



Economic Theory

Tatyana ODINTSOVA

**ESG INFORMATION PRACTICES
AS A DRIVER OF VALUE CREATION**

Abstract

Achieving sustainability goals is mainly driven by information practices that support decision-making. The study dwells on recommendations in the field of design and methodology for information support of sustainability. It was motivated by a diversity and low convergence of existing information practices; the objective is to define ways of their transformation for ESG value creation and sustainability governance. The article aims to give a holistic view of ESG information practices and suggest theoretical insight and practical ways to transform them, primarily accounting, and ESG-reporting, to create a transparent information environment for sustainability. The study is designed as a qualitative analysis with summarising, categorizing, and interpreting open access sources data, such as unidirectional studies, non-financial reporting and ESG-rankings databases, program documents, frameworks and standards for responsible reporting, professional audit analytics, and others. Thematical, logical, and comparative analysis was mostly used for data processing. The study's theoretical framework is based on social science theories, particularly the Interpretative paradigm. There were assessed quality of the current information field and proposed ways to upgrade an up-to-date system of informational practices by the requirements of a transparent ESG environment for the value creation. New approaches to ESG accounting were suggested, and an integrated balance model of total capitals engaged in

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ESG value creation was developed. Analysis of a corporate organizational reporting variety allows us to define two key models for better understanding and further convergence. Recommendations for the transformation of accounting, non-financial reporting, streamlining, and methodological development of related practices can be used in programmatic, advisory, and regulatory documents that structure the information field of sustainable development.

Key Words:

ESG, sustainability; informational practices; reporting; accounting.

JEL: O10; M40; M48; C81; O44.

9 figures, 68 references.

Literature Review and Problem Statement

As a global trend, the ESG (Ecological, Social, Governance) approach is now considered a part of long-term value creation policy and a driver of sustainable growth. Bloomberg estimates that «The ESG market could surpass \$40 trillion by 2030, based on our scenario analysis, anchoring the \$140 trillion of projected assets under management (AUM) globally despite 70% slower growth and polarised sentiment» (Bloomberg, 2024). For Ernst & Young, Capital Groups, and Bankrate analytics, 89% of investors consider ESG factors in their investment decisions, and for large companies, this percentage reaches 99%, while only 13% of investors view it as a temporary tendency (Capital Group, 2023; Bankrate, 2023; Ernst & Young, 2022).

A transparent information environment is essential to provide sustainable governance, responsible practices, and operations of industries, companies, and investors. This dramatically expanded the scope of actors involved in the process of informational exchange and ESG-data stakeholders – businesses and NGOs, investors and lenders, governments, regulators, international bodies, society, and

individuals. They require relevant and reliable information to meet their needs in a sustainable agenda to build an ESG-value creation policy. This affects a full range of information and linked practices including corporate reporting, accounting, audit, and assurance, ESG scoring and analysis (including rating and investor rating) systems.

The significance of this information could be verified by some recent indicators. An analytical review by the International Federation of Accountants revealed that ESG disclosures appear in the reporting of «95% of the 1,350 companies studied in various countries and 64% of companies now obtain assurance/verification over some of the information they provided in 2021» (IFAC, 2023). In many jurisdictions, responsible reporting has started to be compulsory, e.g., in the EU due in 2025 (regarding the year ends on December 31, 2024), sustainability reporting will be mandatory for almost 50,000 companies as per the EU Corporate Sustainability Reporting Directive (CSRD) (Official Journal of the EU, 2023). ESG information aggregators, rating, and portfolio analysis services represent a highly growing market of information services. For the statistics of Mordor Intelligence, the ESG Rating Services Market size is estimated at USD 10.37 billion in 2024 and is expected to reach USD 15.42 billion by 2029, growing at 8.25% during the forecast period (Mordor Intelligence, 2024).

Despite the fast growth of ESG information practices the data quality is assessed by users as not high or even non-satisfactory. For Deloitte «53% of global respondents cited «poor quality or availability of ESG data and analytics» and another 33% cited «poor quality of sustainability investment reporting» as the two biggest barriers to adopting sustainable investing (Deloitte, 2023). According to PwC: «only 29% of investors say current company reporting adequately describes ESG's impact on business performance» (PwC, 2021). In the 2022 targeted consultation on the functioning of the ESG rating market in the EU report, 84% of respondents consider the information market is not functioning well today, 83% noted the lack of transparency on the methodologies used, and 91% – significant biases in the methodology used by providers, 81% evaluated the level of correlation of ESG ratings is not adequate and 80% point out to the market tends to potential conflicts of interests (An official website of the European Union, 2022).

Given the importance and high demand for ESG information, it has started to be crucial to appraise its quality, consistency, and transparency for decision-making and to improve the efficiency of practices ensuring such information. There is still no holistic approach to the full cycle of information practices. They embrace different stages, methodologies of data collecting and proceeding, makers, and outcome design. ESG reporting is the product of accounting and measurements behind in matters of environmental, social, and corporate impacts, it employs a wide range of sources and follows frameworks and standards presented in an extensive variety. Accounting habitually is not completely associated with sustainability information due to the specifics of methods and objects therefore its part could be questioned or exaggerated. Third-party ranking and ESG

ratings are based on different sources of information, including public disclosures, media, third-party databases, government, NGO, company data, and questionnaires. There are hundreds of ratings applied in the exploration of sustainable investment and corporate governance, evaluation of risks, and opportunities for different branches and business models. These ratings are provided by such giants of ESG analytics as MSCI (Morgan Stanley Capital International), Dow Jones Sustainability Indices, Bloomberg, ISS (International Shareholders Services), and many others published in platforms (such as Barra, RiskMetrics, FactSet, POINT, StyleResearch, Aladdin, ARISTA), and highly used by institutional investors, assets managers, companies, and other stakeholders for decision-making. The main accent in the information provided traditionally has focused on two key groups of stakeholders – investors and company managers.

The use of ESG information primarily focuses on the financial aspects of decision-making. It emphasizes traditional goals such as investment payback, profitability, value creation, and risk reduction for investors and managers. Thus, even though sustainability is a priority, ESG information mostly ensures not responsible practices, but primarily reputational benefits and attractiveness for the capital providers. Still, when we want to succeed in non-financial goals, we must employ financial incentives to make this system work. One can note a good example of this – the Emission Trading System for Carbon Markets, which uses financial incentives in the green agenda.

Even a not-in-depth academic literature review shows the shortage of comprehensive exploration covering the entire cycle of external and internal information collection, processing, and control to make existing info-sourcing practices non-fragmentary and collinear. Research on most common information practices is mostly intra-disciplinary or covers the "bundles" of evidently linked academic disciplines. The trends of excessive theorizing in the area under consideration look alarming as well. The article is aimed at providing a complex outlook on the information and control practices in the sustainability agenda and exploring specific ways to transform them, primarily accounting, ESG reporting, analysis, and assurance to create a transparent information environment for sustainability.

Recent bibliometric studies analyze the newest trends around sustainability information overall and in some specific subject areas. Pasko et al. (Pasko et al., 2021) reasoned that «sustainability matters (e.g. sustainability reporting, corporate social responsibility, and sustainable development disclosure) seem to become the major research directions soon».

Maas et al. (Maas et al., 2016) highlight four main related practices to bring ESG values in corporate operations which should have linked each other and included in an integrated system of organizational sustainability governance – assessment, accounting & control, reporting, and management. For Fleaca et al. (Fleaca et al., 2023) there are two levels of sustainability monitoring and reporting – the level of countries and the level of companies. Countries' level is mostly

represented by indexes developed by the UN Sustainable Development Solutions Network to measure countries' ability to achieve Sustainable Development Goals and monitor progress. The level of corporate sustainability performance information is introduced by the current reporting standards and frameworks.

The spreadiest research pillars in the area considered are issues of corporate sustainability disclosures and reporting evolution (Chopra, 2024; Kareiva et al., 2015, Miln & Gray, 2013; Fleaca et al., 2023), accounting for sustainability development (Chopra, 2024; Chetanraj, 2023; Bebbington et al., 2001; Bebbington et al., 2017; Hopwood et al., 2010; Bebbington & Larrinaga, 2014; Unerman & Chapman, 2014), assurance of sustainability reporting (Haider & Nishitani, 2019; Dewi & Widyawati, 2023; Radhouane et al., 2020), sustainability performance, ESG-indicators and rating enforcement to manage policies, support responsible an impact investment, provide «green» capital allocation and evaluate sustainable development contribution of companies and countries (Luque-Vilchez et al., 2023, Sandberg et al., 2022, Fleaca et al., 2023; Halper et al., 2022; In, et al., 2019). In this paper, we will focus mostly on the first two areas.

The evolution of corporate reporting has gone a long way and was mostly defined by stakeholder queries to embrace financial and non-financial information in a company's performance assessment. Sustainability reporting mixes these kinds of data to show a company's economic, environmental, and social impacts (Babic & Biloslavo, 2012; Jovanovic & Jovanovic, 2022), thus «financial analysts and investors can redirect and accelerate capital flows towards corporate investments that help tackle important problems related to climate crises and the reaching of sustainable development» (Arvidsson & Dumay, 2022).

Regulation refers to an important part of ESG reporting development. «Sustainability reporting frameworks provide a method of categorizing and regulating the semantics of non-financial information. The process of organization incorporates consensus-based typologies, definitions of concepts, controlled vocabularies, and methods of measurement. Frameworks are intended to advance precision, validity, consistency, and inter-operability» (Esty & Cort, 2020). The variety of sustainability reporting frameworks and metrics can be interpreted both as an obstacle and an opportunity. There are currently more than 600 different systems for regulating non-financial information, for example ESG standards and frameworks, data providers, and ratings reporting. On one hand, the abundance of reporting regulatory systems in place creates a patchwork effect, heterogeneity, and questionable quality of the information provided, complicating the choice of the standards and reports provision. This drives complexity of the corporate reporting and adds costs for business since giving rise to companies' structural subdivisions designed to manage sustainability and control ESG indicators (Halper et al., 2022). At the same time, some studies emphasize as an advantage of reporting diversity that ESG-ratings based on reporting various frameworks improve the quality of analytics. «Many ESG-ratings providers tout the range of underlying information sources as a strength of their rating systems. For example,

the rating provider CSRHub notes that it integrates information from 900 different sources in its ESG rating, including ESG analysts, government data, crowd-sourced information, and non-governmental organizations» (<https://www.csrhub.com/>). «A review of the major frameworks available to investors reveals that there is much collaboration among them, and very little duplication or contradiction. With a few exceptions, they can be used in tandem. They all rely upon the Triple Bottom Line as a foundational conceptual framework for incorporating non-financial measures of performance into the evaluation of corporate activity» (Esty & Cort, 2020).

The most represented in the list of frameworks in literature are Standards of Global Reporting Initiative, the Integrated Reporting framework of IIRC, the Sustainability Accounting Standards Board (SASB) Standards, Impact Reporting Frameworks for Small and Medium Enterprises (including Impact Reporting and Investment Standards (IRIS), the B Impact Assessment, and the Future-Fit Assessment), Climate Change-Related Frameworks (including Climate Disclosure Standards Board (CDSB), the Carbon Disclosure Protocol (CDP), and recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)) and Sustainable Development Goals (SDGs). Fleaca et al. (Fleaca et al., 2023) divided approaches for sustainability monitoring & reporting on International Standards of voluntary reporting (e.g. GRI, SASB, ISO26000, SA8000, AA1000), International Initiative for Sustainability Reporting (IFRS Sustainability Disclosure Standards developed by ISSB), European Initiative for Sustainability Reporting (ESRS – European Sustainability Reporting Standards elaborated by European Financial Reporting Advisory Group) and International Instruments (UN Compact Principles, UN Responsible Investment Principles, OECD Guidelines for Multinational Enterprises and OECD Due Diligence Guideline For Responsible Business conduct).

Recently there have been some changes in standards and bodies, setting them. Following the results of the International Climate Change Conference the International Sustainability Reporting Standards Board (ISSB) was created in 2021 as an international initiative to develop a global framework of standards for sustainable development disclosure. The International Integrated Reporting Committee (IIRC) and the Sustainability Accounting Standards Board (SASB) became parts of the Value Reporting Foundation (VRF), merged with the Climate Disclosure Standards Board (CDSB) and the International Sustainability Reporting Standards Board (ISSB) in 2022. Since IFRS Foundation's ISSB to work, it has released 2 standards, the IFRS S1 and S2 – general sustainability-related and climate-related disclosures which are to be integrated into the company's annual reports. So far under the umbrella of this organization there are three kinds of sustainability reporting standards – IFRS sustainability, SASB, and Integrated Reporting standards.

The main regulative frameworks for sustainability and ESG reporting were structured and put in the diagram in Figure 1.

Figure 1

Sustainability & ESG Standards and Frameworks



Source: developed by the author

The issues of accounting for sustainability started to go on the fore in the 80s and passed several stages of numerous academic discussions. They embrace various strands regarding its theoretical framing, methodology and principles, scientific interlinking, and intra-disciplinary partitions. Considering components of accounting practice arose, accounting research tends to justify new practices by theories accepted in the professional domain, and articulates new types and concepts of accounting, uniting them with related ESG-governance activities. Academic writings in accounting for sustainable development are commonly based on the Interpretative research approach. Studies encompass «a multi-disciplinary problem-focused rather than a siloed-disciplinary approach to research» (Unerman & Chapman, 2014) to build new insight into long-term company efficiency and comply with cutting-edge sustainability sciences (Ecosystem services, Environmental disclosure, and Corporate Social Responsibility). According to the bibliometric analysis (Chetanraj & Kumar, 2023) commonly mentioned are these accounting types: Social and environmental accounting, Environmental management accounting, Economically focused Accounting, Environmental performance, Carbon accounting, Green Accounting, Integrated Accounting, Impact

Accounting, and others. Popular schools are Social and Environmental Accounting (Gray, 2010; Gray & Laughlin, 2012; Gray et al., 1995; Chopra, 2023) and Environmental management accounting (Dasanayaka et al., 2021; Schaltegger et al., 2013).

Developing accounting in the ESG agenda it is reasonable to emphasize the Impact accounting idea, well-represented by the Impact-Weighted Accounts Initiative at Harvard Business School and similar developments. This methodology uses a cross-disciplinary complex approach based on financial accounting, impact management, and sustainability-related disclosures to measure impacts, and value changes in human well-being with a combination of qualitative, quantitative, and monetary approaches aimed to inform corporate managers' decisions or to provide a comprehensive view of the positive and negative impacts generated by an entity to inform investment decisions based on risk, return, and impact (IVFI, 2024). This document was preceded by a series of developments – A Framework for Product Impact-Weighted Accounts (Serafeim & Trinh, 2020), Accounting for Employment Impact at Scale (Fadhel et al., 2021), Accounting for Organizational Employment Impact (Freiberg et al., 2021), A Conceptualization of Sub-Living Wages: Liabilities, Leverage, and Risk (Keller et al., 2022) and others. For every case it was suggested original methodology; for example, product impact was evaluated in several dimensions including product reach (quantity and duration), customer usage (affordability, quality, and ability to choose), affecting the environment (pollutants and efficiency) and the end of product's life (recyclability). Each evaluation dimension featured the kinds of data required, sources of this information, and proper method to make this information commensurable and estimate impact.

A similar comprehensive approach is an Impact-Weighted Accounts Framework of the Impact Economy Foundation, developed in 2022 with two accompanying documents (Impact Economy Foundation, 2022). This document is that it is largely linked with the concept of Integrated Reporting, embracing value creation for society and stakeholders through the entity's impacts on the different kinds of capital involved (the same idea proposed in the six-capital classification of Value Reporting Foundation): «financial, manufactured, intellectual, human, social and natural capital» (IFRS Foundation, 2021). A highly interesting concept of impact statements: Integrated Profit and Loss Statement and Integrated Balance Sheet and three derived statements: the Stakeholder Value Creation Statement (ability to create value for society and stakeholders), the Sustainability Statement for External Costs (act sustainably by operating within planetary and social boundaries) and the Sustainability Statement for SDG Contribution (contribute the sustainable development according to SDGs) (Impact Economy Foundation, 2022).

There are studies devoted to linked informational practices, e.g. audit and assurance of ESG information, scoring systems, rankings, investment ratings, and analytics, which are beyond this literature review and should be examined in further information practices research.

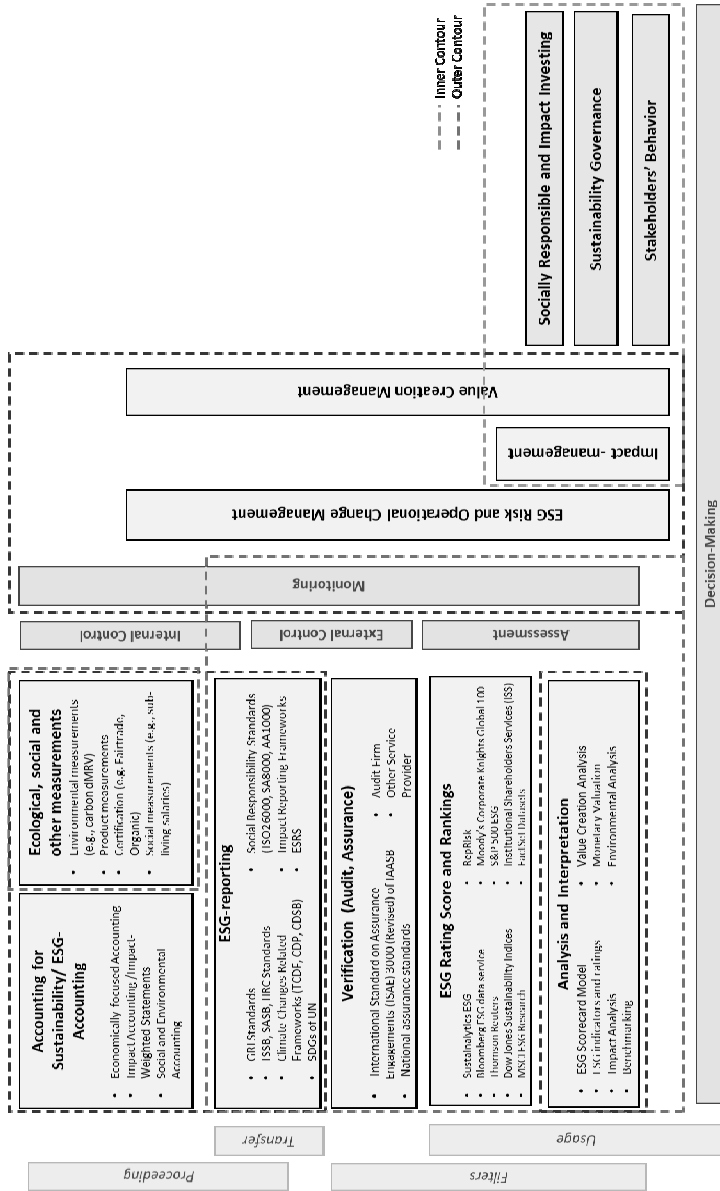
Research Methodology

Given high-level academic concerns, diversity of studies and matters argued in the scope of sustainability, the study was designed as an analysis of existing informational, control and other related practices to identify gaps in the information needed by stakeholders for decision-making with that practically generated in the current environment momentum. It involves exploration, summarizing, and interpreting open access sources data, such as unidirectional studies, non-financial reporting and ESG-ranking databases, program documents, frameworks and standards for sustainability reporting, professional audit analytics, and others. Thematical, logical, and comparative analyses were used for data processing. The study's theoretical framework was mostly based on relevant accounting theories, particularly the Interpretative paradigm. When assessing the possible impact of the new agenda on the methodology of accounting, the balance sheet theories were used in conjunction with such key accounting methods as accounts, and reporting. The methods applied were based on general scientific knowledge, analysis and synthesis, comparison, and evaluation of cause-and-effect relationships. It was decided a qualitative approach in this research because it makes it possible to analyze the evolution of accounting and corporate reporting for sustainability over time, to assess the potential of existing information practices to provide the information needed, and to suggest an upgrade of accounting and bound activities' constructions in ESG landscape.

Research Results

Sustainability management-engaged information and control practices analysis defines the concept of the sustainability information support system including several sequential and parallel information practices. These practices provide not only ESG-data collection, proceeding, presentation, verification, and interpretation, but also communication with the stakeholders, focusing on the areas of executive attention and providing a pro-active sustainability governance model. Being complex, the system of sustainability information and control maintenance should be built as a whole chain of consistent and mutually ensuring targeted processes. By incorporating the decision-making process in this system, it can be considered as a cycle with feedback for new ESG information needed at the next decision-making stage in the sustainability governance contour. Analysis of information practices mainly employed in the ESG governance process to ensure the needs of stakeholders and research background of their further development shows that there is not a holistic approach for this system yet. Figure 2 presents our insight into basic information practices employed in ESG governance.

Figure 2
Information and control practices in ESG-governance



Source: developed by the author

The design of the information support system should match the relevant trends in ESG governance, the most important of which are to provide transparency and efficiency for decision-making and ensure the possibility of evaluating companies' impact on total capitals and medium- and long-term value creation.

To provide efficiency of this system it should be built with incorporation following primary principles and information requirements:

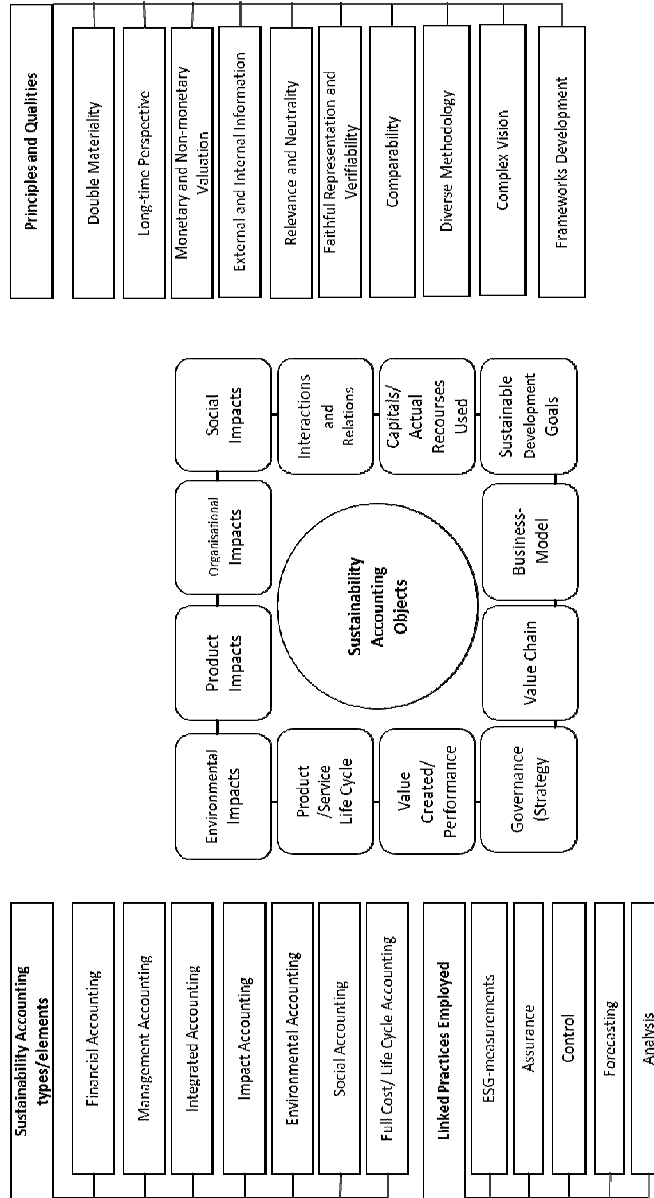
- double materiality to provide both financial and non-financial decisions for all stakeholders,
- consistency and mutual interconnection of practices included,
- transparency, neutrality, and impartiality of the information provided,
- multi-disciplinarity, academic openness, and constant development,
- rejection of formal boundaries in subject area and methodology employed (relevance as a main criterion for information usefulness),
- organization's impacts measurement, evaluation of affecting overall capitals employed and value creation,
- long-term time coverage of impacts and interactions consequences, application life cycle and value chain approaches,
- commensurability and comparability of information, possibility of metrics' usage, monetary and non-monetary valuation,
- verifiability of information and control objectivity.

Accounting information practice still plays a significant role in providing information to assess value-creation, but its methodology should be considerably revised. Agreeing with the Interpretive paradigm accounting allows us to construct socio-economic reality, not just reflect it. ESG accounting is a rapidly developing dynamical informational area that has an interdisciplinary and multi-paradigm nature, associated with bound practices, such as internal control, management analytics, and prediction, social and ecological measurements, human behavior governance, etc. It could be differently intradisciplinary structured or focused to supply information for the reporting and analytical systems and embrace impact accounting, environmental, social accounting, material flow-cost accounting, life cycle or value chain costing, ESG-management accounting, economically focused accounting, and other existing or emerging types. ESG accounting expands its methodology through cutting-edge sustainability sciences knowledge engagement, starting to operate with a big scope of non-financial information obtained from a wide range of sources.

Based on academic and practical insights we can define these main fitting components of ESG accounting (Figure 3):

Figure 3

The major components of accounting for sustainability



Source: developed by the author

- impact accounting to give information regarding product, organizational, environmental, social, and human well-being impacts, describing impact pathways and measure impacts,
- accounting of the entity's Sustainable Development Goals contribution,
- integrated accounting of a company's ability to create value embodied in the capital (financial, manufactured, intellectual, human, social relationship and natural) while influencing the external environment and capital during its activities,
- accounting of the full entity's value chain, which encompasses its activities and relationships (including upstream, own operations, and downstream) to create its products from initial project to production, delivery, consumption, and end-of-life,
- accounting focuses on an entity's economic, social, and environmental interactions and influences.

Through ESG semantics emerged new accounting objects, like all the capital employed, impacts and interactions, their consequences in a long-term perspective, full value chain and product's life cycle, business model, governance matters (strategy, interaction with stakeholders, management team ethics and integrity, management approaches). The content of regular accounting objects such as assets, capital, liabilities, and performance, is expanded. So, we can define an asset as a resource existing as a means or opportunity to accomplish something, and its value is not always monetary, there are other types of utility (environmental, humanitarian, etc.). The rights of ownership are replaced by the rights of access/use/receipt of some benefit embodied in it (in the form of obligations or voluntary encumbrances). For instance, the evolution of the assets concept went through several stages, from balance-presented and controlled resources to available and used resources (Figure 4).

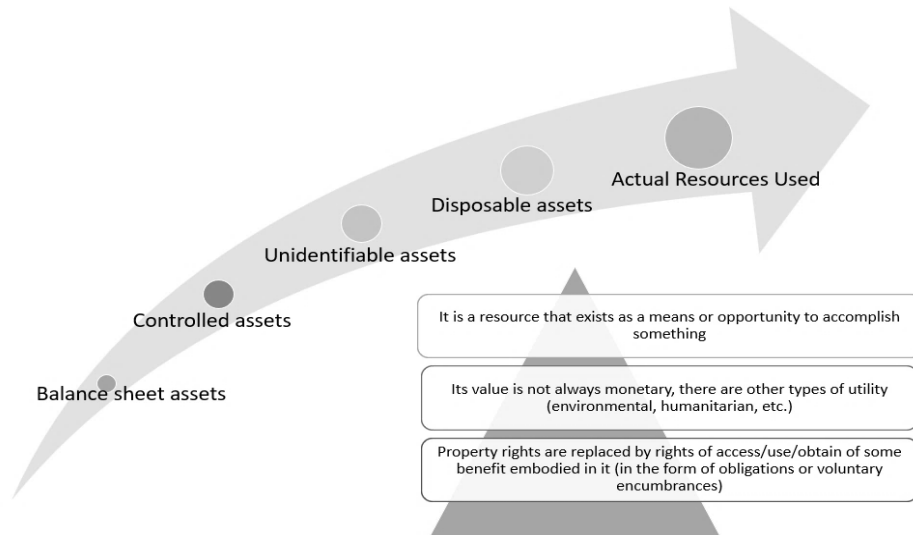
Moreover, the ESG agenda moves on the fore some new kinds of accounting objects such as carbon emissions, which started to be actively traded assets, or «stranded» climate-related assets, which are normally considered assets but tend to a high level of risk because of devaluation and loss.

The value-creation model in the ESG agenda corresponds with the concept of integrated reporting (IFRS Foundation, 2021) and Impact Accounting Statements have been developed recently (International Foundation for Valuing Impacts, 2024). We believe it can be employed to update accounting objects, methodology, and informational outcomes (Figure 5).

The results of value creation, distributed over time and embodied in various types of organization's capital, are provided by aggregate sources related both to its financial relations and non-financial obligations to society due to the humanitarian values, and ethical norms. For example, the balance sheet model may look like presented in Figure 6.

Figure 4

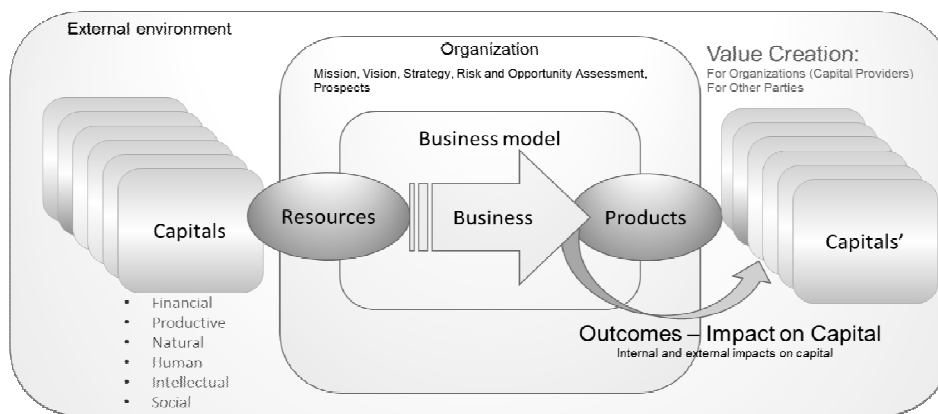
Evolution of the «Asset» concept for ESG accounting



Source: developed by the author

Figure 5

Value creation model



Source: developed by the author on the basis <https://integratedreporting.ifrs.org/>

Figure 6

Recommended balance sheet model for ESG Accounting

Resources Derived from Capital to Be Used in Value Creation	Obligations to the owners/holders of these capitals
Financial Capital (Monetary and Non-Monetary) Assets	Legal obligations to suppliers of financial capital (owners, creditors)
Manufacturing Capital (Producing Assets)	
Intellectual Capital (Knowledge and Intelligence Assets)	Legal obligations to society, its individual groups, institutions, and subjects
Human Capital (Human Resources - Skills, Experience, Qualifications, Interaction, Development)	
Social Capital (Social and Reputational Assets)	Obligations to suppliers of any type of capital, assumed voluntarily (encumbrances or humanitarian burden)
Natural Capital (Environmental and Nature Resources Employed)	
Δ Capitals	Δ Obligations

Impact on capitals

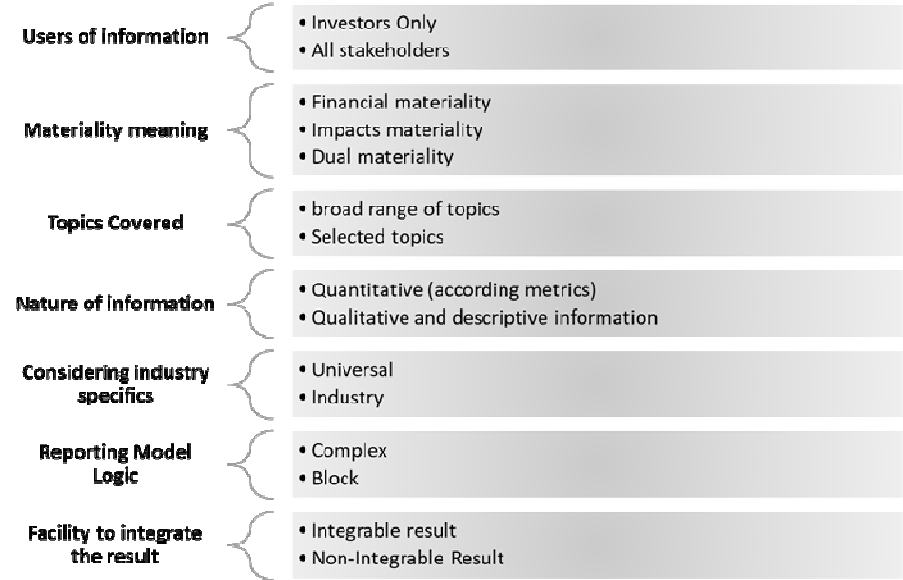
Source: developed by the author

Organizational reporting performs information transfer, communicating and affecting markets and stakeholders' response. «Responsible» corporate reporting embraces a wide scope of the information transmitted while proceeding it structures the areas of managerial attention, risk assessment, and mitigation. The idea of non-financial reporting harmonization is still debatable, but it can be unequivocally stated that despite the reporting fatigue and the difficulty for reporting entities in choosing and applying appropriate frameworks, a wide information coverage makes it possible to better assess the current situation in the field of ESG – the agenda.

Sustainability and ESG reporting systems can be featured according to the scope of different features – users, meaning materiality, nature of information, industry specifics, and coverage of topics. This list should be supplemented by characteristics of complex or block outcome type, and the possibility of results generalization in one integrable output. An example of complex outcome reporting is an integrated report that indicates a company's ability to create value, while a larger part of sustainability reports provides information on different topic blocks. Integrated reporting lets summarize findings into an overall result or common inference, unlike other frameworks' ESG reports that have non-integrable results. Figure 7 shows the suggested classification of ESG reporting systems.

Figure 7

Classification of ESG reporting systems



Source: developed by the author

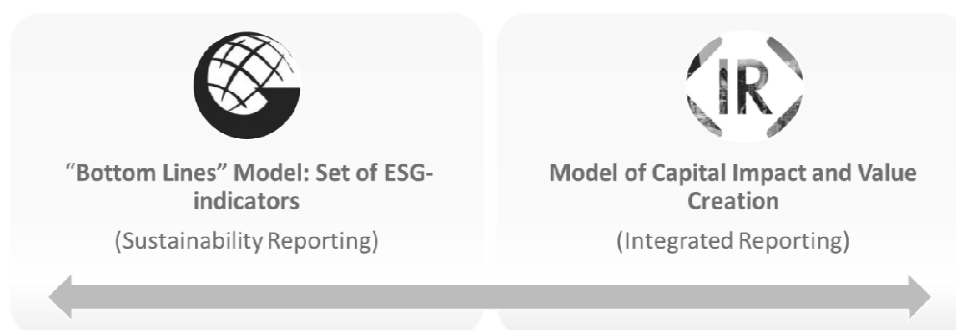
Thus, the distinctive features permit the dividing ESG-reporting multitude for basic models: the «Bottom Lines» model, including the set of ESG indicators (e.g., GRI reporting) and the model of Capital Impact and Value Creation (e.g., Integrated Reporting). Since the notion of the reporting model is not commonly used, we can define it as a logic of building an «interrelated system of financial and non-financial indicators and explanations to give the possibility to assess a company's sustainability contribution and its impact on all types of capital involved in the value creation» (Odintsova, 2023).

The first model based mostly on impact materiality, uses block logic with non-integrated output, directed to the wide scope of stakeholders to disclose the organization's impact on nature and society. This approach uses different coverage of topics and indicators and is applied in different sustainability / corporate responsibility reporting frameworks. The second model is focused more on financial capital providers but gives a comprehensive vision of the business prospects. Relying on the financial materiality, this reporting indicates relevant value-creation drivers. Integrated reporting is based on three key concepts: capitals involved and

influenced by organizations, a business model that transforms resources into products and results, and the ability to create value under their influence. In terms of the International Framework for Integrated Reporting, an integrated report is a «concise communication about how an organization's strategy, governance, performance, and prospects, in the context of its external environment, lead to the creation, preservation or erosion of value over the short, medium, and long term» (IFRS Foundation, 2021). The diagram of the two defined basic reporting models is presented in Figure 8.

Figure 8

Two ESG reporting models



Source: developed by the author

Both ESG-reporting models have certain advantages that do not overlap, and both should be used in sustainability pro-active governance. Being an informative and communicative practice, reporting provides data collection and construction of a «client-oriented» approach to govern stakeholders' and market reactions to information supplied. This refers to the Constructionist Methodology in the Interpretative paradigm in accounting, considering the reality formation via information. The process of ESG-data capture and proceeding shape parallel targeting sustainable-value creation and control ESG risks. This practice highlights non-financial areas of governance and value-creation platforms and refreshes management semantics to transform business performance criteria to the impact on capital metrics and appropriate drivers. This approach enables us to predict the reaction of the market, society, institutions, and authorities and to highlight ESG governance fields.

The common feature of models we see initially inherent to reporting emphasis is to create value (ESG-value), and clear financial intention to attract investors through reputation capitalization. This means that being non-financial, ESG reporting uses financial goals' designs. Moving this practice forward, one must avoid financial patterns originating with traditional reporting but use the idea of accounting as a social practice and interpretative paradigm. But to make reporting an instrument of sustainability management we must avoid financial stereotypes in its main idea. This can make ESG-reporting impact not reactive but proactive and use it to leverage sustainability governance incentives and main actors' responsible behavior.

Practical Implementation

The results of this study can be applied in building a holistic system of ESG governance informational support. Recommendations for the transformation of accounting, and reporting, can be used in programmatic, advisory, and regulatory documents that structure the information field of sustainable development.

Conclusions

Information and control practices called to provide sustainable governance comprise a wide scope of financial, governance, and information matters, not only information supplied for the decision-makers and a broad range of stakeholders. This led to new approaches providing sustainability governance, green value creation, and responsible investment, setting up integrated thinking and movement towards societal progress and a sustainable future.

The system of sustainability information and control provision can be considered as a chain of consistent and mutually ensuring targeted processes, including accounting for sustainability, ESG measurements, verification (assurance), rating, and analysis and while incorporating in this system the decision-making process, it can be considered as a sustainability governance loop. Given the importance of all the elements in this system of information and control sustainability management support, nevertheless we believe the key generating elements are accounting and reporting and it is to them that we paid the most attention in this writing.

Accounting in ESG-agenda is a chief swiftly developing interdisciplinary informational practice, linked with internal control, management analytics, and social and ecological measurements, which includes impact accounting, Sustainable

Development Goals contribution accounting, integrated accounting, value chain and life-cycle accounting. Sustainability governance significantly impacts accounting, expanding its subject field, basic concepts, the scope of objects, criteria for their recognition, and making multidimensional the businesses' activity metrics.

Analysis of reporting systems revealed that the wide-spread ones could differ on many points (users, materiality meaning, detailing, topic coverage, etc.), but the most important distinction is in the basic informational reporting model including either a few «bottom lines» set of ESG-indicators or complex model of value creation. The common feature of both models we see is initially inherent to reporting emphasis to create value (this case ESG-value), and clear financial intention to attract investors through reputation capitalization. This means that even being non-financial, ESG reporting uses financial objectives designs. Moving this practice forward one must avoid financial patterns that originated with traditional reporting but use the idea of accounting as a social practice and interpretative paradigm. The analysis of two main ESG-reporting models reveals their certain advantages do not overlap and both should be used in sustainability pro-active governance. The approach recommended will enable not only to predict the reaction and behavior of, the market, society, institutions, and authorities but to highlight areas of importance for ESG-governance and risk management.

References

- Ahmad, H., Yaqub, M., Lee, S. (2023) Environmental-, social-, and governance-related factors for business investment and sustainability: a scientometric review of global trends. *Environment, development and Sustainability*, (26), 2965–2987 <https://doi.org/10.1007/s10668-023-02921-x>
- Arjalies, D.-L., Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, 24(4), 284–300. <https://doi.org/10.1016/j.mar.2013.06.003>
- Arvidsson, S., Dumay, J. (2022). Corporate ESG reporting quantity, quality, and performance: Where to now for environmental policy and practice? *Business Strategy and the Environment*, 31(3), p. 1091, <https://doi.org/10.1002/bse.2937>
- Babič, S., Biloslavo, R., Kodric, B. (2023). Relationship Between Environmental Reports and Environmental Performance: A Case of the Processing Industry in the Republic of Slovenia. *Organizacija*, 56, 309 – 323. <https://doi.org/10.2478/orga-2023-0021>
- Bankrate, (2023). *ESG investing statistics*. URL: <https://www.bankrate.com/investing/esg-investing-statistics/>

- Bebbington, J., Gray, R., Hibbitt, C., Kirk, E. (2001). *Full cost accounting: an agenda for action*. (ACCA research report; No. 73). Certified Accountants Educational Trust. URL: https://dundee-primo.hosted.exlibrisgroup.com/permalink/f/3k4lla/44DUN_ALMA_DS2146118060002991
- Bebbington, J.; Larrinaga, C. (2014). Accounting and sustainable development: An exploration. *Accounting, Organizations and Society*, 39(6), 395–413. <https://doi.org/10.1016/j.aos.2014.01.003>
- Bebbington, J., Russell, S., Thomson, I. (2017). Accounting and sustainable development: Reflections and propositions. *Crit. Perspect. Account.*, 48, 21–34. URL: <https://doi.org/10.1016/j.cpa.2017.06.002>
- Bebbington, J., Unerman, J., O'Dwyer, B. (Eds.). (2014). *Sustainability accounting and accountability* (2nd ed.) Abingdon: Routledge. <https://doi.org/10.4324/9781315848419>
- Bloomberg (2023). *ESG assets may hit \$53 trillion by 2025, a third of global AUM*. [Accessed 20.12.2023]. URL: <https://www.bloomberg.com/professional/blog/esg-assets-may-hit-53-trillion-by-2025-a-third-of-global-aum/>
- Bouten, L., Hoozee, S. (2013). *On the interplay between environmental reporting and management accounting*. *Management Accounting Research*, 24(4), 333–348 <https://doi.org/10.1016/j.mar.2013.06.005>
- Buhr, N. (2007). Histories and rationales for sustainability reporting. In J. Unerman, J. Bebbington, & B. O'Dwyer (Eds.), *Sustainability accounting and accountability* (pp. 57–69). Abingdon: Routledge. <https://doi.org/10.4324/9780203815281>
- Capital Group, (2023). *Shining a light on ESG attitudes and adoption*. URL: <https://www.capitalgroup.com/institutional/investments/esg/perspectives/esg-global-study.html>
- Chan, K. M., Boyd, D. R., Gould, R. K., et al. (2020). Levers and Leverage Points for Pathways to Sustainability. *People and Nature*, (2), 693-717. <https://doi.org/10.1002/pan3.10124>
- Chetanraj, D.B., Kumar, J.P.S. (2023). Forty-Seven Years of Environmental Management Accounting Research: A Bibliometric Analysis. *Journal of Environmental Management & Tourism*, 14(5), pp. 2207-2241 [https://doi.org/10.14505/jemt.v14.5\(69\).05](https://doi.org/10.14505/jemt.v14.5(69).05)
- Chopra, S.S.; Senadheera, S.S.; Dissanayake, P.D.; Withana, P.A.; Chib, R.; Rhee, J.H.; Ok, Y.S. (2024). Navigating the Challenges of Environmental, Social, and Governance (ESG) Reporting: The Path to Broader Sustainable Development. *Sustainability*, 16 (2), 606. <https://doi.org/10.3390/su16020606>
- Contrafatto, M., Burns, J. (2013). Social and environmental accounting, organizational change and management accounting: A processual view. *Manage-*

-
- ment Accounting Research*, 24(4), 349–366 <https://doi.org/10.1016/j.mar.2013.10.004>
- Dasanayaka, C.H., Murphy, D.F., Nagirikandalage, P., & Abeykoon, C. (2021). The application of management accounting practices towards the sustainable development of family businesses: A critical review. *Cleaner Environmental Systems*. <https://doi.org/10.1016/j.cesys.2021.100064>
- Deegan, C. (2014). *An overview of legitimacy theory as applied within the social and environmental accounting literature*. In J. Bebbington, J. Unerman, & B. O'Dwyer (Eds.), *Sustainability accounting and accountability* (2nd ed., pp. 248–272). Abingdon: Routledge <https://doi.org/10.4324/9781315848419>
- Deloitte. Globally Consistent ESG Reporting. (2023). URL: <https://www.deloitte.com/global/en/about/people/social-responsibility/globally-consistent-esg-reporting.html>
- Dewi, A., Widyawati, L., (2023). *The Relationship between Sustainability Performance and Financial Performance with External Assurance as the Moderating Variable in Indonesian Listed Companies*. IOP Conference Series. Earth and Environmental Science, 1199(1), 012-025. <https://doi.org/10.1088/1755-1315/1199/1/012025>
- Esty, D. C., Cort T. (2020). *Values at Work: Sustainable Investing and ESG Reporting*. Springer International Publishing: Palgrave Macmillan <https://doi.org/10.1007/978-3-030-55613-6>
- Ernst & Young (2022). *How can corporate reporting bridge the ESG trust gap?* [Accessed: 10.11.2023]. Available from Internet: https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/assurance/assurance-pdfs/ey-global-reporting-survey-report-2022.pdf
- Fadhel, A., Panella, K., Rouen, E. Serafeim, G. (2021). *Accounting for Employment Impact at Scale*/ Harvard Business School Accounting & Management Unit Working Paper No. 22-018. <http://dx.doi.org/10.2139/ssrn.3925248>
- Fleaca, B.; Fleaca, E.; Corocaescu, M. (2023). Sustainability information – analysis of current trends in sustainability monitoring & reporting. *Entrepreneurship and Sustainability Issues*, 10 (3), 274-287. [https://doi.org/10.9770/jesi.2023.10.3\(18\)](https://doi.org/10.9770/jesi.2023.10.3(18))
- Freiberg, D., Panella, K. Serafeim, G., Zochowski, R. (2021). *Accounting for Organizational Employment Impact*. Harvard Business School Accounting & Management Unit Working Paper No. 21-050. <http://dx.doi.org/10.2139/ssrn.3707740>
- Governance and Accountability Institute (2022). *New G&A Institute Research Shows Sustainability Reporting by Largest U.S. Public Companies Reached All-Time Highs in 2021*. URL: <https://www.globenewswire.com/>

en/news-release/2022/11/16/2557344/0/en/New-G-A-Institute-Research-Shows-Sustainability-Reporting-by-Largest-U-S-Public-Companies-Reached-All-Time-Highs-in-2021.html

- Gray, R. (2010). Is accounting for sustainability accounting for sustainability and how would we know? An exploration of narratives of organizations and the planet. *Accounting, Organizations and Society*, 35(1), 47–62. <http://dx.doi.org/10.1016/j.aos.2009.04.006>
- Gray, R. (2010). Is accounting for sustainability accounting for sustainability...and how would we know? An exploration of narratives of organizations and the planet. *Accounting, Organ. Soc.* 35(1), 47–62. <https://doi.org/10.1016/j.aos.2009.04.006>
- Gray, R., Bebbington, J., & Gray, S. (2010). *Social and environmental accounting* (Vols. I–IV). London: Sage. ISBN: 9781848601697
- Gray, R. Laughlin, R. (2012), «It was 20 years ago today: Sgt Pepper, Accounting, Auditing & Accountability Journal, green accounting, and the Blue Meanies», *Accounting, Auditing & Accountability Journal*. 25(2), 228-255. <https://doi.org/10.1108/09513571211198755>
- Gray, R., Walters, D., Bebbington, J., Thompson, I. (1995). The greening of enterprise: An exploration of the (NON) role of environmental accounting and environmental accountants in organizational change. *Crit. Perspect. Account.*, vol. 6, no. 3, pp. 211–239. <https://doi.org/10.1006/cpac.1995.1021>
- Guenther, E., Endrikat J., and Guenther, T. W. (2016). Environmental management control systems: a conceptualization and a review of the empirical evidence. *J. Clean. Prod.* 136: 147–171. <https://doi.org/10.1016/j.jclepro.2016.02.043>
- Haider, M.B., Kimitaka, N. (2020). *Views of corporate managers on assurance of sustainability reporting: evidence from Japan*. *International Journal of Disclosure and Governance*, 17(1), 1-19. <https://doi.org/10.1057/s41310-019-00070-0>
- Halper J., Grieve D., Shriver, T., Cadwalader (2022). *ESG Ratings: A Call for Greater Transparency and Precision*. URL: <https://corpgov.law.harvard.edu/2022/11/10/esg-ratings-a-call-for-greater-transparency-and-precision/>
- Hopwood, A. G., Unerman, J., & Fries, J. (Eds.). (2010). *Accounting for sustainability: Practical insights*. London: Earthscan <https://doi.org/10.4324/9781849776332>
- IFRS Foundation (2022). *The growing momentum for integrated reporting: Part 1*. URL: <https://www.integratedreporting.org/news/the-growing-momentum-for-integrated-reporting-part-1/>

-
- Impact Economy Foundation (2022). *Impact-Weighted Accounts Framework*. URL: <https://impac economyfoundation.org/impactweightedaccountsframework/impact-weighted-accounts-framework-document/>
- In, S. Y.; Rook, D., Monk, A. (2019). Integrating Alternative Data (Also Known as ESG Data) in Investment Decision Making. *Global Economic Review*, 48(3), 237–260. <https://doi.org/10.1080/1226508X.2019.1643059>
- IFRS Foundation (2021). *Integrated Reporting Framework*. URL: <https://integratedreporting.ifrs.org/international-framework-downloads/>
- International Federation of Accountants (2023). *The State of Play: Sustainability Disclosure & Assurance 2019-2021, Trends & Analysis*. URL: <https://www.ifac.org/knowledge-gateway/contributing-global-economy/publications/state-play-sustainability-disclosure-assurance-2019-2021-trends-analysis>
- International Foundation for Valuing Impacts (2024). *General Methodology 1: Conceptual Framework for Impact Accounting*. URL: <https://ifvi.org/research/methodology-development/general-methodology-1/>
- Jovanovic, D., & Jovanovic, N. (2022). Corporate Governance Challenges in Relation to the ESG Reporting. *InterEULawEast: Journal For the International and European Law, Economics and Market Integrations*. 9(2), 269-287. <https://doi.org/10.22598/iele.2022.9.2.9>
- Kareiva, P. M., McNally, B.W., McCormick, S., Miller, T. & Ruckelshaus, M. (2015). Improving global environmental management with standard corporate reporting. *Perspective. Social Science*. Vol. 112 (24), 7375-7382 <https://doi.org/10.1073/pnas.1408120111>
- Keller, D. Panella, K. Serafeim, G. (2022). *A Conceptualization of Sub-Living Wages: Liabilities, Leverage, and Risk*. Harvard Business School Accounting & Management Unit Working Paper No. 22-076. <http://dx.doi.org/10.2139/ssrn.4137565>
- KPMG (2021). *CEO Outlook 2021: Optimism is back in the boardroom*. URL: <https://kpmg.com/xx/en/home/insights/2021/08/kpmg-2021-ceo-outlook.html>
- Luque-Vílchez, M., Gómez-Limón, J.A., Guerrero-Baena, M.D., Rodríguez-Gutiérrez, P. (2023) Deconstructing corporate environmental, social, and governance performance: heterogeneous stakeholder preferences in the food industry. *Sustainable Development*, 31 (3), 1845-1860 <https://doi.org/10.1002/sd.2488>
- Maas, K., Schaltegger, S., Crutzen, N. (2016). Integrating corporate sustainability assessment, management accounting, control, and reporting. *Journal of Cleaner Production*, (136A), 237-248 <https://doi.org/10.1016/j.jclepro.2016.05.008>
- Milne, M. J., Gray, R. (2013). W(h)ither Ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. *Journal of Busi-*

- ness Ethics*, 118, 13-29. URL: <https://link.springer.com/article/10.1007/s10551-012-1543-8>
- Moore, D. (2013). Sustainability, institutionalization and the duality of structure: The role of context and strategic factors. *Management Accounting Research*, 24(4), 367–387 <https://doi.org/10.1016/j.mar.2013.06.006>
- Mordor Intelligence. ESG Rating Services Market Size. (2024). URL: <https://www.mordorintelligence.com/industry-reports/esg-rating-services-market/market-size>
- Odintsova, T. (2024). Accounting Transformation for ESG Reporting in The Sustainability Agenda. *SCIREA Journal of Economics*. 9 (1), 1-21. 10.54647/economics790433
- Official Journal of the European Union (2023). Directive 2013/34/EU of the European Parliament and the Council as regards sustainability reporting standards of 31 July 2023. URL: <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32023R2772>
- 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), 303-322. <https://doi.org/10.14207/ejsd.2021.v10n1p303>
- Peng, C. W., & Yang, M. L. (2014). The effect of corporate social performance on financial performance: The moderating effect of ownership concentration. *Journal of Business Ethics*, 123, 171-182 <https://doi.org/10.1007/s10551-013-1809-9>
- PwC: «Only 29% of investors say current company reporting adequately describes ESG's impact on business performance». (2021). URL: <https://www.pwc.com/gx/en/news-room/press-releases/2021/pwc-esg-investor-survey-2021-full-report.html>
- Radhouane, I., Nekhili, M., Nagati, H. and Paché, G. (2020). *Is voluntary external assurance relevant for the valuation of environmental reporting by firms in environmentally sensitive industries?* *Sustainability Accounting, Management and Policy Journal*, 11(1), 65-98. <https://doi.org/10.1108/SAMPJ-06-2018-0158>
- Rawhouser, H., Cummings, M., Newbert, S. L. (2019). Social Impact Measurement: Current Approaches and Future Directions for Social Entrepreneurship Research. *Entrepreneurship Theory and Practice*, 43(1), 82-115. <https://doi.org/10.1177/1042258717727718>
- Rodrigue, M., Magnan, M., & Boulianne, E. (2013). Stakeholders' influence on environmental strategy and performance indicators: A managerial perspec-

-
- tive. *Management Accounting Research*, 24(4), 301–316. <https://doi.org/10.1016/j.mar.2013.06.004>
- Salazar J. de J., Husted B. W., Biehl M. (2012) Thoughts on the evaluation of corporate social performance through projects. *Journal of Business Ethics* 105(2): 175–186. <https://doi.org/10.1007/S10551-011-0957-Z>
- Sandberg, H., Alnoor, A., Tiberius, V. (2022) Environmental, social, and governance ratings and financial performance: evidence from the European food industry. *Business Strategy and the Environment*, 32 (4), 2471–2489. <https://doi.org/10.1002/bse.3259>
- Schaltegger, S., Gibassier, D., Zvedov, D. (2013) Is Environmental Management Accounting a Discipline? A Bibliometric Literature Review. *Meditari Accountancy Research*, 21(1), 4-31, URL: <https://ssrn.com/abstract=2294992>
- Serafeim, G. Trinh, K. (2020). *A Framework for Product Impact-Weighted Accounts*. Harvard Business School Accounting & Management Unit Working Paper No. 20-076. <http://dx.doi.org/10.2139/ssrn.3532472>
- de Souza Barbosa, A., da Silva, M.C.B.C., da Silva, L.B. et al. (2023). Integration of Environmental, Social, and Governance (ESG) criteria: their impacts on corporate sustainability performance. *Humanities and Social Sciences Communications*. (10) 410. <https://doi.org/10.1057/s41599-023-01919-0>
- Targeted consultation on the functioning of the ESG ratings market in the European Union and on the consideration of ESG factors in credit ratings. Summary report. (2022). URL: https://finance.ec.europa.eu/regulation-and-supervision/consultations/finance-2022-esg-ratings_en
- Thomson, I. (2014). *Mapping the terrain of sustainability and accounting for sustainability*. In J. Bebbington, J. Unerman, & B. O'dwyer (Eds.), *Sustainability accounting and accountability* (2nd ed., pp. 15–29). Abingdon: Routledge. ISBN 978-0-415-69558-9, 978-0-415-69557-2
- Unerman, J., Chapman, Ch. (2014). Academic contributions to enhancing accounting for sustainable development. *Accounting, Organizations and Society*, 39(6), 385–394. <https://doi.org/10.1016/j.aos.2014.07.003>
- Rawhouser, H., Cummings, M., & Newbert, S. L. (2019). Social Impact Measurement: Current Approaches and Future Directions for Social Entrepreneurship Research. *Entrepreneurship Theory and Practice*, 43(1), 82-115. <https://doi.org/10.1177/1042258717727718>