STRATEGIC MANAGEMENT, Vol. XX (202x), No. x, pp. 0xx-0xx

DOI: 10.5937/StraMan2600013S

Received: March 20, 2026
Revised: April 08, 2026
May 19, 2026
Accepted: June 01, 2026
Published online: June 12, 2026

Mapping the Web Search Patterns of Sustainability Reporting Queries: Implications for Corporate Governance

Yuliia Serpeninova

Bratislava University of Economics and Business, Bratislava, Slovakia
Sumy State University, Sumy, Ukraine
https://orcid.org/0000-0002-4448-3484

ONLINE FIRST

Abstract

Background: Sustainability reporting has increasingly become a regulated and strategically significant component of corporate governance, while digital platforms play a growing role in shaping how such information is searched for, accessed, and interpreted within a strategic management context.

Purpose: The aim of this study is to examine the semantic and behavioural structure of online search queries related to sustainability reporting and to identify dominant patterns of digital informational demand.

Study design/methodology/approach: The study applies qualitative thematic content analysis and digital search analytics using data from AnswerSocrates and AnswerThePublic. A set of interrogative queries was coded into thematic categories, and cross-platform comparison was conducted across search engines, AI environments, and social media platforms.

Findings/conclusions: The findings show that Google search queries related to sustainability reporting are predominantly framed as a regulatory and compliance-driven issue, accompanied by strong implementation and professional orientations. AI-mediated prompts (ChatGPT, Gemini) connected with sustainability reporting demonstrate a more solution-driven and market-oriented character. Social media queries (YouTube, TikTok, Instagram) further indicate the dual role of these platforms as spaces for showcasing corporate sustainability practices and exploring career opportunities.

Limitations/future research: The study is limited by country-specific focus, potential subjectivity in coding, and the static nature of search data. Future research may expand geographical scope and explore longitudinal developments.

Keywords

Sustainability reporting; Digital informational demand; Search query analysis; AI-mediated search behaviour; Social media analytics

Introduction

Over the past decade, sustainability reporting has moved from being largely voluntary to becoming a structured and increasingly regulated part of corporate governance. In the European Union, the introduction of the Corporate Sustainability Reporting Directive (CSRD) and the European Sustainability Reporting Standards (ESRS) has significantly strengthened the regulatory framework surrounding non-financial disclosure. As a result, sustainability reporting is no longer treated only as a communication tool linked to corporate social responsibility; it is now closely connected to compliance, risk management, and strategic planning (Nguyen et al., 2024). This shift has changed the way organisations and professionals approach sustainability-related information.

At the same time, the digital environment plays a growing role in shaping how such topics are understood and explored (Chahdi et al., 2025). Search engines, artificial intelligence platforms, and social media increasingly mediate access to professional and regulatory knowledge. The way users formulate online search queries can therefore provide insight into how sustainability reporting is perceived in practice – whether as a legal

requirement, a technical challenge, a professional opportunity, or a strategic management issue. Digital search behaviour offers a valuable, though still underused, perspective on public informational demand.

While the academic literature on sustainability reporting is expanding rapidly, most studies focus on regulatory developments, reporting quality, ESG metrics, or corporate performance. Far less attention has been given to how sustainability reporting appears in the digital information space and how users actively search for related knowledge. Analysing online queries makes it possible to better understand which aspects of sustainability reporting generate the strongest interest, as well as how the topic is framed outside formal policy and academic discussions.

This study examines the structure and thematic orientation of digital search queries related to sustainability reporting. By exploring patterns across search engines, AI-based environments, and selected social media platforms, the paper seeks to provide insight into how sustainability reporting is positioned within the digital landscape. In doing so, it offers an additional empirical perspective on the ongoing institutionalisation and practical diffusion of sustainability reporting. By identifying how users search for sustainability reporting information across digital environments, the study also highlights implications for corporate governance, particularly in relation to regulatory communication, reporting transparency, assurance, and stakeholder-oriented digital disclosure.

1. Literature review

In recent years, sustainability reporting has become the subject of extensive meta-analytical and bibliometric scrutiny, reflecting the growing consolidation of this research field. A number of systematic and mapping studies have examined its intellectual structure, thematic evolution, and dominant explanatory frameworks. Bibliometric analyses of CSR, ESG and sustainability-related research reveal thematic evolution and knowledge clustering, providing methodological precedents for mapping digital search patterns as an indicator of scientific attention (Lama et al., 2025; Lastri et al., 2025; Hroma, 2024; Pasko et al., 2021).

Scholars (Arkoh et al., 2024; Benvenuto et al., 2023; Velte, 2023; Farisyi et al., 2022) provide empirical-quantitative research employing automated text analysis in sustainability reporting, illustrating the increasing methodological sophistication of publications in this field. Other bibliometric and systematic reviews have further consolidated the field by mapping non-financial reporting, integrated reporting, and sustainability reporting in relation to financial performance, management control, climate change accounting, and corporate reputation (Grueso-Gala & Zornoza, 2022; Crous et al., 2021; Soriya & Rastogi, 2022; Traxler et al., 2020; Gulluscio et al., 2020; Gomez-Trujillo et al., 2020).

At the same time, the literature increasingly connects sustainability reporting with corporate governance, showing that disclosure practices are not only reporting instruments but also mechanisms of accountability, strategic oversight, and stakeholder-oriented governance (Naciti et al., 2022). These contributions demonstrate that sustainability reporting represents a mature and theoretically structured area of inquiry, extensively examined through bibliometric mapping and determinant-oriented systematic reviews.

Empirical studies conducted across diverse institutional and geographic contexts further reinforce this consolidation by examining environmental disclosure practices, ESG readiness, stakeholder perceptions, governance determinants, and the cultural embeddedness of sustainability reporting frameworks (Franklin, 2024; Strouhal et al., 2025; Jati et al., 2025). Hummel (2024) and Operato (2025) examine recent developments in EU sustainability reporting regulations, with particular attention to the Corporate Sustainability Reporting Directive and related disclosure frameworks. Their studies show that the new regulatory environment strengthens transparency, accountability and standardisation of sustainability disclosures, while also creating organisational challenges and strategic opportunities for companies adapting to these requirements.

Building on the institutional consolidation of sustainability reporting research, a growing body of literature has examined its digitalisation and web-based disclosure practices. Valentinetti and Rea (2025) identify technological capabilities, regulatory pressures, and stakeholder expectations as key drivers of the digital transformation of sustainability accounting and reporting systems, emphasising the integration of reporting into digital infrastructures. Earlier studies by Raghupathi and Raghupathi (2019) show that web-based disclosure enhances transparency but varies in quality and accessibility, while Dickinson et al. (2008) demonstrate how corporate websites function as strategic communication tools shaping stakeholder perception, particularly in

ONLINE FIRST

environmentally sensitive industries. Prior studies on web-based sustainability and non-financial disclosure show that corporate websites function as important channels for stakeholder communication and sustainability-related accountability across different organizational contexts, including listed companies, non-profit organisations and family firms (Raghupathi & Raghupathi, 2019; Ponce et al., 2022; Nair et al., 2022; Palma et al., 2021).

Digitalisation processes and e-marketing strategies amplify the online visibility and accessibility of sustainability information, reinforcing the digital channels through which stakeholders search for reporting data (Kuzior & Lobanova, 2020). Studies also show that social media platforms expand sustainability reporting beyond formal corporate websites by supporting legitimation, stakeholder engagement, dialogic communication and value-related effects of digital disclosure (Lodhia et al., 2020; Al-Sartawi & Hamdan, 2019; Di Tullio et al., 2021). This stream of research reframes sustainability reporting as a digitally mediated information practice, embedded within online communication ecosystems.

Extending this digital focus, a distinct body of research examines the role of social media in sustainability reporting. Pennesi and Giuliani (2025) synthesise the literature on social media and sustainability reporting, demonstrating that platforms such as Twitter, LinkedIn, and YouTube increasingly function as complementary disclosure channels that reshape stakeholder engagement and narrative framing. Earlier empirical studies reinforce this shift: Manetti and Bellucci (2016) show that social media enhances dialogic stakeholder engagement in sustainability reporting, while Bonsón and Bednárová (2015) provide evidence that YouTube is used strategically to disseminate sustainability-related information among Eurozone-listed companies. Said et al. (2023) link big data analytics capabilities with sustainability reporting on social media, suggesting that digital competencies strengthen competitive positioning. Similarly, Maghsoudi et al. (2025) combine traditional sustainability reports with social media data to provide a more comprehensive assessment of reporting practices at the industry level.

Recent research has begun to explicitly examine sustainability-related discourse through the lens of digital search behaviour, particularly by employing Google Trends as a proxy for public attention dynamics. Jung (2025) analyses how institutional signals – such as regulatory developments and corporate sustainability initiatives – affect consumer search behaviour in the United States, demonstrating that increases in sustainability-related communication are followed by measurable shifts in Google search intensity. The study positions search volume as an indicator of discourse diffusion, thereby linking institutional developments with behavioural responses in the digital sphere. Similarly, Gao and Perdana (2026) employ Google Trends-based sentiment indicators to examine the ESG flow-return paradox, showing that positive "green" sentiment stimulates capital inflows despite weaker financial returns. Text-mining approaches applied to sustainability messages demonstrate the feasibility of analysing digital textual data to capture institutional and cross-country differences in sustainability narratives (Yoon, 2026). Text-mining and natural language processing methods have increasingly been applied to corporate sustainability reports to analyse disclosure content, identify dominant sustainability issues and compare reporting practices across sectors and countries (Kang & Kim, 2022; Zhou et al., 2021; Kumar & Das, 2021). Related studies also extend this analytical perspective to online sustainability reporting, firm performance, shareholder resolutions and the linguistic/contextual features of corporate sustainability communication (Ning et al., 2021; Raghupathi et al., 2020; Saeli, 2019).

While these studies mark important advances by incorporating Google Trends into sustainability research, their analytical focus remains primarily macro-level and volume-based. Search intensity is treated as an aggregate indicator of attention or sentiment, without examining the semantic structure, thematic composition, or interrogative logic of user queries. In other words, existing research captures *how much* sustainability is searched, but not *how* it is conceptually framed or *what type of informational intent* underlies these searches.

Against this backdrop, the present study addresses a clear research gap. There is limited empirical evidence on the structural and thematic patterns of user-generated search queries related specifically to sustainability reporting. The objective of this study is to examine the semantic and behavioural structure of online search queries related to sustainability reporting by combining qualitative thematic coding with intent-oriented digital analytics. By moving beyond search volume toward structural content analysis of user queries, the study contributes a micro-level, user-centred

ONLINE FIRST

perspective to the literature on sustainability reporting.

2. Methodology

For the purposes of this study, two digital analytical platforms – AnswerThePublic and AnswerSocrates – were employed to examine the structure and content of online search queries related to sustainability reporting. These platforms enable the systematisation of user-generated questions into semantic and behavioural categories, thereby facilitating the identification of dominant patterns of public interest in sustainability reporting.

Both platforms enable the analysis of search queries within a selected thematic domain; however, their methodological configuration requires the specification of a particular country and language in order to generate contextually relevant and geographically filtered results. The keyword "sustainability reporting" was entered into both platforms as the primary research topic. The following parameters were selected: "country" – Germany; "language" – English.

Germany was chosen due to its leading role within the European Union in implementing sustainability regulations. As one of the largest EU economies and an early adopter of sustainability disclosure practices, Germany represents a mature regulatory environment, making it an appropriate case for analysing regulation-driven informational demand.

The English language was selected to ensure analytical consistency and comparability of queries. English functions as the dominant language of international sustainability standards (e.g., ESRS, GRI, CSRD) and enables the study to capture globally oriented informational demand rather than nationally confined linguistic patterns.

The methodological workflow presented in Figure 1 illustrates the sequential logic of the study.

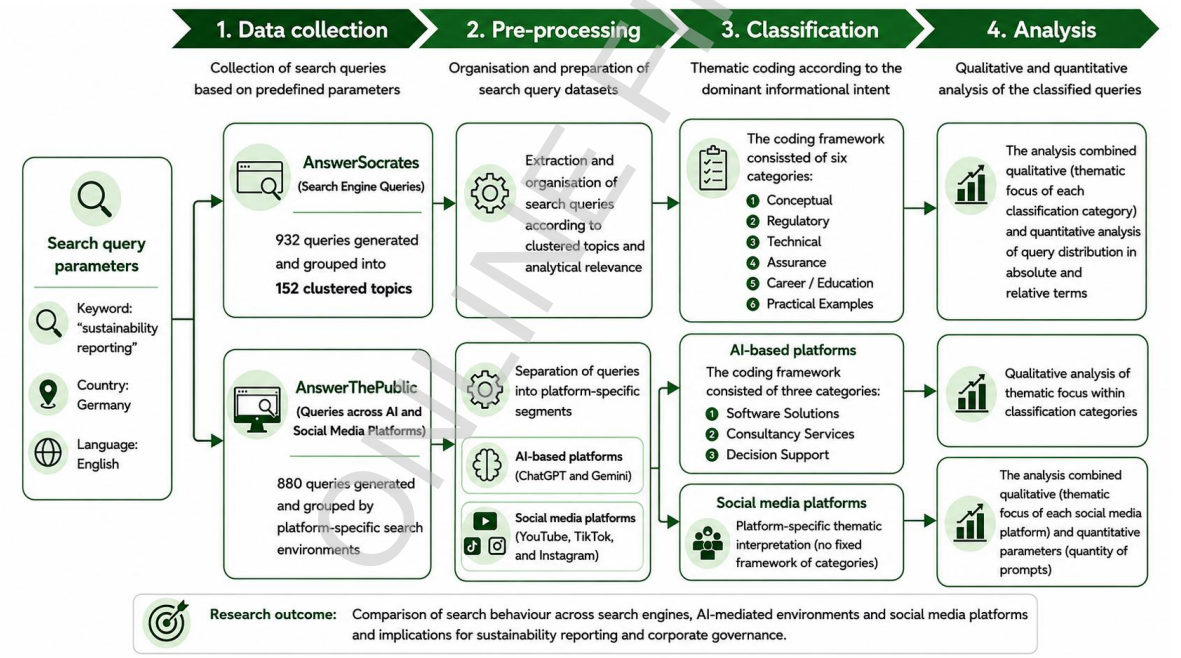

Figure 1 Methodology diagram illustrating the research pipeline
Source: the author

The thematic distribution of search queries reveals a structured pattern in the digital representation of sustainability reporting.

2.1. Query analysis via AnswerSocrates platform

AnswerSocrates generates search query datasets by clustering publicly available search data into structured semantic categories. For the selected parameters, the platform generated 932 queries related to sustainability reporting.

The platform structured the queries into several groups, including questions, comparisons, prepositions, past-oriented queries, letter-based queries, and general keyword queries. At the data collection stage, the platform organised the extracted queries into clustered topics. These clusters reflected different semantic associations

ONLINE FIRST

and search formulations related to sustainability reporting. This structure provided the initial basis for identifying the dominant areas of informational demand.

At the classification stage, manual coding was performed at the level of clustered topics rather than individual queries. The 932 queries generated by AnswerSocrates had already been organised by the platform into 152 semantically related clusters, which were subsequently reviewed and assigned to one of six thematic categories. The thematic categorisation was developed inductively through iterative examination of semantic patterns within the dataset in order to capture the dominant informational intent reflected in users' search behaviour. In cases where semantic overlap between categories was identified, the query or clustered topic was assigned to the category representing its primary informational orientation following iterative contextual review, while the number of queries within each cluster was retained for quantitative aggregation.

The coding framework consisted of six categories:

1. Conceptual
2. Regulatory
3. Technical
4. Assurance
5. Career / Education
6. Practical Examples

At the analysis stage, the classified queries were examined using both qualitative and quantitative parameters. The qualitative analysis focused on the thematic focus and semantic orientation of each classification category. The quantitative analysis examined the distribution of queries across categories in absolute and relative terms. This approach made it possible to identify which dimensions of sustainability reporting generated the strongest search interest and how the topic was framed within conventional search engine behaviour.

2.2. Query analysis via AnswerThePublic platform

To enhance the robustness of the research design and enable cross-platform comparison, AnswerThePublic was used as a supplementary digital search analytics tool. While AnswerSocrates provided a clustered dataset of conventional search engine queries, AnswerThePublic enabled the analysis of search behaviour across a broader range of digital environments, including AI-based platforms and social media platforms.

At the data collection stage, AnswerThePublic generated 880 search queries related to sustainability reporting. The platform organised the results through a structured intent-based model, including search intent categories, AI models, search engines, social media, shopping segments, and keyword clusters based on semantic association.

AnswerThePublic dataset was separated into platform-specific segments in order to capture differences in the way sustainability reporting is searched for across different digital environments. Particular attention was given to two analytical segments: AI-based platforms, represented by ChatGPT and Gemini, and social media platforms, represented by YouTube, TikTok, and Instagram.

At the classification stage, the AI-based platform queries were reviewed separately from the social media-related prompts. Since the structure and semantic orientation of AI-mediated prompts differed from conventional search engine queries, the six-category framework developed for AnswerSocrates was not directly applied to this segment. Instead, the AI-related prompts were classified into three categories reflecting their dominant informational and market-oriented intent:

1. Software Solutions
2. Consultancy Services
3. Decision Support

For the social media segment, a fixed thematic coding framework was not applied. This decision was based on the platform-specific nature of the data, where prompts and hashtags reflected different modes of user engagement across YouTube, TikTok, and Instagram. Therefore, the social media analysis focused on identifying the dominant thematic focus and behavioural orientation of each platform rather than assigning all prompts to predefined categories.

At the analysis stage, the AnswerThePublic data were examined primarily through qualitative thematic interpretation, supported by quantitative comparison where relevant. For AI-based platforms, the analysis focused on the thematic focus within the three classification categories.

For social media platforms, the analysis combined qualitative interpretation of platform-specific thematic patterns with quantitative comparison of prompt volumes across YouTube, TikTok, and Instagram. This enabled the study to

ONLINE FIRST

compare conventional search engine behaviour with AI-mediated and social media-based informational demand related to sustainability reporting.

3. Findings

3.1. Analysis of sustainability reporting Google search queries

To explore the structure of digital informational demand related to sustainability reporting, the extracted search queries were systematically organised according to the predefined thematic coding framework. Queries were assigned to one primary category based on their dominant informational intent, allowing for the identification of prevailing patterns in how sustainability reporting is framed in the online environment. The classification enables a structured comparison of conceptual, regulatory, technical, professional, assurance-related, and practice-oriented dimensions of search behaviour. The distribution of coded queries and representative examples for each category are presented in Table 1.

Table 1 Thematic classification of sustainability reporting Google search queries

Thematic category of search behaviour	Total keywords	Keywords share, %	Queries representative examples
1 Conceptual Queries aimed at understanding the meaning, definition, scope, or fundamental concepts of sustainability reporting.	193	21%	• what is sustainability reporting • sustainability reporting definition • difference between ESG reporting and sustainability reporting • what is sustainability in accounting
2 Regulatory **2a general** Queries related to legal requirements, mandatory disclosure obligations, regulatory frameworks, and entities subject to sustainability reporting.	218	23%	• is sustainability reporting mandatory in the EU • sustainability reporting requirements under CSRD • what companies are required to publish sustainability reports • sustainability reporting regulation EU • CSRD sustainability reporting directive • European sustainability reporting standards ESRS • GRI sustainability reporting standards • IFRS sustainability reporting standards
2 Regulatory **2b country-specific** Queries focused on sustainability reporting requirements, regulations in specific countries	113	12%	• sustainability reporting requirements UK • China sustainability reporting standards • the Australian sustainability reporting standards ASRS • Japan sustainability reporting standards
3 Technical Queries focused on the preparation, structure, methodology, indicators, and practical execution of sustainability reporting.	133	14%	• how to prepare sustainability report • how to measure sustainability reporting indicators • sustainability reporting methodology • sustainability reporting framework implementation • sustainability reporting structure
4 Assurance Queries concerning external verification, assurance processes, auditing standards, and the credibility of sustainability reports, assurance processes associated with audit firms	35	4%	• who audits sustainability reports • sustainability report assurance • sustainability reporting assurance standards • sustainability reporting audit • sustainability reporting verification • assurance of sustainability reporting under CSRD • kpmg sustainability reporting guide • kpmg survey of sustainability reporting • sustainability reporting tracker pwc • pwc global sustainability reporting survey
5 Career / Education Queries related to professional pathways, certifications, training programs, courses, and career opportunities in sustainability reporting.	102	11%	• sustainability reporting certification • sustainability reporting course • sustainability reporting training • sustainability reporting qualification • sustainability reporting jobs • sustainability reporting career • sustainability reporting education program • sustainability reporting skills required
6 Practical Examples Queries seeking concrete examples of sustainability reports, corporate cases, company-specific disclosures, or sample sustainability reporting documents.	138	15%	• sustainability reporting example • sustainability report example pdf • sustainability report of tesla • sustainability report of apple • sustainability reporting real example • sustainability reporting template example
Total:	**932**	**100%**	

Source: compiled by the author based on AnswerSocrates data

The thematic distribution of search queries reveals a structured pattern in the digital representation of sustainability reporting.

The Conceptual category reflects foundational informational demand. Queries requesting definitions, distinctions between ESG and

ONLINE FIRST

sustainability reporting, and explanations of standards indicate that the concept still requires clarification in the digital space. Quantitatively, this category accounts for 193 keywords, representing 21% of the total dataset, which makes it the second-largest thematic group after the combined Regulatory category.

The qualitative analysis clearly indicates that the prevailing informational orientation is strongly regulatory and compliance-driven, with regulatory queries representing the largest combined share of the dataset (331 keywords; 35%). The majority of queries, either directly or indirectly, reference legal requirements, reporting obligations, or specific regulatory frameworks such as CSRD and ESRS. The subdivision of this category into general regulatory queries (218 keywords; 23%) and country-specific regulatory queries (113 keywords; 12%) further shows that informational demand is directed not only toward framework-level regulation, but also toward the interpretation of sustainability reporting requirements in specific national contexts. This reflects the institutionalisation phase of sustainability reporting within the European regulatory environment.

The Technical category also constitutes a considerable portion of the dataset. Queries such as "how to prepare," "how to implement," and "reporting methodology" indicate that users are not only concerned with whether sustainability reporting is required, but also with how it is operationalised in practice. The presence of implementation-focused queries signals a transition from awareness to operational engagement. This category includes 133 keywords, accounting for 14% of the total dataset, which confirms the substantial role of implementation-oriented informational demand.

The Assurance category reveals a more mature layer of informational demand. Searches concerning audit, verification, and external assurance demonstrate that stakeholders are concerned not only with reporting itself but also with its credibility and quality control mechanisms. Although this category represents the smallest share of the dataset – 4% – its presence is analytically significant because it indicates attention to the credibility, reliability, and external validation of sustainability reporting.

The presence of the Career / Education category indicates that sustainability reporting is increasingly viewed as a distinct professional domain. Queries related to certification, training, and required skills suggest labour market formation and competency development. This category accounts for 102 keywords, representing 11% of the total dataset, which confirms that sustainability reporting is not only perceived as a compliance issue but also as an emerging area of professional specialisation.

The Practical Examples category demonstrates applied informational demand. With 138 keywords, representing 15% of the total dataset, this category forms the third-largest thematic group and highlights the importance of practical, example-based information seeking. Searches for company-specific reports, templates, and case studies reflect benchmarking behaviour and imitation dynamics. The digital environment thus becomes a space for observational learning and diffusion of reporting formats.

The distribution of queries indicates that sustainability reporting is currently situated in an advanced institutionalisation phase characterised by regulatory consolidation and practical implementation.

3.2. Analysis of AI-generated (ChatGPT and Gemini) prompts related to sustainability reporting

As an additional analytical layer, the study incorporated data from the AnswerThePublic platform. Similar to the previously applied tool, this resource provides a detailed analysis of search queries within Google Search, ensuring comparability of results across conventional search engine environments. Additionally, it enables segmentation of queries within dominant AI-based platforms such as ChatGPT and Gemini.

The thematic categories applied to synthesise the results derived from Google Search queries proved insufficient for capturing the specific structural and semantic characteristics of prompts generated within AI platforms. Consequently, the AI-related queries were reclassified into a revised set of thematic categories, as presented in Table 2.

ONLINE FIRST

Table 2 Distribution of AI-generated prompts related to sustainability reporting across thematic categories

Thematic category of search behaviour	Queries representative examples
1 Software Solutions Queries focused on identifying technological tools, automated platforms, and digital systems designed to support sustainability reporting processes.	• Top software tools for sustainability reporting used by large companies • Comparison of automated sustainability reporting solutions for corporate use • What types of software assist with carbon footprint calculation and tracking?
2 Consultancy Services Queries seeking external advisory support, specialised consulting firms, or professional service providers assisting organisations with sustainability reporting implementation and compliance	• Consulting firms that specialise in sustainability reporting for German businesses • Top consultancy services offering sustainability reporting support in Germany • Which companies provide sustainability reporting training and certification online
3 Decision Support Queries aimed at strategic selection, evaluation, and decision-making regarding reporting tools, frameworks, or implementation.	• How to choose the best sustainability reporting platform for SMEs • How to choose a sustainability reporting platform for a midsize business • Which international frameworks guide corporate environmental disclosures?

Source: compiled by the author based on AnswerThePublic data

The analysis of AI-generated prompts demonstrates a clear shift in the structure of informational demand compared to traditional search engine queries. While conventional search behaviour was predominantly regulatory and definition-oriented, AI-mediated queries display a solution-driven and market-oriented character (table 3).

Table 3 Comparison of traditional search AI-mediated search behaviour

Traditional search	AI prompt environment
Regulatory focus	Tool selection focus
Definition-oriented	Solution-oriented
Compliance-driven	Market-driven

Source: the author

3.3. Analysis of prompts related to sustainability reporting across social media platforms (YouTube, TikTok, and Instagram)

The AnswerThePublic platform facilitates the exploration of sustainability reporting-related queries across selected social media platforms, including YouTube, TikTok, and Instagram. This broadens the analytical perspective beyond traditional search behaviour by capturing emerging patterns and socially embedded informational demand related to sustainability reporting. Table 4 presents a comparative overview of platform-specific variations in sustainability reporting-related informational demand across selected social media platforms.

Table 4. Examples of dominant prompts related to sustainability reporting across social media platforms

YouTube	TikTok	Instagram
136 prompts	1,5K prompts	47 hashtags
• corporate sustainability reporting directive • sustainability reporting • corporate sustainability reporting framework • sustainability reporting navigator • sustainability reporting standards	• sustainability reporting analyst • sustainability reporting black woman • sustainability reporting career • corporate sustainability reporting directive • sustainability reporting software	• Sustainabilityreporting • Sustainabilityreportingtraining • Sustainabilityreportingconsultant • Sustainabilityreportingaward • Sustainabilityreportingworkshop

Source: compiled by the author based on AnswerThePublic data

The distribution presented in Table 4 indicates substantial cross-platform variation in the volume and character of sustainability reporting-related prompts. TikTok demonstrates a markedly higher quantity of prompts compared to YouTube and Instagram, suggesting a particularly dynamic and possibly career-oriented or trend-driven engagement with sustainability reporting topics within short-form video environments. The prominence of queries such as "sustainability reporting analyst" and "sustainability reporting career" points to a strong professional and aspirational dimension of informational demand on this platform.

In contrast, YouTube displays a more conceptually and regulatory oriented profile, with prompts referring to directives, standards, and reporting frameworks. This pattern suggests that users may perceive YouTube as a platform suitable for more detailed explanatory or educational content. Instagram, by comparison, shows a considerably lower volume of prompts and a strong reliance on hashtag-based formulations, indicating a more branding- or visibility-oriented engagement rather than in-depth informational search behaviour. Overall, the comparative analysis highlights how platform architecture and content formats shape distinct patterns of sustainability

ONLINE FIRST

reporting-related information seeking across social media environments.

3.4. Corporate governance implications of digital informational demand for sustainability reporting

The findings of this study have several implications for corporate governance, as they show that sustainability reporting is not only a matter of formal disclosure compliance but also a digitally mediated governance practice shaped by stakeholder information needs. This interpretation is consistent with prior research linking sustainability reporting to corporate governance, accountability, stakeholder communication, and transparency (Naciti et al., 2022; Arkoh et al., 2024; Benvenuto et al., 2023). The analysis of search behaviour demonstrates which aspects of sustainability reporting generate the strongest informational demand and, therefore, which areas may require greater attention from companies, boards, audit committees, and other governance actors.

The dominance of regulatory queries indicates that sustainability reporting is strongly perceived through the lens of compliance and institutional requirements. Regulatory queries represent the largest combined share of the dataset, accounting for 35% of all Google search queries analysed. This finding is in line with recent studies emphasising the growing institutionalisation of sustainability reporting through formal disclosure obligations, especially in the context of the European regulatory environment and CSRD-related reporting requirements (Hummel & Jobst, 2024; Operato et al., 2025). From a corporate governance perspective, this implies that governance systems need to ensure not only formal compliance with frameworks such as CSRD, ESRS, GRI, and IFRS-related sustainability standards, but also clear communication of regulatory obligations to stakeholders. The visibility of regulatory search demand suggests that companies should provide accessible, transparent, and well-structured explanations of their sustainability reporting obligations, reporting scope, and applied standards.

The presence of technical and implementation-oriented queries highlights the operational dimension of sustainability reporting. Users are not only asking whether sustainability reporting is required, but also how it should be prepared, structured, implemented, and measured. This has implications for internal governance processes, including the development of reporting procedures, data collection systems, internal controls, and cross-functional coordination between accounting, sustainability, risk management, and compliance functions. Sustainability reporting is closely connected with management control systems, internal information processes, and organisational decision-making mechanisms (Traxler et al., 2020; Crous et al., 2021). Therefore, it requires governance mechanisms that go beyond external disclosure and involve the integration of sustainability-related information into internal management and decision-making processes.

Queries related to audit, assurance, and verification indicate that stakeholders are concerned with the reliability of sustainability information and the mechanisms through which such information is validated. This implies an important role for audit committees, internal control systems, and external assurance providers in strengthening the credibility of sustainability disclosures (Jati et al., 2025; Naciti et al., 2022). From a corporate governance perspective, assurance-related search demand reflects the need to treat sustainability information with a level of oversight comparable to financial reporting information.

The analysis of AI-mediated and social media-based search patterns expands the governance relevance of sustainability reporting beyond traditional corporate reports. The presence of sustainability reporting queries in AI-based platforms and social media environments indicates that stakeholders increasingly access, interpret, and compare sustainability information through digital channels. Lodhia et al. (2020) and Manetti and Bellucci (2016) demonstrate that social media and digital platforms increasingly function as instruments of stakeholder engagement and sustainability legitimation, while Valentinetti and Rea (2025) emphasise the growing role of web-based and digitalised sustainability disclosure practices. This has implications for stakeholder communication, reputational governance, and the consistency of sustainability-related messages across formal reports, corporate websites, AI-mediated information environments, and social media platforms. Companies therefore need to consider not only the content of sustainability reports, but also how this content is digitally visible, searchable, understandable, and reusable by different stakeholder groups.

This pattern also suggests the existence of a growing professional competency gap, as the expanding informational demand for sustainability

ONLINE FIRST

reporting indicates that organisations increasingly require qualified specialists capable of preparing, interpreting, assuring, and communicating sustainability-related disclosures. Nguyen et al. (2024) emphasise that organisational readiness for ESG reporting is strongly connected with the availability of internal expertise and reporting competencies, while Strouhal et al. (2025) demonstrate the growing importance of stakeholder expectations regarding ESG-related knowledge and professional capabilities. Consequently, companies may need to invest more actively in professional training, competency development, and sustainability-related education in order to strengthen internal expertise and governance capacity.

From the perspective of implications for corporate governance, the study suggests that sustainability reporting should be understood as part of a broader governance ecosystem in which compliance, implementation, assurance, professional expertise, and digital communication are interconnected.

Conclusion

As organizations globally face increasing scrutiny regarding their environmental and social impacts, the practice of sustainability reporting has gained prominence. This paper explores the public's interest and prevailing questions on sustainability reporting through a comprehensive analysis of internet searches collected via AnswerthePublic and AnswerSocrates platforms.

This approach not only helps in understanding the general awareness and concerns related to sustainability practices but also highlights the areas where companies might need to focus their communication strategies. By examining these inquiries, we can estimate the evolving trends and the public's priorities regarding sustainable practices.

The findings demonstrate that sustainability reporting is predominantly framed online as a regulatory and compliance-driven obligation. A substantial proportion of queries directly reference CSRD, ESRS, IFRS standards, and mandatory disclosure requirements, indicating a strong institutional imprint on digital informational demand. At the same time, the presence of technical and implementation-focused queries suggests that the discourse has progressed from conceptual clarification toward operationalisation. The prominence of assurance-related searches reflects growing concern with credibility and verification mechanisms, while career- and education-oriented queries signal the consolidation of sustainability reporting as a professional field.

Importantly, cross-platform comparison reveals differentiated behavioural patterns. Traditional search engines are primarily definition- and compliance-oriented, whereas AI-mediated environments exhibit a solution-driven and market-focused orientation, emphasising software tools, consultancy services, and decision support.

Social media queries suggest that these platforms function not only as spaces for informational exploration but also as arenas for showcasing corporate sustainability initiatives and professional positioning. Prompts frequently refer to reporting tools, indicating their role in demonstrating implementation practices. Career and analyst-oriented queries highlight social media as a channel for professional visibility, labour market exploration, and skill signalling within the sustainability reporting domain.

The results indicate that sustainability reporting has entered an advanced institutionalisation phase in the digital information space. Online search behaviour reflects the transition from voluntary sustainability discourse toward structured governance and compliance-based reporting frameworks. By introducing a micro-level, user-centred perspective grounded in semantic and behavioural query analysis, this study contributes to the literature on sustainability communication and digital discourse diffusion. Unlike traditional sustainability reporting studies focused primarily on regulatory frameworks, disclosure quality, or corporate reporting outputs, query-based analysis provides insight into stakeholder-driven informational demand and the ways sustainability reporting is interpreted, searched for, and operationalised within the digital environment. This perspective makes it possible to identify informational gaps, practical implementation concerns, and emerging areas of professional and governance-related attention that may remain less visible within conventional reporting-oriented approaches. It demonstrates that digital search patterns provide a meaningful empirical lens for assessing how regulatory developments and institutional signals translate into practical informational demand. This array of inquiries provides a roadmap for those in the field of sustainability reporting to understand what information is most sought after and where gaps may exist.

ONLINE FIRST

From a corporate governance perspective, the findings have several important implications. They suggest that sustainability reporting should be understood not only as a compliance obligation but also as a digitally mediated governance practice. The dominance of regulatory and implementation-oriented queries implies the need for clearer governance communication, stronger internal reporting procedures, and more transparent assurance mechanisms. At the same time, AI-mediated and social media-based search patterns show that stakeholders increasingly engage with sustainability reporting through digital platforms, which has further implications for online disclosure, professional credibility, and stakeholder communication.

Study Limitations

Despite the analytical value of search query analysis, several methodological limitations must be acknowledged.

The selection of Germany as the country parameter limits generalisability. Although Germany represents a mature regulatory environment within the EU, informational demand structures may differ in emerging economies or non-EU jurisdictions. In addition, the query language was limited to English. Therefore, the findings primarily reflect English-language search behaviour related to sustainability reporting and may not fully capture search patterns of German-speaking users or nationally specific linguistic variations.

The classification process involved manual categorization based on the dominant informational intent. Thematic interpretation inherently involves researcher judgement, which may introduce a degree of subjectivity. Future research could strengthen the robustness of the analysis through the involvement of multiple coders or intercoder reliability procedures.

Search query datasets represent a snapshot in time. Informational demand may evolve dynamically in response to regulatory changes, corporate scandals, or policy announcements. Longitudinal analysis would provide deeper insights into temporal shifts in sustainability reporting awareness.

The dataset reflects search query formulations, not actual behavioural outcomes or decision-making processes. Search intent does not necessarily translate into organisational practice, regulatory compliance, or professional engagement. Therefore, the results should be interpreted as indicators of informational demand rather than verified behavioural evidence.

Declarations

Availability of data and materials

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Funding

Not applicable

Acknowledgements

Not applicable

Use of Artificial Intelligence (AI) Tools

The following AI tools were used during the preparation of this manuscript: ChatGPT (OpenAI). AI was used solely for language editing and literature search assistance. All intellectual content, arguments, findings, and conclusions are the sole work of the author.

References

Al-Sartawi, A. M., & Hamdan, A. (2019). Social media reporting and firm value. In *Digital transformation for a sustainable society in the 21st century* (Vol. 11701). https://doi.org/10.1007/978-3-030-29374-1_29

Arkoh, P., Costantini, A., & Scarpa, F. (2024). Determinants of sustainability reporting: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, *31*(3), 1578-1597. https://doi.org/10.1002/csr.2645

Benvenuto, M., Aufiero, C., & Viola, C. (2023). A systematic literature review on the determinants of sustainability reporting systems. *Heliyon*, *9*(4). https://doi.org/10.1016/j.heliyon.2023.e14893

Bonsón, E., & Bednárová, M. (2015). YouTube sustainability reporting: Empirical evidence from Eurozone-listed companies. *Journal of information systems*, *29*(3), 35-50. https://doi.org/10.2308/isys-50993

Chahdi, F., Riache, S., & Louail, B. (2025). The Impact of Digitalisation On Resilience to Socio-Economic Challenges: A Case For E-Marketing to Ensure Sustainable Development. *SocioEconomic Challenges, 9*(1), 252–263. https://doi.org/10.61093/sec.9(1).252-263.2025

Crous, C., Battisti, E., & Leonidou, E. (2021). Non-financial reporting and company financial performance: A systematic literature review and integrated framework. *EuroMed Journal of Business*. https://doi.org/10.1108/EMJB-12-2020-0134

Di Tullio, P., La Torre, M., & Rea, M. A. (2021). Social media for engaging and educating: From universities' sustainability reporting to dialogic communication. *Administrative Sciences, 11*(4). https://doi.org/10.3390/admsci11040151

ONLINE FIRST

Dickinson, S. J., Gill, D. L., Purushothaman, M., & Scharl, A. (2008). A web analysis of sustainability reporting: an oil and gas perspective. *Journal of Website Promotion*, *3*(3-4), 161-182. https://doi.org/10.1080/15533610802077255

Farisyi, S., Musadieq, M. A., Utami, H. N., & Damayanti, C. R. (2022). A systematic literature review: Determinants of sustainability reporting in developing countries. *Sustainability*, *14*(16), 10222. https://doi.org/10.3390/su141610222

Franklin, B. (2024). Analysis of Environmental Reporting Practices in Hospitality Industry in Ghana. *Financial Markets, Institutions and Risks*, 8(2), 165–185. https://doi.org/10.61093/fmir.8(2).165-185.2024

Gao, P., & Perdana, A. (2026). The ESG Flow–Return Paradox: Green sentiment boosts inflows but lags in returns. *Journal of Environmental Management*, *398*, 128385. https://doi.org/10.1016/j.jenvman.2025.128385

Gomez-Trujillo, A. M., Velez-Ocampo, J., & Gonzalez-Perez, M. A. (2020). A literature review on the causality between sustainability and corporate reputation: What goes first? *Management of Environmental Quality, 31*(2). https://doi.org/10.1108/MEQ-09-2019-0207

Grueso-Gala, M., & Zornoza, C. C. (2022). A bibliometric analysis of the literature on non-financial information reporting: Review of the research and network visualization. *Cuadernos de Gestión, 22*(1). https://doi.org/10.5295/cdg.211545mg

Gulluscio, C., Puntillo, P., Luciani, V., & Huisingh, D. (2020). Climate change accounting and reporting: A systematic literature review. *Sustainability, 12*(13). https://doi.org/10.3390/su12135455

Hroma, I. (2024). Interconnection of organic agriculture, health, and sustainability: Bibliometric analysis. *Health Economics and Management Review*, 5(4), 47-74. https://doi.org/10.61093/hem.2024.4-04.

Hummel, K., & Jobst, D. (2024). An overview of corporate sustainability reporting legislation in the European Union. *Accounting in Europe, 21*(3), 320–355. https://doi.org/10.1080/17449480.2024.2312145

Jati, K. W., Rizkyana, F. W., Jannah, R., Budiantoro, R. A., Safitri, A. F., & Widiarto, A. (2025). The effect of environmental performance and corporate governance structure on the quality of environmental disclosure. *Environmental Economics, 16*(4), 67–82. https://doi.org/10.21511/ee.16(4).2025.05

Jung, S. U. (2025). Tracing the Diffusion of Sustainability Discourse: Institutional Signals and Consumer Search Behavior in the United States. *Sustainability*, *17*(17), 7697. https://doi.org/10.3390/su17177697

Kang, H., & Kim, J. (2022). Analyzing and visualizing text information in corporate sustainability reports using natural language processing methods. *Applied Sciences, 12*(11). https://doi.org/10.3390/app12115614

Kumar, A., & Das, N. (2021). A text-mining approach to the evaluation of sustainability reporting practices: Evidence from a cross-country study. *Problemy Ekorozwoju, 16*(1). https://doi.org/10.35784/pe.2021.1.06

Kuzior, A., & Lobanova, A. (2020). Tools of Information and Communication Technologies in Ecological Marketing under Conditions of Sustainable Development in Industrial Regions (Through Examples of Poland and Ukraine). *Journal of Risk and Financial Management*, *13*(10), 238. https://doi.org/10.3390/jrfm13100238

Lama, P. B., Budhathoki, P. B. & Bhatta, N. (2025). Corporate Social Responsibility in Banking: A Comprehensive Bibliometric Analysis. *Financial Markets, Institutions and Risks, 9*(3), 64–84. https://doi.org/10.61093/fmir.9(3).64-84.2025

Lastri, S., Syamsidar, Q., Chiari, W., Nasution, E. S., Fuadi, R., & Linda. (2025). Green accounting research: A comparative bibliometric analysis of global and Indonesian studies. *Environmental Economics, 16*(4), 30–51. https://doi.org/10.21511/ee.16(4).2025.03

Lodhia, S., Kaur, A., & Stone, G. (2020). The use of social media as a legitimation tool for sustainability reporting: A study of the top 50 Australian Stock Exchange (ASX) listed companies. *Meditari Accountancy Research, 28*(4). https://doi.org/10.1108/MEDAR-09-2019-0566

Maghsoudi, M., Shokouhyar, S., Sanaee, N., & Shokoohyar, S. (2025). Enhancing sustainability reporting practices in the notebook manufacturing industry: a multifaceted analysis integrating traditional reports and social media data. *Annals of Operations Research*, *345*(1), 317-349. https://doi.org/10.1007/s10479-024-06343-4

Manetti, G., & Bellucci, M. (2016). The use of social media for engaging stakeholders in sustainability reporting. *Accounting, auditing & accountability journal*, *29*(6), 985-1011. https://doi.org/10.1108/AAAJ-08-2014-1797

Naciti, V., Cesaroni, F., & Pulejo, L. (2022). Corporate governance and sustainability: A review of the existing literature. *Journal of Management & Governance, 26*(1). https://doi.org/10.1007/s10997-020-09554-6

Nair, R., Arshad, R., Muda, R., & Joharry, S. A. (2022). Web-disclosure practices for transparency and the sustainability of non-profit organisations. *International Review on Public and Nonprofit Marketing*. https://doi.org/10.1007/s12208-021-00330-2

Nguyen, D. T. P., Nguyen, L. T. H., Nguyen, A. T. M., & Phan, L. L. T. (2024). Factors affecting the readiness for ESG reporting in Vietnamese enterprises. *Problems and Perspectives in Management, 22*(3), 263–275. https://doi.org/10.21511/ppm.22(3).2024.21

Ning, X., Yim, D., & Khuntia, J. (2021). Online sustainability reporting and firm performance: Lessons learned from text mining. *Sustainability, 13*(3). https://doi.org/10.3390/su13031069

Operato, L., Gallo, A., Marino, E. A. E., & Mattioli, D. (2025). Navigating CSRD reporting: Turning compliance into sustainable development with science-based metrics. *Environmental Development, 54*, 101138. https://doi.org/10.1016/j.envdev.2025.101138

Palma, M., Lourenço, I. C., & Branco, M. C. (2021). Web-based sustainability reporting by family companies: The role of the richest European families. *Accounting Forum*. https://doi.org/10.1080/01559982.2021.1979331

ONLINE FIRST

Pasko, O., Chen, F., Oriekhova, A., Brychko, A., & Shalyhina, I. (2021). Mapping the literature on sustainability reporting: A Bibliometric analysis grounded in Scopus and Web of science core collection. *European Journal of Sustainable Development*, *10*(1), 303-303. https://doi.org/10.14207/ejsd.2021.v10n1p303

Pennesi, A., & Giuliani, M. (2025). Social Media and Sustainability Reporting: A Literature Review. *Sustainable Development*, *33*(5), 7314-7335. https://doi.org/10.1002/sd.3524

Ponce, H. G., Serrat, N. A., & Gonzalez, J. C. (2022). Web communication of non-financial information in the companies of four European stock indices. *Revista Española de Documentación Científica, 45*(3). https://doi.org/10.3989/redc.2022.3.1883

Raghupathi, V., & Raghupathi, W. (2019). Corporate sustainability reporting and disclosure on the web: An exploratory study. *Information Resources Management Journal (IRMJ)*, *32*(1), 1-27. https://doi.org/10.4018/IRMJ.2019010101

Raghupathi, V., Ren, J., & Raghupathi, W. (2020). Identifying corporate sustainability issues by analyzing shareholder resolutions: A machine-learning text analytics approach. *Sustainability, 12*(11). https://doi.org/10.3390/su12114753

Saeli, H. (2019). An English-for-specific-purposes motivated analysis of corporate sustainability reports: An analysis of text and context. *Corporate Communications, 24*(3). https://doi.org/10.1108/CCIJ-10-2018-0111

Said, F., Jalil, A. A., & Zainal, D. (2023). Big data analytics capabilities, sustainability reporting on social media, and competitive advantage: an exploratory study. *Asian Journal of Business and Accounting*, 129-160. https://doi.org/10.22452/ajba.vol16no1.5

Soriya, S., & Rastogi, P. (2022). A systematic literature review on integrated reporting from 2011 to 2020. *Journal of Financial Reporting and Accounting, 20*(3/4). https://doi.org/10.1108/JFRA-09-2020-0266

Strouhal, J., Horák, J., Resik, A., Gurvitš-Suits, N., & Kadak, T. (2025). Stakeholders' perceptions on ESG reporting: On the case of Czechia and Estonia. *Journal of International Studies*, 18(2), 75-93. https://doi.org/10.14254/2071- 8330.2025/18-2/4

Traxler, A. A., Schrack, D., & Greiling, D. (2020). Sustainability reporting and management control: A systematic exploratory literature review. *Journal of Cleaner Production, 276*. https://doi.org/10.1016/j.jclepro.2020.122725

Valentinetti, D., & Rea, M. A. (2025). Factors influencing the digitalization of sustainability accounting, reporting and disclosure: a systematic literature review. *Meditari Accountancy Research*, *33*(2), 633-680. https://doi.org/10.1108/MEDAR-02-2024-2385

Velte, P. (2023). Automated text analyses of sustainability & integrated reporting. A literature review of empirical-quantitative research. *Journal of Global Responsibility*, *14*(4), 530-566. https://doi.org/10.1108/JGR-09-2022-0090

Yoon, T. (2026). Institutional differences in CEO sustainability messages: Text mining of Korean and global firms' reports. *Problems and Perspectives in Management, 24*(1), 129–147. https://doi.org/10.21511/ppm.24(1).2026.10

Zhou, Y. S., Wang, X. Q., & Yuen, K. F. (2021). Sustainability disclosure for container shipping: A text-mining approach. *Transport Policy, 110*. https://doi.org/10.1016/j.tranpol.2021.06.020

✉ Correspondence

Yuliia Serpeninova

Bratislava University of Economics and Business, Dolnozemská cesta 1, 852 35, Bratislava, Slovakia

E-mail: yuliia.serpeninova@euba.sk

ONLINE FIRST