



A Taxonomy for Social Sustainability in Corporate Communication

MCSC White Paper

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Abstract

Sustainability, or environmental, social, and governance (ESG), reports have become ubiquitous among major companies in recent years, often criticized as tools for greenwashing and met with significant backlash. While the environmental aspects of these reports are well-defined, social sustainability remains poorly understood. Through an analysis of narrative sections from six corporate sustainability reports narrative sections, we propose an initial taxonomy of constitutive social sustainability concepts reflected in corporate speech.

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Introduction

Sustainability reports are increasing in usage as instruments of transparency, accountability, and communication between corporations and parties interested in their sustainability transition. Third-party reporting frameworks, such as Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Task Force on Climate-Related Financial Disclosures (TCFD) promote the practice of reporting as a public disclosure of progress towards sustainable development, along environmental, social, and governance dimensions (“GRI - GRI Standards English Language,” n.d.). Corporations invest significant resources in the reporting process. Investors, auditors, and other financial stakeholders have directed a great deal of empirical scrutiny towards the analysis and verification of information disclosed in reports. Despite the large number of interested parties and relatively well-established suite of empirical tools, research has until recently only analyzed the content of reports that appears within standardized categories. The focus of extant research has been on the assessment of: (1) auditability and veracity of material claims, (2) year-on-year progress, and progress benchmarked against industry peers, and (3) the relationship between reportable categories (a lagging indicator) and processes of internal management control driving sustainability-oriented change within organizations (Michelon, Trojanowski, and Sealy 2022).

The empirical research focused on systematic analysis of report content has focused almost exclusively on what is known as the standardized section of corporate sustainability reports. The standardized section is meant to serve as a quantitative or quasi-quantitative evaluative instrument of broad relevance across industries and through time. This section generally comprises 20-30 pages of tabulated data appearing at the end of the sustainability report (Alqaseer et al. 2021). This appendix is generally presented as quantitative values in categories of sustainability data defined by third-party reporting frameworks, typically GRI or SASB. Reportable categories are primarily established dimensions of sustainability-related liability subject to legally-actionable material claims, as well as voluntary categories of interest to external stakeholders (Kuratek, Hall, and Huber 2020).

Organizations invest significant effort in the accountability, marketing, and reporting of their sustainability initiatives. This includes the collation and presentation of processes and programs specific to their geography, industry, company, and other contextually-grounded information. Descriptions of these initiatives appear in a lengthy narrative section of annual sustainability reports, the format and content of which is not constrained by third party rubrics. There are no third-party guidelines, standardized formats, or types of content required of the standalone narrative section. Because of its resemblance to other types of corporate communication, the literature on corporate governance has primarily viewed the purpose of the narrative section to be an extension of existing discursive tools for public relations and reputation management, with some recent work theorizing it as a venue for year-on-year dialogue with stakeholders (Michelon, Trojanowski, and Sealy 2022). Despite its relative length—on average 70-80 pages for a Fortune 500 company—the narrative section has been the subject of very few formal analyses (Alqaseer et al. 2021). The structure, content, and formatting of the narrative section is driven internally, and varies widely between different companies. Frequent types of content include: discussion of goals and commitments, employee initiatives, collaborative partners, partnerships with multiple types of stakeholders, roadmaps of progress, and emerging areas of action, research, and innovation.

The range of type and quality of content in the narrative section also renders it a rich site for empirical analysis. Unlike the content generated for standardized categorical boundaries, descriptions of sustainability-related content are not constrained by obligations imposed through external reporting. These open containers for communication allow for topics and approaches to sustainability not reflected in existing typologies of auditable evaluation. Sustainability reports are documents that incorporate input from multiple teams and perspectives within the organization, reflecting different stakeholder constituencies and internal and external goals (e.g. Bellucci et al 2019, Stocker et al 2020). This is a source of systematic oversight of emerging or non-quantifiable concepts across all areas of sustainability, felt most acutely in the area of social sustainability, where auditor evaluations of “social” data do not reach statistical significance (Berg, Kölbel, and Rigobon 2022).

“Social” sustainability, in particular, is a notoriously fuzzy concept, particularly poorly captured by existing formalized frameworks, and consistently failing tests of consistency or substantive coherence in both external audits and scientific evaluations (Becchetti et al. 2022). Rater-comparison studies—which attempt to evaluate the accuracy of reported data via third-party assessment—find very limited correlation in auditable content within “social” categories of sustainability. In attempting to identify the presence of a true value based on comparing the assessments of multiple evaluators, Berg et al found particularly low values of Krippendorff’s alpha, indicating that categories of reportable data within reporting systems are not a robust representation of social sustainability efforts (Berg, Kölbel, and Rigobon 2022; Chatterji et al. 2016). The non-specificity of content reportable as ‘social sustainability’ is a known barrier to organizations’ progress in evaluating and rewarding progress. High-level managers working to advance social dimensions of sustainability in reporting and ESG frequently lament the complexity of assessing inherently qualitative and incomparable metrics, even within the same sector (Sajjad et al, 2023). Narrative content is externally-directed communication authored by expert internal teams across all areas of corporate structure. Those driving sustainability within companies face lags and gaps in feedback between their efforts and reportable outcomes. Qualitative content potentially signals changing conceptions of sustainability strategy and changing approaches to management control by the corporation as a complex organization (Maas, Schaltegger, and Crutzen 2016; Becchetti et al. 2022). Our hypothesis is that the narrative section is a site of not merely promotional communication with stakeholders, as has long been assumed by the literature, but reflective of growing dimensions of complexity in company sustainability strategy itself. We investigate the narrative section as a source for information about emerging areas of focus not captured in the externally-drawn boundaries of existing evaluations, particularly in its most under-determined aspects. Successful systematic analysis of the narrative section has the potential to describe the frontier of risk-driven accountability—emerging approaches to sustainability not captured by third parties, auditors, or investor-driven empirical analysis.

As ‘social sustainability’ is the fuzziest and most under-determined area of sustainability, our research aims to systematically and comprehensively evaluate the range of usages of social dimensions of sustainability in a small sample of corporate sustainability reports. We do this through a qualitative inductive (category generating) methodology, in which two human coders evaluate the connoted meaning of selected passages to generate a hierarchy and typology of social sustainability concepts. In addition to evaluative and comparative findings about the social sustainability content of the 3 corporations studied, our final codebook of concepts offers a new rubric of social sustainability concepts as they are used in corporate speech. Our research develops a rubric for a qualitative categorical evaluation of social sustainability based on qualitative inductive coding of three company narrative ESG reports over 2021 and 2022.

Background

In this section, we summarize several streams of scholarship contextualizing the corporate purpose of sustainability reports and the analysis of narrative content in reporting. We (1) first introduce this larger context around sustainability in the business ecosystem followed by (2) how this transparency impacts businesses. We end the section (3) discussing previous work utilizing narrative reporting and computational methods have started to be introduced into analyzing narrative reporting.

Business Usages of ESG Reporting

A business's reputation is imperative to its success; without a good name to rest upon, it cannot build credibility with stakeholders, attract customer loyalty, or gain and keep investors (Carroll 2017). Indeed, corporate reputation—its values, activities, and credibility—is generally the first aspect stakeholders look at when evaluating a business. To achieve this desired reputation, organizations strategize and create platforms that align all their stances with those of their stakeholders, often communicated through sustainability reports (Carroll 2017). These reports serve as instruments of dialogue to investors, allowing them to gain further insight into a company both with and beyond numbers and through the use of narratives (Higgins and Coffey 2016; Veland et al. 2018). Investors are informed regularly through these reports, often on a yearly basis, with the purpose of building trust and influencing investor decisions.

Companies recognize the influence these reports have, and as such, even though they are technically voluntary, over 96% of the world's top 250 companies regularly report on sustainability (Kiron et al. 2017). Yet despite the near-ubiquity of these documents, there are effectively no legal requirements and few restrictions when it comes to voluntary reporting of sustainability related activities. The lack of standardization within ESG reporting gives more power to companies as they strategically shape their reports to cultivate a certain reputation (Diouf and Boiral 2017; Veland et al. 2018).

According to Corporate Sustainability Crossroads, the “[m]ajority of executives agree that having a sustainability strategy is necessary to be competitive” (Kiron et al. 2017). The past ten years reveal an increasing emphasis on ESG as an instrument for developing corporate reputations that specifically feature concern for sustainability. Major asset managers such as BlackRock, State Street, and Vanguard, indicate preference for investing in ESG-forward strategies when forming investment plans and serving clients (Kiron et al. 2017). Companies have come to regard these types of strategies as synonymous with sustainability strategies, which can range anywhere from short term interventions (such as switching to energy-efficient light bulbs in office spaces) to guiding the company's long-term business strategy (such as enacting a plan for the company to only utilize renewable energy sources at every location within the next 10 years). Empirical evidence has shown that companies tend to reap more from their investments in ESG reporting (e.g. Ademi and Klungseth 2022). Some examples of this include investment funds that focus primarily on ESG and invest only in companies that satisfy predetermined sustainability standards (Diouf and Boiral 2017). These funds have used their investments to change their branding and foster new types of deals (Christensen, Hail, and Leuz 2021). Additional compensations include more favorable financing from banks (Goss and Roberts 2011), enhanced sales growth (Lev, Petrovits, and Radhakrishnan 2010), and better performance in their merger and acquisition deals for acquirers (Deng, Kang, and Low 2013).

Companies broadcast such sustainability measures by setting up a formal sustainability reporting infrastructure that communicates reportable information, usually with a distinctly positive spin (Muslu et al. 2019).

Sustainability reports are documents that organizations release to convey information with external communities in a standardized way (Whelan, 2022). The format, length, and type of content of these reports varies considerably across organizations, with common reporting guidelines only applied to the standardized section. The standards applied vary according to the third-party voluntary reporting body that organizations use. The most commonly utilized standards are the GRI—a global standard for broad ESG reporting, the SASB—industry specific ESG metrics tailored to investors, the TFCFD—for reporting climate related financial risks and opportunities, the Carbon Disclosure Project (CBD)—reporting with a focus on transparency in carbon emissions, water, and forest-related disclosures, United Nations Sustainable Development Goals (UN SDGs)—aligning corporate strategies with specific sustainability goals, Integrated Reporting (IR)—long term insights using financial and ESG performance, and International Standardization Organization (ISO) Standards—which addresses specific topics and offer certifications in some, such as environmental management systems (Bloomberg Law, 2022).

Previous qualitative analyses have been conducted to examine the role that sustainability reporting serves in driving change. Higgins and Coffey (2016) conducted a thorough analysis of three companies, each with a different approach to describing sustainability in their reports. They sought to provide a baseline which researchers could use to find avenues for new dialogue between companies and investors. By analyzing the narrative and performance sections of these companies' sustainability reports, Higgins and Coffey picked apart the narratives of each company, detailing the claim, grounds, and warrants for each set of statements and beliefs. They found that the narratives within these reports played a significant role in shaping investor perceptions and encouraging companies to align their practices with sustainability expectations, ultimately serving as a vehicle to drive positive change.

Transparency in ESG Reporting

As we signal above, sustainability reports do tend to lean in a strongly positive direction. The voluntary nature and absence of standardized, auditable categories in a full range of sustainability activities leaves sustainability reports vulnerable to greenwashing—a deceptive practice companies use to deceive stakeholders into believing a more sustainable or “green” version of activities through false or unsupported statements (RepRisk 2023). During 2023, 25% of climate-related ESG incidents were related to greenwashing, a number that is 70% up from the previous year (RepRisk 2023). Transparency is of increasing concern among investors, stakeholders, and citizens interested in the topics covered by sustainability reporting.

Clearly, as demonstrated by the prevalence of only highlighting positive trends/outcomes, companies have a bias against reporting negative outcomes, likely believing such content would be detrimental to the company's interests by deterring stakeholders reading the report (Hahn and Lülfs 2014). Researchers have documented a tendency to hide or minimize negative outcomes from the eyes of stakeholders (Mishra and Modi 2013). While this behavior within reports seems intuitive, the opposite approach to disclosure may actually be more beneficial—properly disclosing negative aspects within a report makes a company seem more trustworthy in the eyes of stakeholders and increases their disclosure quality (Muslu et al. 2019). However, the majority of companies still don't properly disclose all aspects of their practices within their reports and will employ narrative tactics to skirt guidelines that instruct them to do otherwise (Hahn and Lülfs 2014).

When reporting on events that could potentially reflect negatively to investors, companies tend to use symbolic strategies rather than substantial strategies (Hahn and Lülfs 2014). Symbolic strategies have no connection to actual performance (i.e. a company saying that sustainability solutions are a focus for them) while substantial strategies represent genuine commitment and plans to take action (i.e. a company describing a current plan they are implementing to use solar power at all office locations). The primary difference between these two strategies, from an accountability perspective, is the degree to which they are legally actionable.

One example of this is when legal action was taken against Coca-Cola Co. by a non-profit organization, Earth Island Institute, for violating the District of Columbia Consumer Protection Procedures Act (CPPA) by falsely marketing themselves as "sustainable." Coca-Cola's motion of dismissal was granted because the claim was deemed aspirational in nature, not tied to a product or service, and could not be construed to allege general misrepresentation. Many of the statements seen in sustainability reports are, like Coca-Cola's, aspirational in nature by this legal definition, even if they convey that the company means to take action with a long-term plan (Earth Island Institute v Coca Cola, 2022). For example, Coca Cola stated that "Part of our sustainability plan is to help collect and recycle a bottle or can for every one we sell globally by 2030". While this gives the appearance of a definitive plan, it is aspirational in nature since concrete language wasn't used and, at the time of the case, the commitment date was too far in the future to determine if enough/any action was taken (Earth Island Institute v Coca Cola, 2022).

Previous Work Analyzing Narrative Reporting

Early studies of the narrative section of sustainability reports used word counts and page counts to evaluate the presence or absence of specific content within broad evaluative categories. Human coding by trained readers, a notoriously time-consuming deliberative process, has exclusively focused on evaluation against existing simplified rubrics. For example, an early study (Blacconiere and Patten 1994) used a "yes"/"no" coding rubric based on 5 general areas of environmental concern. The emergence of software capable of automating textual analysis at the turn of the 21st century facilitated early studies on word content to understand the context of sustainability practices. Notable exemplars include Chen and Bouvain (2009), who assembled statistical concept maps; Nishant, Goh and Kitchen (2016), who used text mining; and Tate, Ellram, and Kirchoff (2010), who use an early LLM (large language model) from network theory and linguistics to develop inferences based upon the position of words. This descriptive evaluation of the major themes of corporate sustainability and ESG reports has been largely confined to the accounting literature, where emphasis on large-n statistical significance (where a sample size of a few hundred is considered small) and the potential for ease in automation of coding rubrics have favored research that leverages a large sample size of documents against a simplified instrument of a small number of categories within existing sustainability rubrics. The analysis of narrative content within these fields is treated as a secondary source of qualitative information.

Large-scale formal quantitative analysis—including meta-analyses and comparisons between auditor-evaluators—have consistently found extremely poor statistical significance in the existing categorical landscape of social sustainability content. The recent acceleration in sophistication of LLM and NLP (natural language processing) as forms of empirical analysis have led to a new wave of systematic studies of the narrative section. As with earlier large-scale analyses, these studies evaluate reports along a small number of already existing categories of standardized sustainability topics. Early approaches have analyzed the narrative section via automated large-scale computational models to cover extensive collections and document

broad trends in word usage. Most recently, Lin et al. (2024) used a word embedding model to analyze 210,000 reports, creating a dictionary of 7 subtopics comprising both environmental and social dimensions. Evaluation of these dimensions is limited to recording the denotative presence or absence of a subtopic within a given sentence. The 7 subtopics evaluated are: climate change, natural resources, pollution and waste, ecosystem, human capital, and other stakeholders. Inter-rater reliability between human coders assessing the presence or absence of sustainability-related content in each sentence showed a relatively high Kappa statistic of 0.84¹. However, this value dropped significantly when raters were tasked with identifying subtopics—particularly social topics with “ambiguous and nuanced boundaries” that likely require more nuanced judgement (Lin et al. 2024). In particular, Lin et al.’s inter-rater Kappa statistic for evaluating the two human-centered topics was quite low - for ‘other stakeholders’ it was 0.53, and for ‘products and customers’ it was 0.52, indicating the inherent complexity in identifying sustainability subtopics, even from a highly simplified list. Human checks of Lin et al.’s LLM identified a notably high inter-coder agreement between machine and human coders—an overall average of 94.8% for the presence or absence of sustainability-related content, including greater than 93% agreement within all subtopics. Lin et al. also examined other trends in the structure and quality of the narrative section, including length, specificity, and quality of disclosure as indicated by use of “boilerplate” language—which is somewhat comparable our own category developed in this research of *omit-non-meaningful*.

Recent research has taken several different approaches to trying to define and delineate topics within ESG rubrics. Berg, Kolbel, and Rigobon (2022) identified 64 separate categories of ESG indicators. Confetto and Covucci (2021) proposed 56 topics of sustainability communication along the dimensions of planet, people, profit, and governance from analyzing corporations’ web pages. In their literature review of corporate sustainability measurements, Paziienza, de Jong, and Schoenmaker (2023) found five common indicators in social categories: health & safety, human rights, child labor, training and education, and employment.

In contrast to existing research directed towards evaluating the taxonomic categories of sustainability within ESG and sustainability reports by the accounting and finance industry, our research explores a content analysis of sustainability reports from an inductive (category generating) perspective. Our project is one of the first systematic intercoder-validated year-on-year qualitative analyses of corporate sustainability reports. It provides a view into the shifting landscape of corporate approach and programmatic relationship to social sustainability concepts. We build on emerging findings from interviews with corporate sustainability professionals about the complexity of social sustainability—both as a composite evaluative category with subcomponents, as well as a discursive presentation of strategy to stakeholders. Because existing computational tools are only reliable over simplified categories within the environmental components of sustainability, they are not able to capture changes in the structure and content of sustainability evaluation. They therefore also miss what renders the narrative section a conveyer of future categories of evaluation within the standardized section. To the extent that narrative content about action, initiatives, and emerging strategies is communicated in good faith, it conveys important information, both about the ever-changing additional categories of social sustainability, as well as the internal management control processes driving organizational change.

¹ The Kappa statistic evaluates binary categories. Krippendorff’s Alpha is more versatile—allowing comparisons between multiple raters and types of data in more complex evaluations.

Methods

In this section, we describe how we analyzed social sustainability in two years of ESG reports from three large American corporations. From this analysis, we built an inductive taxonomy of social sustainability concepts that describes (1) the categorical content of social sustainability, and (2) how these concepts are invoked linguistically within narrative communication.

To first analyze ESG reports, we chose to extract relevant passages. Drawing on the academic literature and interview data with corporate sustainability professionals, we assembled a list of central keywords in social sustainability. The keywords were: *climate equity/climate justice*, *community*, *corporate citizen*, *economic inclusion*, *human rights*, *just transition*, *justice*, *labor*, *living wage*, *social*, and *workforce*. We also included derivatives of phrases, such as *communities*, but did not include acronyms (i.e.: *social* was not counted if the acronym ESG was used). Use of these keywords was highly uneven: economic inclusion was mentioned once, and living wage mentioned twice (by Dow). *Climate equity*, *climate justice*, *corporate citizen*, and *just transition* did not return any quotes in any reports.

We then chose three MCSC member companies of large size and varied business markets based in the United States to analyze: Dow, Boeing, and IBM. We systematically searched the entire narrative section of three companies' sustainability reports from fiscal year 2021 and 2022 and collated instances of each keyword along with sufficient language from the surrounding sentence(s) to completely capture the denotative meaning from the contextual content of that instance of the keyword. Each block of text in which a keyword appears is evaluated as a whole. The quote blocks we evaluated covered approximately 9 –15% of all text in the narrative sections across the six reports. We also compared structural features of the reports, such as any significant changes in a report's table of contents between the two years.

After extracting passages, we assembled an initial taxonomy of social sustainability. We drew on existing frameworks of social sustainability (Antolín-López, Delgado-Ceballos, and Montiel 2016; Confetto and Covucci 2021; Berg, Kölbel, and Rigobon 2022; Pazienza, de Jong, and Schoenmaker 2023) to construct this initial codebook of concepts. Initial categories within the codebook reflected a people-centered approach with categories falling into *workforce*, *workers in the value chain*, *community*, or *consumers/users/shareholders/regulators* (WBCSD 2023). Using the codebook, human coders coded any passage where assertions are made relating the keyword to an action or value relationship to various kinds of individuals, groups, or communities comprising the company's presentation of its social mission. Our task as coders was not to evaluate the veracity or legitimacy of statements and assertions, but only to identify (1) the presence of social sustainability content, and (2) categorize it within our initial taxonomy according to the people, communities, or social groups referenced. Most statements had a clear denotative meaning, but frequently our task was to identify the connotative meaning driving assertions. Where insufficient or inconclusive contextual language was present, (3) we developed two coding categories to indicate no meaning. Two to three separate coders coded the excerpts from the reports. Each excerpt was coded with one of the following options: (1) either one parent or secondary code, (2) *omit-non-meaningful* quotes due to their vagueness or lack of clarity, with or without a parent or secondary code to denote an intended category of meaning or (3) *omit* for content occurring within an index or heading. While coding the reports, we iteratively updated our codebook (Saldana 2009). In groups of two or three, coding was done independently before coders met for inter-coder validity checks to adjudicate disagreements. Occasionally, a third voice was brought in to arbitrate and discuss disagreements arising from confusing content. These checks often revealed nuanced

discussion that further refined our understanding of social sustainability categories. Approximately half of all quotes required discussion to reach coder agreement. When discussion was needed, a coder would present their reasoning for codes, followed by discussion which often necessitated referring to the broader context of the phrase within the sustainability report until consensus on its codable content could be reached. The significant amount of disagreement and discussion undertaken between trained and educated human coders to adjudicate social sustainability content underscores the complexity of language, as well as potentially also substantive engagement, with the social dimensions of sustainability within these reports. The nuanced engagement with this language complements large-dataset work done using natural language processing in the accounting and finance literature (Berg, Köbel, and Rigobon 2022; Lin et al. 2024). From this coding process, we continually refined our taxonomy of social sustainability concepts that we present in the next section.

Findings

Describing Social Sustainability – Our Taxonomy

Below are two codebooks of social sustainability concepts. Table 1 is our final codebook, developed, modified, and elaborated iteratively over a systematic process of hand coding 6 sustainability reports and identifying all usages of central social sustainability keywords. Table 1 represents a significant evolution from Table 2, our initial draft codebook assembled from common existing social sustainability typologies. Developing and refining this codebook is one of the major contributions of this research.

Our final taxonomy of sustainability and its associated codebook is found in Table 1. Over the course of developing this codebook, several key points emerged. First, we had parent-level codes or overarching groups: *workforce*, *workers in the value chain*, *community* (outside of company), and *consumers/users/shareholders/regulators* (WBCSD, 2023). We began with these higher-level groups comprising the social category through a human- and worker- centric viewpoint. We also included the workforce, as companies often spoke about their domestic and educated workforce differently than they did workers who work in manufacturing or somewhere along the supply chain. Importantly, we saw the stakeholder category evolve over our coding process to include more explicit differentiation between stakeholder categories. The existence of the wider range of stakeholders than is described in existing social sustainability taxonomies only became apparent through our close analysis of the reports. Notably, we added regulators as a salient stakeholder group distinct from people with a financial relationship with corporate activities such as consumers, shareholders, and users. This expanded container of intended audiences for narrative claims also allowed us to code social sustainability content when we couldn't otherwise match content to more specific second-level claims.

Over the course of coding the reports, we iteratively improved our social sustainability taxonomy. This included pulling out *talent pipeline* as distinct from *employee programs* because talent pipeline programs were targeted towards diversifying the future workforce or the community the company operated in. We collapsed the *labor practices for workers in the value chain* because these practices were often indistinguishable from human rights as a category of liability under international law. We also had trouble identifying when 'environmental justice' was a clearly referenced concept, so we refined this category to reflect a narrow definition of environmental justice from existing legal frameworks from a United States Executive Order. Prior to making this revision to our rubric, we found environmental justice could be applied whenever a company mentioned some impact to a community, but the legal definition gave us a clearer way to apply the code. Additionally, an *investor relations* code became necessary to

cover when companies were clearly speaking to shareholders with a financial interest in the company. It also covered when it appeared companies were attempting to take action at the behest of investor pressure.

We also developed two distinct codes to deal with vague and nonspecific language. We began initially by coding with only a *None/Omit* category for words that came up that were largely used as placeholders or for organizational purposes. This included titles, headings, and footers. Early in the coding process, we developed the code *omit-non-meaningful* to describe sufficient but vague language without a denotative or connotative meaning. This can be compared to boilerplate and nonspecific language described by Lin et al. (2024). We often paired this code with a header group or parent code to demonstrate the category within which language was attempting to communicate content even though it failed to provide a meaningful description of the company’s goal or achievements.

Table 1: Final Codebook

Parent code	Second Level Code	Definition
Workforce	<i>talent pipeline</i>	recruiting for future workforce; investing in diversity for future workforce; upskilling workforce for future openings; reentry into workforce programs; retention of marginalized employees
	<i>employee programs</i>	diversity, training and education, non-discrimination, employee compensation, volunteer programs, DEI, talent pipeline
	<i>employee health and safety</i>	occupational health and safety, healthy lifestyle incentives, safety requirements
	<i>labor practices in the workforce</i>	unions, equitable labor rights, compensation programs
	<i>ethics</i>	code of conduct, compliance, oversight
Workers in value chain	<i>human rights</i>	human rights, child labor, forced labor, union, equitable labor rights
	<i>supply chain resilience & livelihood</i>	supply chain management requirements, climate and sustainability education, resiliency measures, help improve productivity and livability
Community – as outside of company	<i>Indigenous relations</i>	interacting with Indigenous communities
	<i>philanthropy and giving</i>	supporting local programming and organization, foundation work, charitable giving

		<p>Environmental justice means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability. All people should be fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.</p> <p>Adapted from Biden, Joseph R. 2023. “Executive Order on Revitalizing Our Nation’s Commitment to Environmental Justice for All.” The White House. April 21, 2023. https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/.</p>
	<i>environmental justice</i>	
	<i>public health</i>	public health, pollution, waste management, water
	<i>community engagement & investment</i>	capacity for tomorrow, jobs for tomorrow, community capacity building; community participation in decisions (i.e.: site locations, etc.)
<i>Consumers/users/shareholders/regulators</i>	<i>product stewardship</i>	customer health and safety, packaging, responsible labeling, product disposal, product-centered impact analysis (e.g. LCA)
	<i>investor relations</i>	explicitly engaging shareholders and investors, disclosure
	<i>consumer relations</i>	customer privacy and protection, PR, feedback, marketing practices
<i>None/Omit</i>		irrelevant due to header/subheader
<i>omit-non-meaningful</i>		omitting because of non-meaningful, should be accompanied by another parent code; to be used when no specific claim or commitment is being made; to be used in laundry lists; functional quotes for organization or technical clarifications

Table 2: Initial Codebook

Parent Code	Second Level Code	Definition
Workforce	<i>employee programs</i>	diversity, training and education, non-discrimination, employee compensation, volunteer programs
	<i>employee health and safety</i>	occupational health and safety, healthy lifestyle incentives, safety requirements
	<i>labor practices in the workforce</i>	unions, equitable labor rights
	<i>ethics</i>	code of conduct, compliance
Workers in value chain	<i>human rights</i>	human rights, child labor, forced labor
	<i>supply chain resilience & livelihood</i>	supply chain management requirements, climate and sustainability education, resiliency measures, help improve productivity and livability
	<i>labor practices in the value chain</i>	unions, equitable labor rights
Community	<i>Indigenous rights</i>	local communities
	<i>philanthropy and giving</i>	supporting local programming and organization, foundation work, charitable giving
	<i>environmental justice</i>	just transition, inclusive growth, equity, urban and rural disproportionate impact
	<i>public health</i>	public health, pollution
	<i>community engagement & investment</i>	city and urbanization
Consumers/users/ shareholders/regulators	<i>product stewardship</i>	customer health and safety, packaging, responsible labeling, product disposal
	<i>consumer relations</i>	customer privacy and protection, PR, feedback, marketing practices
None/Omit		irrelevant

Findings Across Reports

Trends in Social Sustainability

The most mentioned and well-described topic across all reports was *workforce*. Companies have well-developed metrics for describing incentive programs for employees, diversity across their workforce, and talent pipeline initiatives. In contrast, language in the categories of reporting on *community* (as in external to the company), *workers in the value chain*, and *consumers/users/shareholder/regulators* varied across companies. *Workers in the value chain* was mentioned across all companies as each organization has long international value chains and each engages in manufacturing. We might anticipate that analysis of smaller or more regional companies would not exhibit extensive usage of this code.

Report Structure

We analyzed organizational and formatting changes across reports covering the fiscal years 2021 and 2022. Upon reviewing the table of contents and structural headings, within each company we observed minimal variation in the structure and categories of narrative reporting from one year to the next. This suggests that even as aesthetic presentation, such as layout and graphical content, do change (see the IBM subsection), the substantive content of reports may not change significantly on a year-on-year basis. Different subtopics are highlighted or collapsed year by year, but the categories of content that companies are generally reporting about is less variable. This finding contrasts with significant developments in formal audited reporting guidelines over the same time period, such as the new GRI guidelines and the introduction of CSRD reporting guidelines in Europe. Despite these major changes in requirements within the standardized section, it appears that the companies we examined are maintaining consistent narrative reporting structures.

Social Backlash

We noted evidence in companies' reports of response to social backlash to ESG and other social justice initiatives in 2021 and 2022. Notably, for Apple, a company we attempted to examine, we could not find an ESG report for the fiscal year 2022 comparable to the 2021 report (Apple 2021). This omission might signify a shift in the company's stance on ESG reporting as a whole – inconsistencies in naming conventions are common across corporate reporting (Alquaseer et al., 2021). However, it's noteworthy that auxiliary ESG reports for the fiscal year 2022 were still published by the company, such as an Environmental Progress Report and others (Apple 2024; 2023; n.d.). Among the companies we did analyze, we saw mentions of diversity initiatives decrease in the 2022 reports, particularly any major investments into Black employees or social justice. For example, Boeing's 2022 report contains one page detailing a partnership with Clemson to support programming for men of color, and this program is not mentioned at all in the 2023 report. Dow renamed their report between 2021 and 2022, though unlike Apple, Dow retained structure and substantive content consistent with their previous-year ESG report (see the Dow subsection for more).

Boilerplate and Non-Meaningful Language

Within our coding of reports, we saw about 59% of quotes we pulled were coded as *None/Omit* or *omit-non-meaningful*. Even quotes pulled for relevant keywords were found to lack specific claims or consisted of fundamentally placeholder language. This affirms previous research that demonstrates narrative reporting contains a significant amount of boilerplate content (e.g. Lin et al, 2024) and engages greenwashing or publicity for a company (Higgins and Coffey 2016).

Edge Cases in Social Sustainability

We have referred to unexpected contextual usages of social sustainability keywords as ‘edge cases’. One frequent category of edge case occurs over several areas where there is significant overlap between “E” and “S” topics. The category of *public health* was frequently expanded beyond discussions of the community impact of pollution to comprise a significant number of discussions of any adverse biophysical impact, including water and waste management issues, not merely in a traditional public health context. Consistent with the widening scope of liability of corporate material practice, we noted significant expansion of topics discussed within the *product stewardship* code, including not only product and consumer-focused accountability through responsible labeling, packaging, and consumer health and safety, but also expanded impacts and mechanisms for the identification of those impacts (e.g. life cycle analysis (LCA)), and incorporation of third party assessments into internal governance practices (e.g. SBTI, science based targets, scope 3), indicating engagement within companies with mechanisms of anticipatory governance on a broader scale.

Conceptual Variations

We noted multiple areas where single word interpretations of content lead to conceptual ambiguity across categories. The concept of *community* is broadly used and changes meaning across contexts. Sometimes the usage was used to indicate a community within the employee base, as with an employee affinity or resource group such as ‘Asian community.’ In a more conventional corporate social responsibility valence, *community* is understood to denote activities beyond the boundaries of corporate operations—*community engagement* and *community impact*. We noted an expanding conception of community beyond traditional ideas of impact and involvement of communities contiguous to physical plant or value chain business relationships. New uses of *community* arose in describing scientific, policy, and (other) organizational uses of *community* as partnering organizations, and were particularly prominent in Boeing’s language around sustainability collaborations.

We also noted apparently similar or identical word usages referring to quite different locations for social sustainability activities. For example: *ethics* was commonly used to denote oversight of workforce related risks, particularly in a distant value chain. Linked by liability within the same valence of risk-based accountability, *ethics* was in other cases used to connote disclosures of sources of liability to shareholders. *Ethics* was also used by IBM to refer to responsible computing.

Co-Occurrence of Topics

We also saw **co-occurrence of codes** when we coded passages with one or more codes (Fig. 1). As expected due to our methodology, we saw a large number of codes that were coded *omit-non-meaningful* in conjunction with parent codes. We saw the largest frequency of *omit non-meaningful* co-occurrence for *community*, largely because companies talked about investing in external communities in vague terms. We also saw a large co-occurrence between *philanthropy and giving* and *community engagement and investment* because often (but not always) *philanthropic giving* coincided with tangible monetary investments into particular *community engagement* initiatives. Accordingly, these two codes also often had overlapping meanings. The next highest set of co-occurrences we saw was *employee programs* and *community engagement and investment*, denoting employee volunteering programs within local communities.

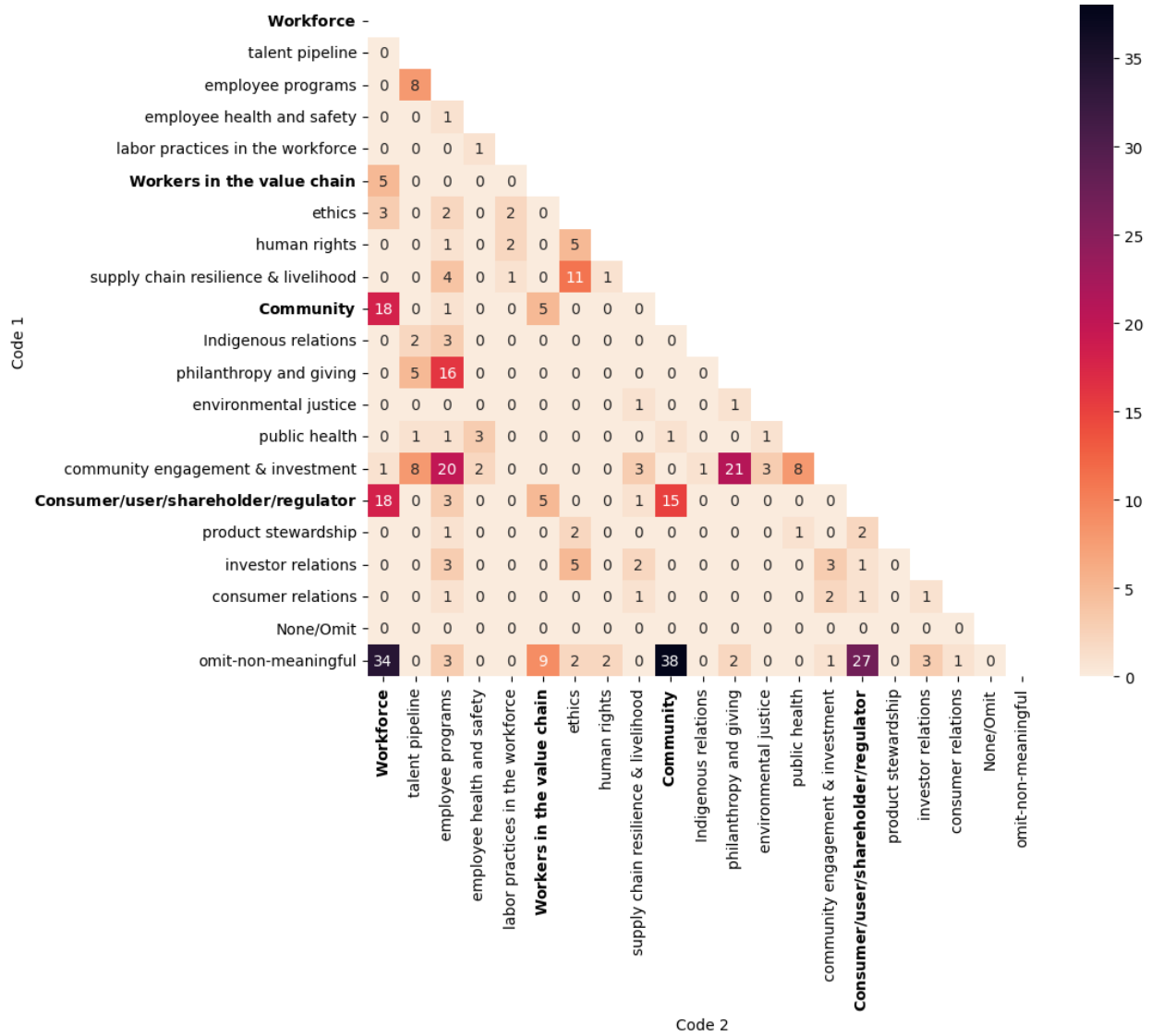


Figure 1: Heatmap depicting all co-occurrence of codes

Boeing

As seen in the bubble graphs (Figs. 2 and 3) showing the distribution of codes from 2022 to 2023 (which covered the 2021 and 2022 fiscal years respectively), nearly half the statements flagged for coding were deemed omissible from our analysis. Many keywords appeared in indexing and headers or were otherwise not incorporated into the text or properly elaborated upon. The percentage of *omit-non-meaningful* codes decreased 2.5% from 2021 to 2022, and this change was accompanied by a significant increase in percent mentions of employee programs. This suggests that Boeing started to take more actions in 2022, reflected in assertions containing more specifics on their activities and strategies. Another notable finding from both reports was, despite very public developments in the Boeing 737 Max accidents (The Associated Press 2024), these were not explicitly mentioned anywhere in the narrative section.

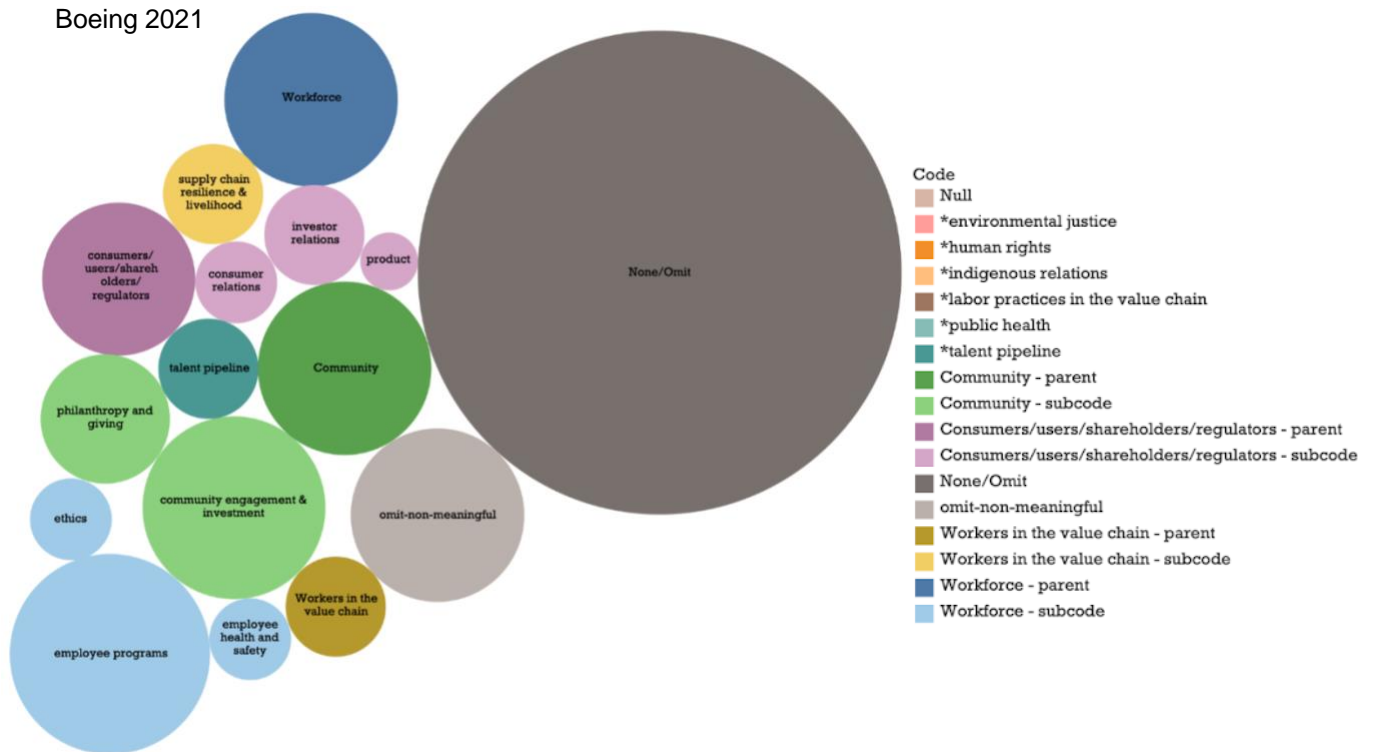


Figure 2: Bubble graph depicting distribution of codes in the 2021 Boeing report. Color indicates parent code. Size indicates relative sum of count. Bubbles are labeled by subcodes. * denotes codes with no counts.

Boeing 2022

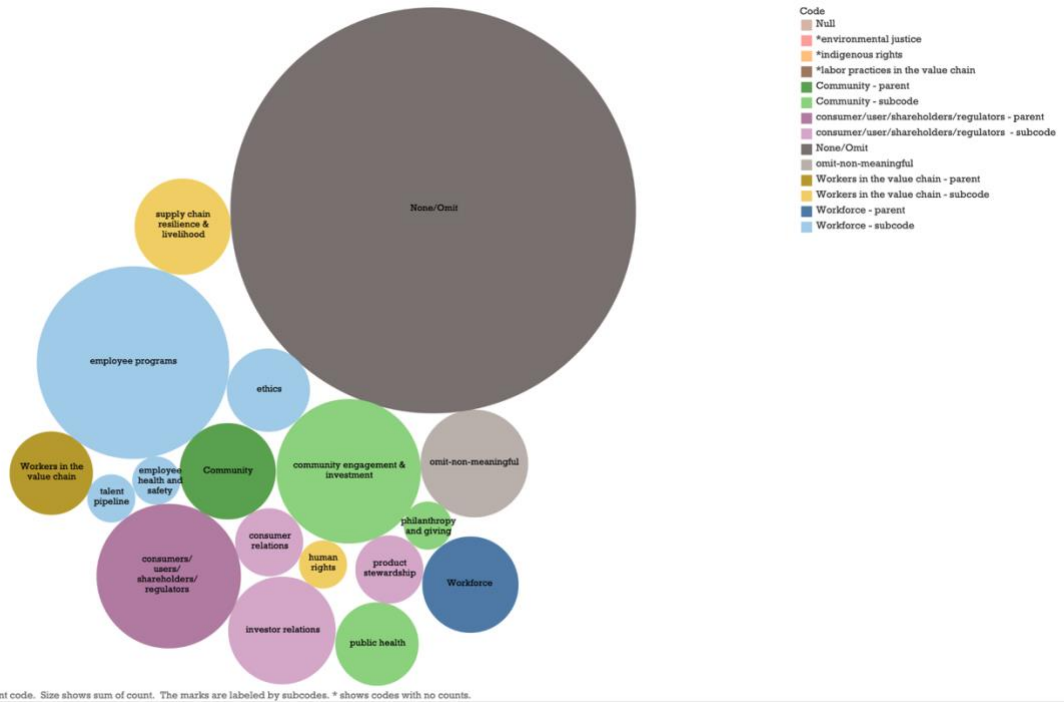


Figure 3: Bubble graph depicting distribution of codes in the 2022 Boeing report. Color indicates parent code. Size indicates relative sum of count. Bubbles are labeled by subcodes. * denotes codes with no counts.

IBM

The content within the IBM reports did not vary much from 2021 to 2022 (Figs. 4 and 5). The aesthetic presentation did change significantly. The 2021 report was presented in a vertical layout with photos of people and assembly employees. In 2022, the report shifted to a horizontal orientation and contained only a single photo—of the CEO. Graphical content in the 2022 report consisted largely of faceless illustrations of people and diagrams. Another shift of note in the IBM report was the decrease in the numbers of mentions of the keyword “social”. In 2021, there were 18 occurrences while there were only 6 in 2022. Most of the uses of “social” were contained within the headers of the section, and therefore did not meet criteria for inclusion in our analysis. Meaningful uses of “social” contained information about social initiatives and programs IBM has implemented, nonprofits they have partnered with, COVID-19 and social trends. The largest proportion of mentions of “social” was within the phrase “social change/impact.” This category was extremely relevant in this report due to widespread social changes that took place starting in 2020 relating to justice and COVID-19-related social consequences. In 2022, the use of “social” ranges between giving, social responsibility, and impact, with less emphasis on social change and impact compared to the 2021 report. This decrease could be attributed to decreased emphasis on social tensions in comparison to the prior year. We additionally saw a decrease in the codes of employee programs between the two reports.

IBM 2021

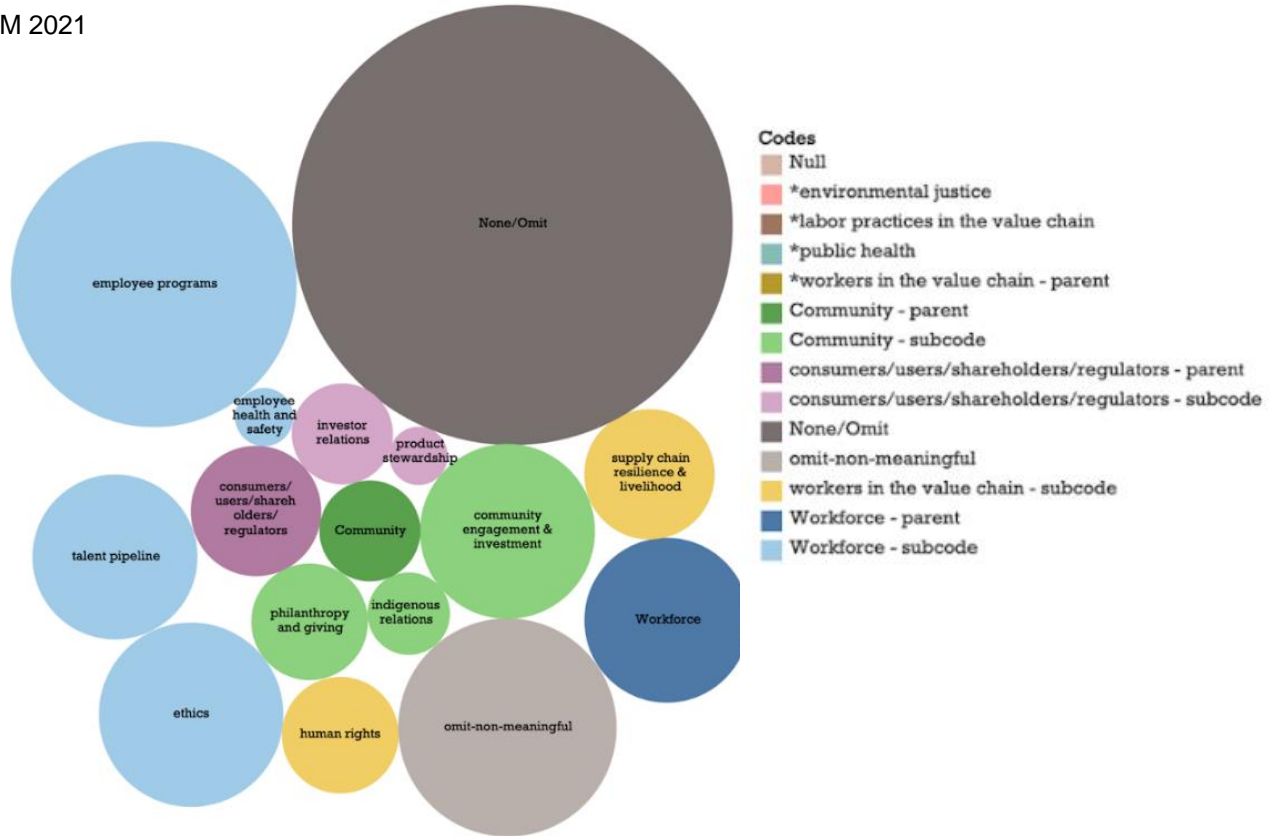


Figure 4: Bubble graph depicting distribution of codes in the 2021 IBM report. Color indicates parent code. Size indicates relative sum of count. Bubbles are labeled by subcodes. * denotes codes with no counts.

IBM 2022

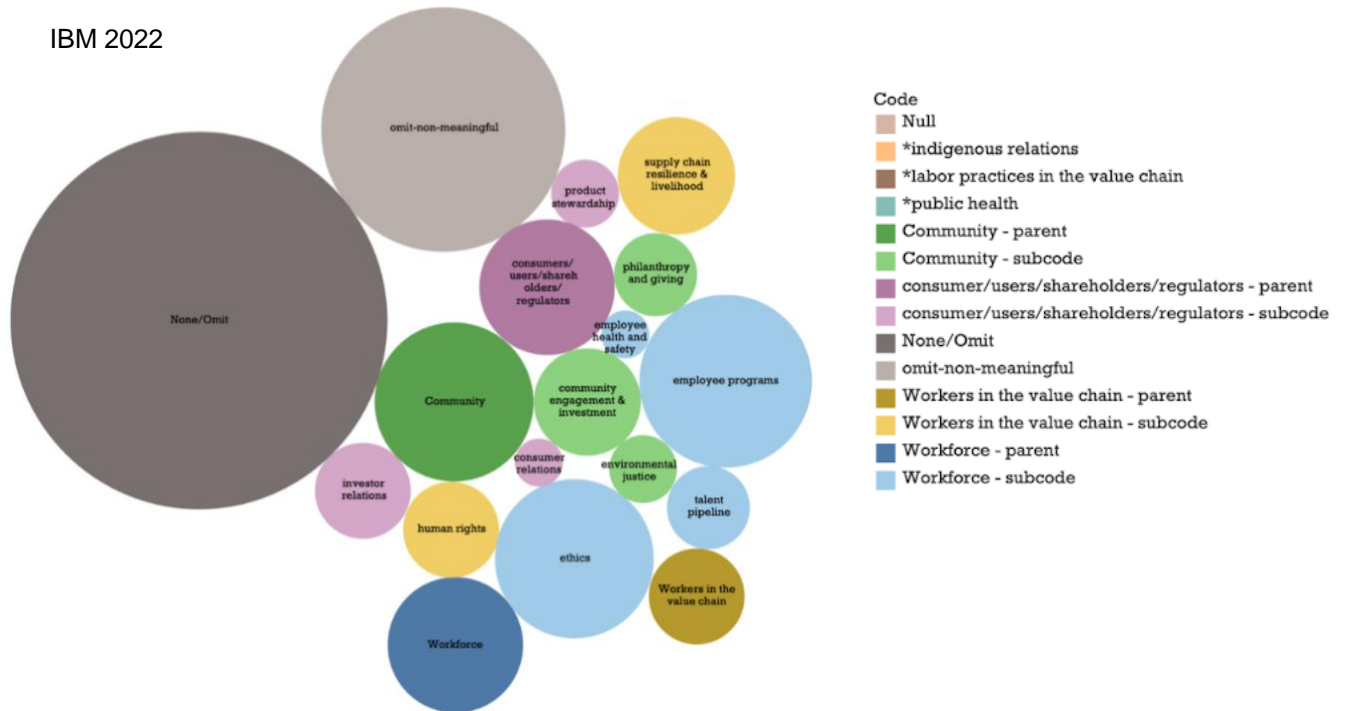


Figure 5: Bubble graph depicting distribution of codes in the 2022 IBM report. Color indicates parent code. Size indicates relative sum of count. Bubbles are labeled by subcodes. * denotes codes with no counts.

The Dow reports (Figs. 6 and 7) contrasted with Boeing and IBM, showing a significantly lower proportion of codes marked *None/Omit* or *omit-non-meaningful*. This can most likely be attributed to Dow not utilizing indexing terms in the reports. Another interesting finding is that Dow changed the name of the report between 2021 and 2022. The 2021 report was called “Intersections 2021 Environmental, Social & Governance Report” whereas in 2022 the report was called “Intersection 2022 Progress Report Advancing our Ambition”. Use of the full term “environmental, social, and governance” (ESG) grew to 9 mentions in 2022, compared to 4 times in 2021.

Dow 2021

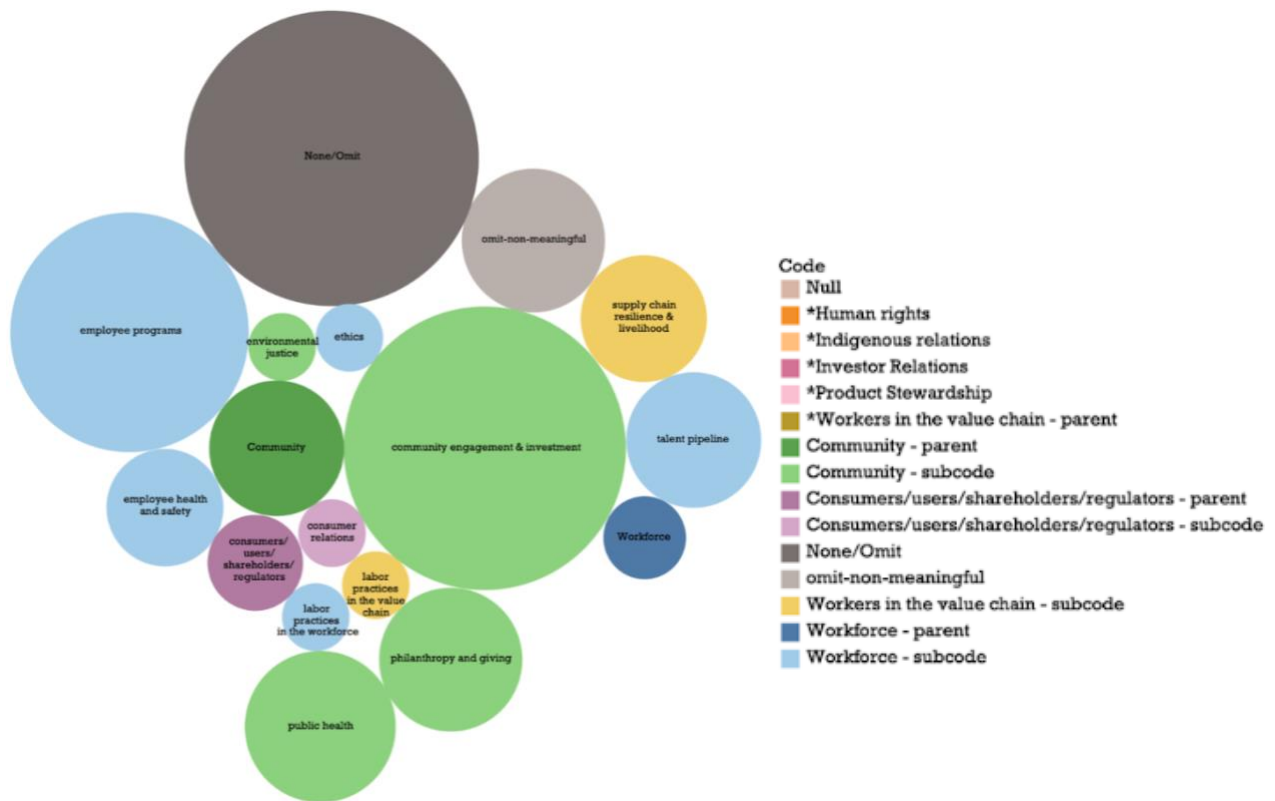


Figure 6: Bubble graph depicting distribution of codes in the 2021 Dow report. Color indicates parent code. Size indicates relative sum of count. Bubbles are labeled by subcodes. * denotes codes with no counts.

Dow 2022

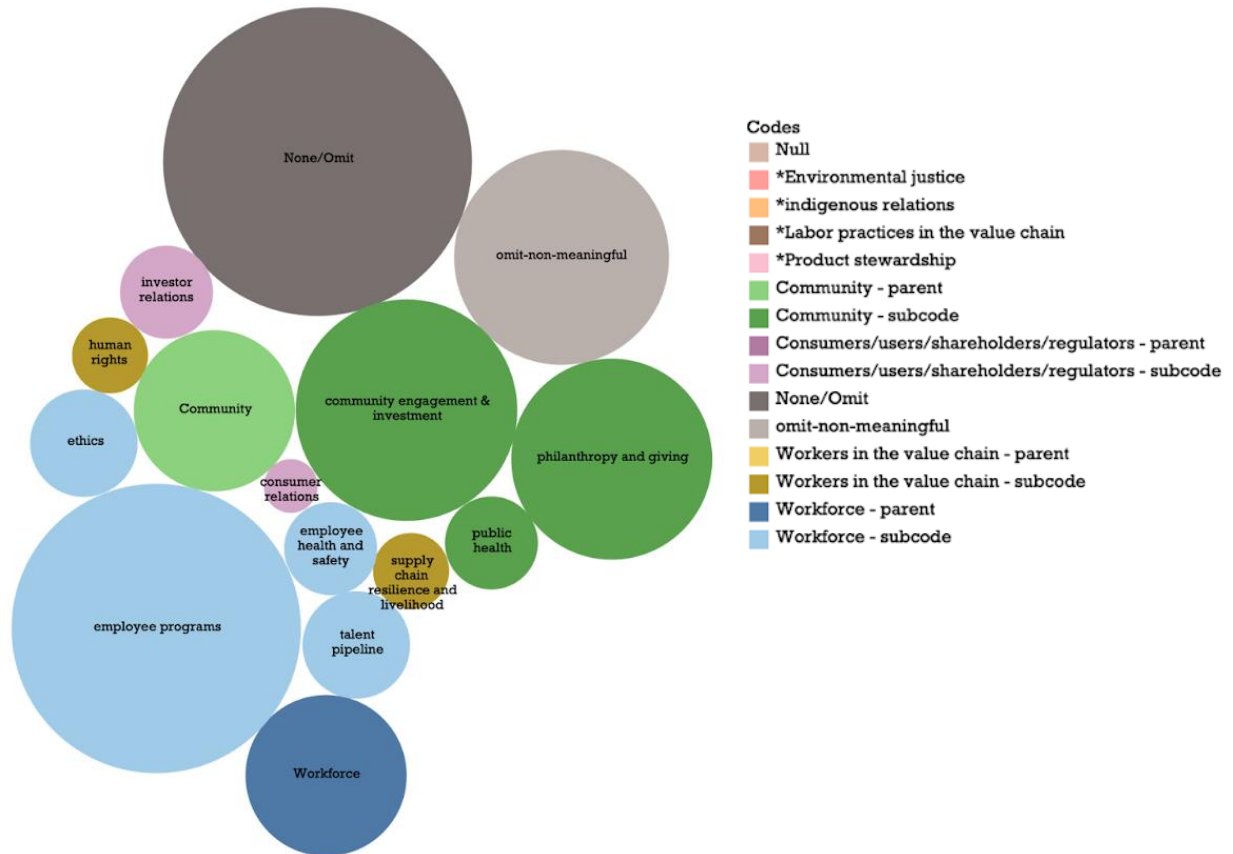


Figure 7: Bubble graph depicting distribution of codes in the 2022 Dow report. Color indicates parent code. Size indicates relative sum of count. Bubbles are labeled by subcodes. * denotes codes with no counts.

Conclusion

In this white paper, we have conducted an analysis of corporate social sustainability as communicated within the narrative section of voluntary sustainability reports. We use a well-established method from social science—inductive coding with intercoder validity checks—that has not been well-leveraged in present corporate reporting research. Our method engages with sources of linguistic complexity reflective of well-described multidimensionality and indeterminacy in the social sustainability concept. Our resulting taxonomy of social sustainability is more detailed than has been documented in the prior literature and includes subtopics organized around dimensions of *Workforce*, *Workers in value chain*, *Community*, and *Consumers/users/shareholders/regulators* along with categories for non-meaningful and formatting language. Through analysis of six ESG reports from three major American companies (Dow, Boeing, and IBM), we detail the corporate presentation of social sustainability. We encourage future work expanding our taxonomy and expanding this methodology to a more diverse set of companies.

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