuits and public demonstrations. These social movement organizations[71] seem to utilize AGMs as a public arena to assert their activist agendas, effectively transforming these gatherings into stages for activism.[72] This tactic aligns with social movement strategies that emphasize visibility and direct confrontation to force change, aiming to mobilize public opinion and pressure corporations to alter their policies and practices.

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[68] Lafarre and Slager (2023).
[69] McCahery et al. (2016).
[70] Snow et al. (2004); Della Porta and Diani (2006).
[71] McCarthy and Zald (1977); Hadani et al. (2019).
[72] Lee and Lounsbury (2011).

Asking shareholder questions in AGMs therefore serves not only to inform but to disturb, aligning with NGOs' broader goals of advocating for systemic change.

Our research on AGM queries reveals that NGO representatives from groups like Milieudefensie and Extinction Rebellion frequently submit the same question regarding a 45 per cent reduction of the total carbon footprint, inclusive of scope 3 emissions. For example, at the 2023 ABN AMRO AGM, three Milieudefensie representatives asked about achieving 45 per cent reductions across scope 1, 2, and 3 emissions by 2030. The response to this question of the CEO of ABN AMRO:

> "And if you allow me, I will answer that again. Even in this meeting, we keep repeating that we opt for those intensity targets rather than that absolute reduction. We explained that in detail. You can read about it in our climate plan. We have also explained to you why we are taking a different reference year than the 2019 mentioned earlier. That has to do with the fact that we can also continue to be accountable in that intensity target as we have said. And we will continue to do so."

Also during the Koninklijke Ahold Delhaize 2023 AGM it seems that many representatives of NGOs ask the question about the 45 per cent reduction targets. For instance:

> "Ms. [X] has a question about the supermarket chain in the future: My question is whether in two thousand and thirty (2030) Ahold Delhaize is going to emit at least forty-five -- per cent (45%) less CO2 in absolute terms throughout the chain, i.e. Scope 1, 2 and 3 compared to -- two thousand and nineteen (2019)."

The chairman answered that this question has already been asked, and gave the floor to the next speaker. Another example is the question:

> "Mr. X graduated as a climate physicist from Utrecht University and then did doctoral research, stating: "I have no question about SBTi, which in fact has no link whatsoever to climate science. The SBTi is an initiative founded by and for companies . - Will Ahold Delhaize in two thousand and thirty (2030) emit at least forty-five per cent (45%) less CO2 in absolute terms throughout the chain, i.e. Scope 1, 2 and 3 compared to ---- two thousand and nineteen (2019)?".

The chairman interrupted the speaker, clarifying that the question was not relevant to the current agenda item. Subsequently, the chair allowed another speaker to proceed, contingent upon the relevance of their question to the specific agenda item under discussion. Overall, a notable 19 questions were posed by attendees regarding the 45 per cent reduction targets during the Koninklijke Ahold Delhaize 2023 AGM. Among these, 'Mr. [X]', the climate physicist raised the eleventh question. Although only two attendees declared their affiliation with Milieudefensie, one of whom also represented FNV, a Dutch trade union, it is highly probable that the other questioners are also NGO representatives.[73] In addition, it seems that the questions of NGO representatives and other (related) individuals were the main drivers of the substantial increase in the average number of sustainability questions in 2023 as reported in Table 1 (Section 3.1).

To conclude, from the discussion above, it is evident that various shareholder types—ranging from institutional investors to NGOs and multi-stakeholder associations like VBDO—utilize their right to ask questions at AGMs in diverse ways, each aligned with their strategic goals. While VBDO leverages this right to foster sustainability dialogues and monitor corporate progress on predefined themes, institutional investors might use questions as part of a broader engagement strategy, including behind-the-scenes discussions and formal voting processes. On the other hand, NGOs often seem to employ this right more confrontationally to advocate for immediate and substantial changes in corporate practices, particularly concerning environmental and social issues.

4.2. Topic modeling analysis

With the Latent Dirichlet Allocation (LDA) model from the topicmodels package in R – as introduced in Section 3.2 – all 1,583 questions have been classified in the seven topics that best fit the questions.[74] The descriptive results from the LDA model are illustrated in Table 4. Note that we as authors assigned the topic names to the different topics as displayed in Table 4, which we based on the keywords that belong to every topic as identified with the LDA model.

[Insert Table 4 about here]

Certain topics correlate strongly with specific sustainability categories which we identified. Topic 5, for example, is defined as ‘sustainability targets’ (the topic name that the authors assigned to this topic) and includes key words such as ‘target’, ‘report’, ‘goal’, and ‘set’. Topic 6 is identified as ‘diversity’, featuring words like ‘diverse’, ‘gender’, and ‘inclusive’. Topic 3 pertains to ‘Global Value Chains (GVCs)’ with words like ‘chain’, ‘wage’, ‘supplier’, and ‘livelihood’. Topic 1 encapsulates ‘climate risks’ with words such as ‘climate’, ‘risk’, ‘change’, and ‘impact’. However, Topic 4 remains less distinct. After reviewing the top 30 words in this topic, which include ‘scope’, ‘good’, and ‘value’, it appears to relate ambiguously to the manner in which questions are posed, emphasizing urgency and the necessity for action (‘thousand’, ‘now’, ‘time’, ‘will’), along with alignment with the Paris Agreement (‘per cent’, ‘CO2’, ‘2030’, ‘scope’). For the time being, this topic is termed ‘Unknown’.

[73] However, because it was not possible to definitively categorize the other questioners as NGO representatives, they were therefore recorded as ‘retail shareholders and others’ in this research.
[74] The γ in the LDA model provides us with the per-document-per-topic (in our case, ‘per-question-per-topic’) probabilities.

These topics show large overlap with VBDO's 'E-S-G' topics (Table 3), which does not come as a surprise, as VBDO asks about 70 per cent of the questions in the dataset as documented in Table 1.

The next step is to determine which questions in the sample belong to which topics. The γ in the LDA model provides us with the per-document-per-topic (in our case, 'per-question-per-topic') probabilities. Table 5 evidences that, on average, the questions belong for 13-16 per cent to these seven topics, with a standard deviation of about 12-16 per cent.

[Insert Table 5 about here]

The 'max' column shows that several questions clearly belong to one particular topic. The highest score of 0.87 belongs to Topic 1, climate risks, and contains the following question of VBDO at the 2020 AGM of ASML:

> "Additionally, ASML is aware of second-order impacts of climate change, such as fluctuating prices for raw materials and the influence of climate change on the political situation in a country. VBDO is surprised that ASML indicates that the risks are relatively low. The semiconductor sector is considered to be the sector with the highest exposure to physical climate risks by risk analysts of climate data provider 427 (Moody's). Their analysts say that manufacturing companies in the tech sector rely on complex value chains that can be interrupted by extreme weather events, particularly in Asia, which is a region highly exposed to typhoons and extreme precipitation. VBDO is curious if ASML uses different climate path scenarios for analyzing risks on the long term and if it's willing to communicate about the results to its stakeholders? Related to this, is ASML willing to develop policies, in line with the TCFD recommendations, related to the management of physical impacts of climate change?"

As another example, there are two questions (one of them phrased as a remark) with an over 80 per cent score on the topic 'Diversity' (topic 6) at the 2020 AGM of Corbion by VBDO:

> "The VBDO states that Corbion has drawn up a diversity profile and developed a diversity policy for both the company's boards and division CEOs based on the minimum target of 30% male and 30% female representation (pages 50-53 annual report). In the annual report it can be read that Corbion agreed in 2019 on a company-wide Inclusion and Diversity Policy which will be communicated and rolled out in 2020 (page 164). VBDO considers the theme of diversity to be more comprehensive than just gender balance. In addition to age and gender, VBDO also considers work disabilities, cultural background, religion, nationality and sexual preference among characteristics of diversity. Nevertheless, VBDO is pleased to read that Corbion is making progress on this theme and prepared three questions."

> And:

> "Organizations that treat their employees fairly may find an increase in productivity that comes from higher morale and employee commitment. Such companies find it easier to recruit and retain a skilled workforce as well as sustaining or improving their reputation. Is Corbion willing to analyze the gender pay gap for different levels within the entire workforce and report on this matter to its stakeholders?"

Note that topic 4 is, perhaps, more about the semantics of the questions posed. It might be the case that topic 4 highlights the semantics of statements from (mostly) retail shareholders and NGOs, as we found in the previous section that these shareholder categories are often addressing Paris alignment. Indeed, many of the questions that are belonging for 50 per cent or more to topic 4 are asked by retail investors and NGOs; a further look at the data shows that these shareholders often provide more informal wordings in their sustainability questions to companies. For instance, a question that belongs for 77 per cent to Topic 4 is from Milieudefensie at the 2023 AGM of ABN AMRO:

> "Mr. [X]. Yes, thank you. At the risk of boring you, I will end with a question you've heard before because, after all, I'm hoping for a clear yes or no, and it's a closed question. I will introduce it with a short personal note. My name is [X]. I work for Milieudefensie. I am [X] years old. I have been active in energy and climate policy, the climate movement, for almost 40 years now, and I live permanently between hope and fear, hope because I know that humans are capable of a lot and should be capable of solving the climate problem, and fear because I know we are still not doing it. I will be here for a few more decades yet. I'll get by. I also think of my granddaughter every day, [X] is her name. She is [X], and she still has every faith in humanity. She does not yet have any influence over the climate issue. You have. I had the opportunity to work for a few years at Milieudefensie on the court case against Shell, and the fact that we won it gave me hope and cheered me up. My granddaughter, in turn, was cheered up by a happy grandpa. Now all the big polluting companies need to act. If you don't do it for the company itself, at least do it for Renske and all the children of this world. So I have one question for you: will ABN AMRO emit at least forty-five per cent (45%) less carbon emissions by 2030 in absolute terms and across the chain compared to 2019. I would very much like a yes or no."

Table 6 provides more information about the topics related to the shareholder type that asks the question. Here we see that indeed, the questions of retail shareholders together with NGOs belong mostly to topic 4, which was our 'unknown' topic category. We can also see in Table 6 institutional investors seem to ask more about GVCs and sustainability targets (Topics 3 and 5), whereas VBDO seems to focus mostly on sustainability transparency, although they ask many questions in almost all topic categories. The Table shows, in addition, the number of questions per shareholder that relate mostly to a certain topic category, and the average score.

[Insert Table 6 about here]

4.3. Tone of voice analysis

Not only the topics of the questions matter, also the way a question is posed can be relevant for its impact. We assess the tone of voice of the 1,583 sustainability questions using the LIWC-22 algorithm as outlined in Section 3.3. Table 7 presents the descriptive results of LIWC-22 categorization for the different shareholder types in our research.

[Insert Table 7 about here]

Notably, Table 7 shows that VBDO's questions stand out with the highest score in the Analytic category (80.78), surpassing the sample average of 79.01, and particularly the scores of the other shareholder types. Particularly, 125 of VBDO's questions (over 10 per cent of their total questions raised) receive the highest score of 99.00 from the LIWC-22 algorithm. An example includes:

> "The third question comes from VBDO, represented by Mr. [X], in the context of Aegon identifying loss of biodiversity as a material topic in its Annual Report, and the fact that Aegon the Netherlands is a signatory to the Finance for Biodiversity Pledge. VBDO asked Aegon to elaborate on the concrete actions related to biodiversity that will be implemented in 2021 and 2022." (Aegon 2021 AGM, score 99.00 on Analytic).

Conversely, questions from institutional investors, along with their corresponding responses, exhibit the highest Clout scores. These findings can imply that institutional investors convey a heightened level of authority, confidence, and leadership in their communications. Moreover, it is worth noting that the collective engagement by institutional investors observed during AGMs may also contribute to this elevated level of authority. As an example, a question posed by a consortium of Dutch institutional investors during the 2016 AGM of Heineken:

> "The human rights policy. You mentioned this yourself a moment ago. We looked at your sustainability report with great interest. You have indeed had an employee and human rights policy in place for some time. Last year we asked about the implementation of this employee and human rights policy. You report on last year that the organization SHIFT supported you in 2015. Your procurement process and the Heineken supplier's code should ensure that you operate in accordance with the United Nations guideance principles. My question is whether that is the case and whether your due diligence processes are robust, following the collaboration with SHIFT." (Heineken 2016 AGM, score 99.00 on Clout).

The Emotional Tone variable (including the Positive Tone variable) is significantly lower for NGOs than the sample average, indicating more negatively phrased questions. Additionally, questions from NGOs receive the highest scores on both Conflict and Moral. In contrast, questions from institutional investors and VBDO exhibit a more positive tone in both the Emotional Tone and Positive Tone categories. VBDO often uses positive tone words like for instance "compliment" (identified in 139 questions), "appreciation" and "appreciate" (identified in 37 questions), and "congratulate" (identified in 43 questions).

In conclusion, the LIWC-22 algorithm reveals the diverse communication styles and tones employed by different shareholder types, which align closely with how these various shareholder groups use the shareholder question tool as part of their engagement efforts as documented in Section 4.1.

4.4. Commitments analysis

Drawing on insights from previous sections, it is evident that different shareholder groups adopt specific strategies when posing questions at AGMs, aligned with their distinct goals and definitions of success. For example, as demonstrated by the examples in this research, NGOs may emphasize visibility and direct confrontation, using their questions as tools to publicly challenge corporate behaviors and influence public opinion. This tactic is, perhaps, less concerned with eliciting immediate favorable responses from corporate management and more focused on raising awareness and exerting pressure for policy and practice changes. In contrast, organizations like VBDO and institutional investors concentrate on maintaining a constructive dialogue with corporations, aiming to secure and monitor commitments over successive AGMs. VBDO's approach, for instance, features a cyclical process of questioning, response evaluation, and advocacy for ongoing enhancement, spanning three to four years per thematic focus. This method depends significantly on cultivating relationships and sustaining a consistent engagement with corporate management to drive substantive progress in sustainability practices. These contrasting approaches highlight the diverse interpretations of 'success' within AGM interactions. For NGOs, success may be gauged by the degree of public and media attention achieved, whereas for VBDO and institutional investors, it is more directly linked to the concrete commitments obtained and the subsequent improvements enacted.

Although these distinctions are noteworthy, this Section primarily examines the impact of shareholder sustainability questions in terms of corporate management commitments—seemingly the main focus of VBDO and institutional investors, who together account for approximately 80 per cent of the questions in our dataset. In analyzing the effects of these sustainability questions, we will first make use of advanced text analytics to assess the responses from corporate boards, employing an automated few-shot prompting technique with a powerful large language model, GPT-4, in Section 4.4.1. Subsequently, in Section 4.4.2, we will conduct an assessment of the commitments made by the companies they engage with during the AGMs that VBDO discloses in its annual documentation.

4.4.1. Machine learning approach

In order to have an objective approach of the qualification of the answers and see whether they entail commitments or not, we use a machine learning approach with a well-known LLM, GPT-4.o, as outlined in Section 3.3. In this Section, we show the results of an application of a few-shot prompting technique with GPT-4 to classify 1,480 answers in our database.

To systematically analyze corporate board responses in AGMs, we use a simple model with four clearly distinct categories: i) commitments, ii) explanations without commitment, iii) negative answers, and iv) no answers. Commitments (i) include answers where the board makes a promise, sets a goal, or commits to concrete steps, such as implementing changes or meeting targets. Explanations without commitment (ii) refers to responses where the board provides reasoning or context but does not commit to any specific action. Negative answers (iii) include instances where the board declines to act or provides a direct rejection. No answers (iv) apply when the board does not respond to the question and moves to the next speaker, agenda point, or issue, without providing an answer.[75] Table 8 shows our step-by-step approach in more detail using these four categories:[76]

[Insert Table 8 about here]

Of the 1,480 answers, 1,019 were coded as an explanation without confirmation (about 68.85 percent), 442 as a commitment (about 29.86 percent), and 12 as a negative answer (below one per cent). For instance, an answer that was coded as an explanation without confirmation is the following (2019 AGM of Aalberts):

> "Mr. [X] indicated that Aalberts began measuring and reporting CO2 emissions in 2017. In 2018, there was a reduction compared to 2017. Incidentally, the acquisitions and divestments make this a bit more complex, but the quality of the data is improving."

In turn, an example of a commitment (2021 AGM of Aalberts):

> "Mr. [X] replied that Aalberts takes a broader view for materiality analysis than just the impact of material topics on the company itself. For example, the impact of technology on society and the environment is increasingly being examined. Aalberts is aware of the definitions of the various guidelines. He promises to take VBDO's feedback into account for the next materiality analysis."

[75] Initially, we developed a coding scheme with three categories: i) commitments, ii) explanations without commitments, and iii) negative responses. We manually applied this scheme to the first 100 responses and tested it using GPT-4o. However, after multiple iterations with different (additional) coding categories, and discussions, we decided to adopt this four-category scheme for clarity and accuracy reasons.

[76] Given that the use of LLMs in research is still evolving, clear guidelines and best practices for their applications have yet to be established. Therefore, for this research, we carefully documented our steps. Please refer to Table 8 for an overview of the methodology. All prompts are available with the authors upon request.

One of the negative responses can be found in the 2015 AGM of AkzoNobel:

> "Mr. [X] says that with respect to zero waste, AkzoNobel is a strong participant of the World Business Council for Sustainable Development (WBCSD). He emphasized the company's internal goal and the great efforts being made in all business areas to reduce waste. The company has the intention to set targets in addition to financial targets, but targets cannot be set incrementally and therefore there is no intention to do so in the short term."

An example of a response coded as an 'explanation without commitment' that could perhaps also be perceived as a 'negative answer' occurred at Heineken's 2017 AGM. Here, you can see from the response that it offers little substantial information, thus muddying the discussion about the concept of a living wage:[77]

> "You mentioned a "living wage". A 'living wage' is frankly a difficult concept. Two weeks ago we were in the Ivory Coast for the official opening of the new brewery. If we did not offer a 'living wage' to our employees, do you think we would have a winning team? We do 'living wage' everywhere we operate. I am convinced of that. In most countries we are even well above 'living wage'. On the other hand, I would also venture to say that you can set the tone as a company, but you cannot take the place of the government in any country and determine what the minimum wage should be. We should not think that we can regulate everything from the perspective that we know better. Where we work with breweries and distribution organizations around the world, we intuitively do "living wage" because otherwise we would not have a winning team. So I think in spirit we comply with it. I believe Ms. [X] would like to add to that."

Finally, seven responses were categorized as 'no answers', all of them were from the Koninklijke Ahold Delhaize 2023 AGM, where numerous questions focused on the company's 45 per cent emission reduction shareholder.[78]

Table 9 below provides an overview of the classification of the answers of the questions of the different types of shareholders.

[Insert Table 9 about here]

Table 9 shows that both VBDO and institutional investors receive commitments or confirmations for approximately 30 percent and 40 percent of their inquiries, respectively, with very few negative

[77] One should note that GPT-4o classified these types of responses as explanations, which is generally correct, however, in a further research one could further specify. Particularly, this response deflects responsibility by calling the living wage concept "difficult" and shifting the burden to governments, while simultaneously claiming the company intuitively ensures fair wages without providing evidence. Vague and contradictory statements may suggest that this response functions as a non-answer.

[78] In these responses, the chair or another board member interrupted the speaker, asserting that the question had already been asked and answered, discussed, or was unrelated to the agenda item.

responses. While institutional investors have a higher commitment rate than VBDO, VBDO still received commitments in 283 out of 968 questions, which is a significant number in absolute terms.

As discussed in Section 4.1.3, many individuals classified as retail investors are likely affiliated with NGOs and advocacy groups. To account for this, Table 9 also presents combined results for NGOs and retail investors. The data reveals that these shareholders receive negative or non-answers more frequently than other shareholder types. However, similar to other shareholders, board members primarily provide commitments and explanations in response to their inquiries. This trend is particularly evident for NGOs; notably, explicit representatives from NGOs and trade unions (captured in the '4. NGOs and unions'-category, tend to secure more commitments compared to the broader group of retail investors who cannot be directly linked to an NGO.

For example, during the 2023 AGM of AkzoNobel, Milieudefensie's question was addressed in the following way:

> "Answered by CEO [X] AkzoNobel's target is compatible with that of Milieudefensie. AkzoNobel is working hard to reach this target. The challenges with the collaborative aspect of scope 3 is acknowledged, but continued progress in moving towards renewable energy and reducing energy consumption will be made. AkzoNobel appreciates continued engagement on this matter."

Additionally, at the 2023 AGM of BAM:

> "Mr. [X] replied in the affirmative, indicating at the same time that realizing CO2 reductions in scope 3 is complicated and complex. However, he is optimistic, for example about developments at suppliers in the steel and concrete industries. BAM will do its utmost to achieve the targets set and, in consultation with partners in the chain, but also with environmental organizations such as Friends of the Earth, will work on consistently measurable performance with reliable and insightful reporting for the long term."

From this, we can conclude that it seems that corporate management must navigate a delicate balance during shareholder meetings. On one hand, there is a clear inclination to engage positively with NGOs and other advocacy groups, showcasing their willingness to cooperate and their commitment in a public setting. On the other hand, the chairperson is tasked with ensuring the proper conduct and smooth flow of the AGM. The influx of numerous questions on the same topic by various individuals who may be affiliated with NGOs – remember the 19 questions about Paris Alignment posed in the Koninklijke Ahold Delhaize 2023 AGM! – can cause interruptions and may lead to frustration or annoyance from the management side.

4.4.2. VBDO commitments

As highlighted in Section 4.1.1, VBDO annually releases AGM engagement reports, assessing companies and detailing their commitments in response to queries from VBDO representatives. Since 2017, VBDO has provided comprehensive insights into these commitments. Analyzing reports from 2017 to 2023, a total of 348 commitments were identified across all companies, with 320 originating from those within our research scope.[79] These commitments exhibit varying degrees of strength. For example, Aegon showcases a robust commitment in 2020: “Aegon commits to disclose specific engagement case studies related to labor rights and conditions upon achieving significant progress.” Similarly, the commitment reported for the 2023 AGM of Sligro — “Sligro will perform a baseline measurement on packaging in 2024”—indicates a strong substantive pledge as well. Conversely, some commitments appear less substantial, such as Wolters Kluwer’s commitment in 2019: “Wolters Kluwer will research Living Wage standards for its employees and is likely to provide an update on this matter next year”. Another example is Heineken’s commitment from its 2023 AGM: “Heineken will consider publishing its position towards legislation on material topics”.

Most of the 320 commitments reported by VBDO of those companies that are included in the research sample can be associated with their specific E-S-G-question themes (Table 3). Of these, 237 commitments were linked to question themes in the year of the AGM, while 40 commitments pertained to themes from previous years. For instance, Randstad committed to considering age diversity in future Supervisory Board appointments during the 2023 engagements, even though diversity was not a focal theme that year. Similarly, Fugro pledged to validate its CO2-reduction targets in 2023, aligning with the climate adaptation theme used until 2021. Additionally, 43 commitments were more general or addressed topics outside of (previous) question themes. For example, in 2023, a.s.r. committed to maintaining sustainability criteria in its investment policy post-transaction with Aegon, aligning Aegon’s investments with a.s.r.’s enhanced policy. Furthermore, in 2022, Heijmans committed to considering the trajectory of status holders within the company. These findings underscore VBDO’s engagement approach, which typically aligns with annually determined question themes while remaining flexible to address previous themes or broader topics during their engagement activities.

The commitments related to the living wage issue are particularly illustrative of VBDO’s impact in this study. VBDO began addressing this topic in 2016 and continued for four years, providing a minimum of three years of engagement data. Heineken’s commitments serve as a pertinent example. In 2017, a Heineken board member expressed skepticism about the concept, as detailed in Section 4.4.1, which presents it as a negative response. Nevertheless, during or after this AGM, VBDO succeeded in obtaining a commitment from Heineken, albeit a modest one, to consider incorporating the living wage

[79] See for the sample requirements, Section 3.1. Note that VBDO also engages with companies outside our research sample, like Shell, but that companies do not meet our sample requirements.

as a criterion in its Supplier Code of Conduct.[80] Subsequently, the commitments grew stronger, resulting in a 2019 commitment to implement a new Supplier Code by the end of 2020. Here is an overview of these commitments as reported by VBDO:

> "2017: Heineken will consider including living wage as a criterion in its Supplier code of conduct.
> 2018: The company will include a reference to the topic of living wage in the new Supplier code of Conduct, which will be published this year.
> 2019: The company will roll out its updated supplier code of conduct (which references Living Wage) to all current and new suppliers by the end of 2020."

This example illustrates that while establishing direct causal relationships between shareholder sustainability questions and corporate sustainability efforts is very challenging, as various other factors and shareholders (including activists and institutional investors) and stakeholders may have also played a role (behind the scenes), it seems that VBDO's AGM engagement directly contributed to Heineken's adoption of sustainable practices within its global value chains (GVCs). It also underscores the effectiveness of sustained engagement over multiple years by VBDO, utilizing AGM questions to gradually familiarize companies with the subject and elicit stronger commitments.

5. Concluding remarks

This research has provided a comprehensive examination of shareholder questioning as a tool for engaging on sustainability issues within the Dutch corporate governance landscape. Contrary to the existing literature which seems to consider shareholder questions as relatively ineffective or 'toothless', and therefore does not often take into account this shareholder voice tool, our findings demonstrate a more nuanced reality where this tool can hold significant potential for influencing corporate behavior in some cases, especially when employed systematically and strategically.

[80] This commitment stems from VBDO's documentation rather than being explicitly stated in the 2017 AGM minutes of Heineken. It is worth noting that although another board member of Heineken also contributed to the discussion during the AGM, she did not specifically provide this commitment. However, she did confirm the significance of the topic: "[…] Perhaps I may make an addition. I understand your question. We believe and hope and we have also committed ourselves to pay a "living wage" because, of course, it is better if people are motivated to work for us and like to work for us. But we are very broad because of the spread of our suppliers. Of course, we can always include something regarding compensation, but it is very complicated to implement a supplier code. We have already made a lot of progress because our supplier code is already with over 60,000 suppliers. We conduct surveys and audits to validate properly. Whether every supplier around the world pays a living wage depends on the definition but apart from that it is also very difficult. We are aware that it is important. We do our part by committing to pay good wages to the people working in our breweries and to our own employees. This is important to us but it is not easy to state this objectively and check everything from the suppliers. It remains a difficult issue. We worked with the Forum for the Future to create a supplier code. We worked with them last year and this year we are going to review the code, but we have to remain realistic. To be very honest, the most difficult sector is agriculture because on the one hand we want to source over 50% of what is supplied locally but what does a "living wage" mean, if we work with small farmer cooperatives? There is some tension there. Particularly when you start working with commercial groups, that tension rises. Africa will certainly grow slowly but surely toward commercial agricultural production and then that tension is inevitable."

First, our research reveals that AGMs and the shareholder questions that are posed in these meetings are not just procedural formalities. Shareholder questions oftentimes result in substantive interactions that can steer discussions at AGMs towards critical sustainability issues. Second, we see that shareholder questions are often part of a more sophisticated engagement process. Different types of shareholders (including institutional investors, retail shareholders, NGOs, and shareholder associations like VBDO) utilize this tool in diverse ways, tailoring their approaches to fit their strategic engagement goals and the nature of their constituencies. VBDO's methodical use of questioning at AGMs, focused on sustainability themes, showcases how continuous engagement can lead to tangible changes. This organization's strategy of persistent, focused questioning not only highlights the potential of shareholder questions to solicit meaningful commitments from corporate boards but also provides a template for other platforms aiming to enhance corporate accountability through low-cost shareholder rights. However, establishing direct causal relationships between shareholder questions and corporate action remains challenging, thus requiring future research. Particularly, the continuous engagement model used by VBDO presents an opportunity to track changes over time, offering richer insights than methodologies that focus solely on isolated instances like existing research on the effects of shareholder proposals.

The differences in how various shareholder types use this tool also underscore the need for further research. Specifically, more detailed studies are needed to explore how NGOs nowadays seem to more often use AGMs as an engagement tactic, as highlighted by the significant increase in 2023. Such research could not only significantly enrich our understanding of activist engagement's role in advancing corporate sustainability, but can also lead to further corporate governance insights on how a shareholders meeting can be properly conducted. Further research can, for instance, focus on further exploring the prevalence of non-answers by corporate boards, particularly lengthy explanations that appear to serve to evade substantive discussion, in order to assess how often and in what ways companies avoid making clear commitments or provide more substantive explanations.

In conclusion, our study emphasizes the importance of research on shareholder questions within the broader spectrum of shareholder voice tools and takes the first steps in this. We show that, far from being merely symbolic, shareholder questions can serve as an important mechanism for promoting transparency, accountability, and ultimately, sustainable corporate practices. Further research is recommended to fully capture the causal dynamics and impacts of this tool in shareholder engagement, especially in the context of corporate sustainability.

Tables and Figures

Table 1. Sample descriptives

Year	# Companies	# ESG Question passages	# ESG Answer passages
2015	34	151 (4.4)	128 (3.8)
2016	35	127 (3.6)	104 (3.0)
2017	41	142 (3.5)	126 (3.1)
2018	52	147 (2.8)	136 (2.6)
2019	54	151 (2.8)	130 (2.4)
2020	52	209 (4.0)	219 (4.2)
2021	46	199 (4.3)	202 (4.4)
2022	43	179 (4.2)	189 (4.4)
2023	44	278 (6.3)	246 (5.6)
Shareholder types		**Number of question passages in sample**	
Institutional investors		155	9.79%
VBDO		1,095	69.17%
VEB		55	3.47%
NGOs and unions		73	4.61%
Retail shareholders and others		208	13.14%

Note to Table: the table shows the number of companies in the sample and the number of ESG (sustainability) questions and answers passages per year. The average numbers of questions and answers per AGM per year are in brackets.

Table 2. Corpus of sustainability questions

Sample	Raw	Pre-processed
Total tokens	95,384	53,556
Mean tokens	60.3	33.8
Median tokens	51.0	28.0
SD tokens	41.9	24.3

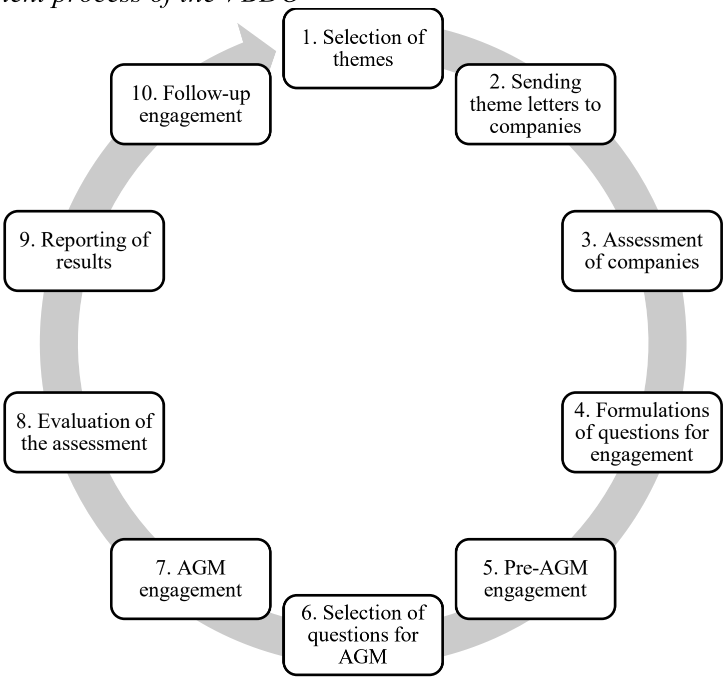
Note to Table: the table shows the total number of tokens (stemmed words) in the corpus of 1,583 questions, and the mean, median and standard deviation of the tokens per question.

Table 3. VBDO's question themes per year

Year	Theme 1 ('E')	Theme 2 ('S')	Theme 3 ('G')
2023	Biodiversity	Labour conditions in the supply chain	Lobbying
2022	Biodiversity	Labour conditions in the supply chain	Diversity
2021	Climate Adaptation	Labour conditions in the supply chain	Diversity
2020	Climate Adaptation	Labour conditions in the supply chain	Diversity
2019	Climate Adaptation	Living Wage	SDGs: integrating SDGs in governance
2018	Natural Capital	Living Wage	SDGs: integrating SDGs in governance
2017	Natural Capital	Living Wage	SDGs: integrating SDGs in governance
2016	Circular economy (Natural Capital)	Living Wage	Responsible Tax
2015	Circular economy (Natural Capital)	Grievance Mechanisms	Responsible Tax

Note to Table: the table shows the question themes of the VBDO's questions for the sample period.

Figure 1. AGM engagement process of the VBDO



Note to Figure 1: the figure shows the AGM engagement process of the VBDO, highlighting the different engagement steps (VBDO, 2020, 2023).

Table 4. Sustainability question topics

Topic LDA	Topic name	Most frequent words (n=20)
1	Climate risks	climat, risk, impact, chang, ctivey, will, ctive, busi, relat, report, whether, ctivey, can, commit, provid, result, posit, first, ctivey, adapt.
2	Sustainability transparency	sustain, report, annual, invest, like, compliment, meet, regard, tax, policy, manag, strategi, integr, first, publish, last, thank, statement, include, discuss, bank, area.
3	GVCs	chain, wage, supplier, live, right, human, suppli, work, condit, report, whether, will, regard, due, labor, can, improv, polici, program, code.
4	Unknown	can, thousand, people, will, much, term, now, like, time, netherland, think, look, compar, per cent, co2, point, made, lot, take, 2030.
5	Sustainability targets	target, goal, whether, will, set, report, emiss, achiev, object, sdgs, materi, ambit, reduct, lobbi, can, agreement, circular, ctive, pari, concret.
6	Diversity	diver, report, board, pay, polici, employ, gender, organ, manag, women, inclus, import, differ, will, note, gap, annual, level, within, supervisori.
7	Natural capital	sustain, use, product, environ, energi, water, make, project, social, new, still, natur, number, consumpt, coal, see, gas, capit, oper, oil.

Note to Table: the table shows the seven topics that were retrieved from the questions with the twenty most frequent words per topic. Based on several metrics, we selected seven topics as the optimal number of topics for our topic modeling algorithm. The Beta measures the frequency of the displayed words. The LDA algorithm was used with Gibbs sampling for fitting (R code: alpha = 1, seed = 10005, thin =1). Note that the Topic name is manually assigned by the authors, based on the words that were identified for each topic.

Table 5. per-question-per-topic probabilities

Topic LDA	Common material topic	Mean	SD	Min	Max
1	Climate risks	0.14	0.14	0.01	0.87
2	Sustainability transparency	0.15	0.13	0.01	0.74
3	GVCs	0.15	0.16	0.01	0.77
4	Unknown	0.13	0.14	0.01	0.82
5	Sustainability targets	0.16	0.15	0.01	0.73
6	Diversity	0.13	0.15	0.01	0.86
7	Natural capital	0.13	0.12	0.01	0.78

Note to Table: the table shows the descriptive statistics of the per-question-per-topic probabilities measured with γ in the LDA model.

Table 6. Topics and shareholder types

Topic	**Common material topic**	**Institutional investors**	**VBDO**	**NGOs**	**VEB**	**Retail and others**
A. Per-question-per-topic probabilities (y) per shareholder type						
1	Climate risks	0.15	0.13	0.12	0.22	0.10
2	Sustainability transparency	0.14	0.25	0.09	0.14	0.14
3	GVCs	0.17	0.10	0.14	0.10	0.09
4	Unknown	0.10	0.10	0.25	0.18	0.27
5	Sustainability targets	0.17	0.19	0.12	0.12	0.11
6	Diversity	0.14	0.14	0.10	0.10	0.10
7	Natural capital	0.12	0.09	0.17	0.14	0.18
B. Topics most frequently addressed per shareholder type						
1	Climate risks	15 (0.38)	172 (0.43)	6 (0.36)	16 (0.54)	15 (0.30)
2	Sustainability transparency	56 (0.43)	164 (0.39)	3 (0.24)	7 (0.32)	29 (0.39)
3	GVCs	12 (0.40)	231 (0.45)	11 (0.45)	3 (0.49)	10 (0.46)
4	Unknown	6 (0.34)	51 (0.34)	27 (0.44)	10 (0.45)	75 (0.54)
5	Sustainability targets	37 (0.43)	222 (0.42)	5 (0.43)	6 (0.32)	16 (0.40)
6	Diversity	23 (0.41)	147 (0.48)	6 (0.50)	3 (0.40)	13 (0.40)
7	Natural capital	6 (0.33)	108 (0.38)	15 (0.53)	10 (0.39)	50 (0.40)

Note to Table: the table shows the mean of the per-question-per-topic probabilities (y) per shareholder type, with standard deviations reported between parentheses (A.). In addition, B. shows the number of questions that were asked by the different shareholder types that reported the highest score for a certain topic category, and the average score (y) for these subsets of questions.

Table 7. Tone of voice

Shareholder type	Analytic	Clout	Authenticity	Emotional Tone	Positive Tone	Conflict	Moral
Questions							
Institutional investor	77.35	61.97	32.31	53.03	2.63	0.04	0.39
	(23.86)	(26.15)	(27.67)	(29.52)	(2.55)	(0.37)	(1.35)
VBDO	80.80	49.29	34.02	51.49	2.69	0.08	0.44
	(22.04)	(25.13)	(28.52)	(30.55)	(2.91)	(0.43)	(1.60)
NGO	69.93	52.58	32.97	39.14	1.74	0.15	0.48
	(25.58)	(28.44)	(28.29)	(25.05)	(1.60)	(0.48)	(1.65)
VEB	74.73	45.61	39.73	40.98	2.16	0.14	0.34
	(26.65)	(25.49)	(31.81)	(31.58)	(2.61)	(0.53)	(1.68)
Retail, other	75.38	51.17	31.76	44.93	2.28	0.10	0.14
	(22.92)	(25.36)	(28.11)	(29.74)	(2.45)	(0.40)	(0.67)
Sample average	*79.01*	*50.8*	*33.72*	*49.85*	*2.57*	*0.08*	*0.39*
	(22.86)	*(25.70)*	*(28.49)*	*(30.35)*	*(2.77)*	*(0.43)*	*(1.5)*

Note to Table: the table shows the means of the different LIWC-22 categories, with the standard deviation in parentheses. Two questions were removed from the sample as these were grouped questions and answers by different shareholder types in the meeting records.

Table 8. Step-by-step prompting approach for GPT-4o

Step	Name	Explanation
1	Brief and clear instruction	Clearly explain the task to ChatGPT (we use model 4o) with the following prompt text: "You will be given responses from a corporate board in an AGM. Please classify each response into one of the following categories: 'commitment' (an answer where the board makes a promise or sets a goal, this includes promises to implement changes, meet targets, or take concrete steps), 'explanation without commitment' (an answer where the board provides an explanation or reason, but does not commit to any specific action or future steps), 'negative answer' (an answer where the board declines to act or provides a negative response) or 'no answer' (the board does not answer the question and directly moves to the next speaker, agenda point or issue). Thank you!"
2	Provide about 3-5 examples for each category	Next, we give ChatGPT a few examples. These are representative of the kinds of responses in the dataset and should act as a reference point. The authors manually coded 100 responses[81] that were used as examples for ChatGPT. The following prompt text is used: "Here are some examples: - Commitment: We are planning to reduce our carbon emissions by 30% within the next years. - Explanation without commitment: We are currently assessing the environmental impact of our activities, but do not have any specific actions planned yet. - Negative answer: We do not believe that making changes to our operational processes is feasible at this moment. - No answer: The chair interrupts the speaker and moves on to the next. In addition, please find enclosed a table with 100 coded responses based on these categories. Please use this reference to code future responses in subsequent prompts in this conservation."
3	New responses to classify	We give ChatGPT new responses to classify in a second batch of about 300 responses. The following prompt text is used:[82] "Based on the previously provided examples and the reference table of 100 coded responses, please classify each of the following responses contained in the Batch2 file enclosed into one of the four categories: 'commitment,' 'explanation without commitment,' 'negative answer,' or 'no answer.' Ensure consistency with the coding approach used in the examples and reference table. Please note that the data do not contain headers. Please provide the codes in the same excel file. Thank you!"
4	Evaluation of classifications and address wrong classifications	After the second batch, we checked a random subset of about 50 responses to ensure correct categorization by ChatGPT. When ChatGPT classified a response incorrectly, we corrected the classification with the following prompt before putting in the next batch (example): "We checked the coding and we want to suggest the following changes.

[81] Here, the authors individually classified these answers, and afterwards compared and discussed their classifications in order to obtain complete consensus.
[82] This is an adapted example of the answers that we used.

		This response [X] should be classified as a 'commitment', because it explicitly mentions a future goal (the renewable energy options) that the board plans to consider.[83] Please redo the analysis for the batch of responses taking this into account. Please provide the new coding in the same excel file. Thank you!"
5	Final batch	Based on the findings for the second batch, we provided a prompt to code the remaining responses: "Based on the previously provided examples and the reference table of 100 coded responses, and the batch2 responses coded so far (the corrected classifications in the corrected file), please classify each of the following responses into one of the four categories: 'commitment,' 'explanation without commitment,' 'negative answer,' or 'no answer.' Ensure consistency with the coding approach used in the examples, the reference table and in batch2. Please note that the data do not contain headers. Please provide the codes in the same excel file. Thank you!"
6	Final prompting	When there were no incorrect classifications of the responses in the random subset anymore, we documented the entire process and saved the prompts and instructions. This documentation is available upon request with the authors.
7	Extra considerations	We ensured that the data is not used to train ChatGPT. We balanced the number of interactions by carefully specifying the prompts, so that we could avoid unnecessary interactions,[84] and excluded web searches to lower the environmental impact.

[83] This is an example.
[84] In particular, using clear and precise instructions, generally avoids repeated clarifications and unnecessary interactions. Representative examples (like in step 2) prevent misunderstandings and reduce the need for corrections. Using the second batch of responses as an intermediate step (step 3), enables GPT to handle multiple responses at once, but at the same time, correction of mistakes and taking into account further instructions, is still possible. Also, incorporating feedback in a single iteration (instead of correcting mistakes one by one over multiple interactions), as done in step 4, helps avoid multiple rounds of reprocessing.

Table 9. Answer categories per shareholder type

Shareholder types	**Total**	**Commitment (%)**	**Explanation (%)**	**Negative answer (%)**	**No answer (%)**
1. Institutional investors	137	54 (39.42)	82 (59.85)	1 (0.73)	0 (-)
2. VBDO	968	283 (29.24)	680 (70.25)	5 (0.52)	0 (-)
3. VEB	76	25 (32.89)	51 (67.11)	0 (-)	0 (-)
4. NGOs and unions	51	22 (43.14)	28 (54.90)	1 (1.96)	0 (-)
5. Retail shareholders and others	254	60 (23.62)	182 (71.65)	5 (1.97)	7 (2.76)
[4] and [5] combined	*305*	*82 (26.89)*	*210 (68.85)*	*6* (1.97)	*7 (2.30)*

Note to Table: the table presents the coded responses to questions from different types of shareholders, displaying absolute numbers and per centages in parentheses. The 'Total' column indicates the total number of responses for each shareholder type. The final row summarizes the combined data for NGOs, unions, retail shareholders, and other shareholders.

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