Discover Sustainability

Research

EU social taxonomy for sustainable economic activities: exploring the known and navigating the current issues as well as future research

Amir Moradi[1] · **Rabia Fatima**[1] · **Tessa Groner**[1] · **Hugo Gobato Souto**[2]

Received: 31 May 2024 / Accepted: 12 September 2024
Published online: 18 September 2024

Abstract
This research aims to initiate academic discussion on the European Union (EU) social taxonomy for the purpose of promoting sustainable economic activities that ultimately contribute to achieving the United Nations' sustainable development goals (SDGs) in the EU. The paper examines the historical evolution of the social taxonomy concept and presents the chronological order of the regulatory advancements that have paved the way for the establishment of both the EU environmental and social taxonomies. This study emphasizes the role of the EU environmental taxonomy as the frontrunner and highlights three fundamental distinctions between taxonomies in terms of objectives, foundations, and measurability. By defining the key performance indicators applicable to entities engaged in taxonomy-aligned economic activities, the paper offers a tabulated framework to understand the core focus areas, sub-objectives, and types of substantial contributions related to each of the three social objectives outlined in the EU taxonomy. Moreover, this paper aims to emphasize the contemporary challenges and the prospective avenues for future research in the field of social taxonomy.

Keywords EU taxonomy · Social taxonomy · Social sustainability · Sustainable finance · Sustainable economy

1 Introduction

Defining a standardized code of conduct for investors and businesses that prioritizes activities conducted in accordance with human rights, as well as investments aimed at improving living and working conditions, has posed a significant challenge for regulators. The concept of social taxonomy seeks to address this challenge. However, there is a lack of academic literature on this topic, with most of the documents being produced by various bodies of the EU in preparation for the EU social taxonomy report.

This paper aims to contribute to the existing literature by filling this gap. First, it initiates the academic discussion on social taxonomy as a pioneer, providing guidance for companies to align with and report based on the social taxonomy guidelines of the EU. Currently, businesses struggle to understand how to comply with social taxonomy guidelines, and the authors intend to begin clarifying this challenge in this initial paper. Second, this research conducts a comprehensive review of scientific journal articles and gray literature to shed light on the previous work done on social taxonomy. This contribution explores what has been published in academic journals, policy literature, working papers, and government documents, demonstrating the limited exploration of this topic.

✉ Amir Moradi, amir.moradi@han.nl; Rabia Fatima, rabia.fatima@han.nl; Tessa Groner, tessagroner@gmail.com; Hugo Gobato Souto, hgsouto@usp.br | [1]International School of Business at HAN University of Applied Sciences, Ruitenberglaan 31, 6826 CC Arnhem, The Netherlands. [2]Institute of Mathematics and Computer Sciences at University of São Paulo, Av. Trab. São Carlense 400, São Carlos 13566-590, Brazil.

Third, the paper explores the evolution of the conceptual framework of social taxonomy, considering the utilization of the EU environmental taxonomy as a basis for the development of an EU social taxonomy. Since there are multiple taxonomies, it is important for practitioners to understand how they relate and work together. This contribution informs us about the relationship between the EU environmental taxonomy and the EU social taxonomy and highlights the distinctions between them. Additionally, potential challenges that practitioners may face during the implementation of social taxonomy are discussed. Finally, several possible avenues for future research on social taxonomy are explored. To achieve these objectives, the paper addresses the following research questions: RQ1: How has knowledge regarding social taxonomy evolved over time? RQ2: How is social taxonomy aligned with the EU taxonomy? RQ3: What are the potential directions for future research to advance this scientific field of knowledge?

In what follows, we first explain the research methodology used in this paper. In Sect. 3, we elaborate on the literature review with a focus on the evolution of social taxonomy, the EU framework, current issues, and emerging themes. In this section, we also demonstrate the tabulated social objectives of the EU Taxonomy and provide practitioners with some key performance indicators (KPIs) for taxonomy alignment in business activities. Section 4 discusses the results. Section 5 concludes the article by summarizing the main findings and contributions, and Sect. 6 addresses limitations and suggests potential future lines of research.

2 Research method

The field of social taxonomy research is still in its infancy all around the world [1], and the literature is very fragmented at the moment. Therefore, to explore the conceptual structure, examine current issues, and explain future research areas in the EU social taxonomy research paradigm, this study conducts a systematic literature review (SLR) and content analysis of journal articles and the grey "or gray" literature. The grey literature refers to the diverse and heterogeneous body of knowledgeable material available outside of traditional academic peer-review processes, and it can enhance the relevance and impact of management and organizational studies [2]. Specifically, the inclusion of grey literature in a systematic review reduces publication bias, improves the comprehensiveness and timeliness of reviews, and enhances a balanced picture of available evidence [3]. The comprehensiveness of the SLR combined, with the in-depth perspective of the content analysis, facilitates a better understanding of the current focus of research in the field of social taxonomy [4]. The combined method consists of four steps. In stage 1, we identify other research questions and determine the appropriate approaches. Stage 2 involves collecting and screening the data. In stage 3, we conduct a formal analysis. Finally, in the last stage, we draw conclusions and identify future research opportunities. Figure 1 provides a comprehensive overview of the entire study.

To collect the bibliographic data, we select Scopus and Web of Science, as both of these are the most widespread powerful databases with different searching and browsing options [5–7]. To enhance the relevance and reliability of the

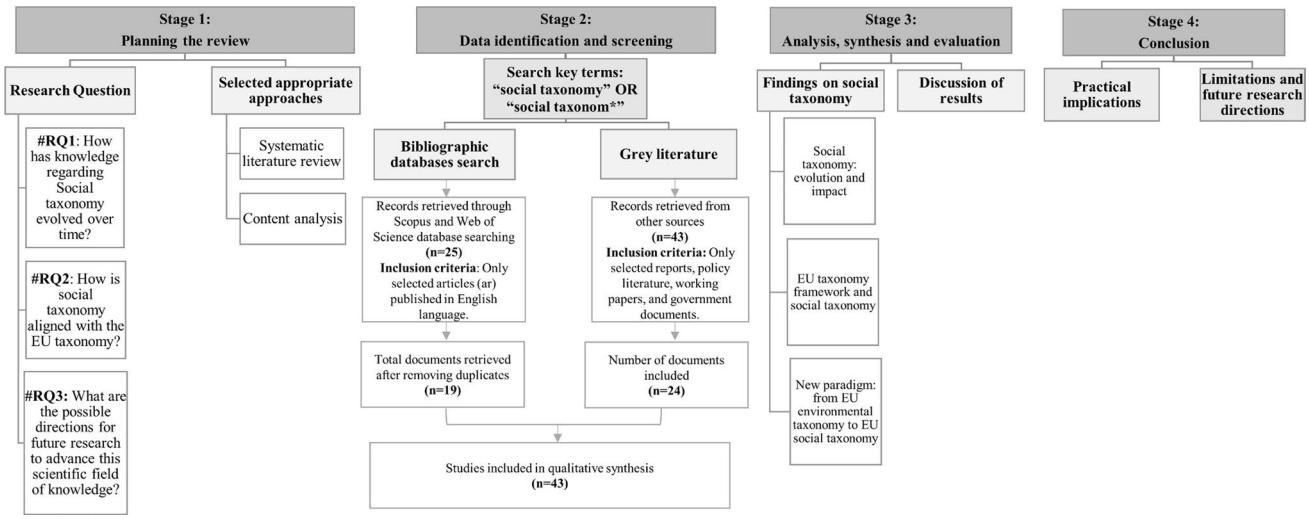

Fig. 1 Methodological workflow. Source: Authors' elaboration

Table 1 Selected document types

Keywords	Selected documents			
	Scientific literature	Total number	Grey literature	Total number
"Social taxonomy" OR "Social taxonom*"				
	Articles ('ar')	19	Reports/Government documents	15
			Policy papers	2
			Working papers, discussion papers, and position papers	7
Total selected documents = 43				

Source: Authors' elaboration

selected dataset, within the scientific literature, we only select document-type articles ('ar') that are published in English, whereas for the grey literature, we confine our research to reports, government documents, policy papers, working papers, discussion papers, and position papers publish in English language (see Appendix Table 5). In total, 43 documents are retrieved. Table 1 provides an overview of the selected dataset.

3 Findings on social taxonomy

This section presents the fundamental findings of our study, derived from the SLR we conducted. The analysis is structured into three main areas. The first area focuses on the evolution of the social taxonomy concept. The second section explains the recent developments in the EU taxonomy framework. Lastly, the third section explains the social taxonomy and disclosure regulations within the EU taxonomy paradigm. This section also provides a brief difference between social and environmental taxonomies. By organizing the findings into distinct sections, our aim is to emphasize the dominant trends and focal points within the existing literature, providing a comprehensive overview of the current state of research in this research domain.

3.1 Social taxonomy: evolution and impact

This section provides a comprehensive overview of the evolution of the concept of social taxonomy.

The concept of social taxonomy is used in various subject areas, such as psychology [see e.g., [8, 9]], medicine [see e.g., [10, 11]], engineering [see e.g., [12, 13]], and social science [see e.g., [14–17]]. In the field of social sciences, the first paper is published in 1990 regarding how actors in the education sector manipulate social taxonomies and classifications to protect their interests and restore order [18]. However, within the sustainable investment and sustainable development context, this concept caught the attention of policymakers as well as researchers in the year 2021, after the publication of the "draft report on the social taxonomy" by the platform on sustainable finance [19]. The term "taxonomy" is mainly defined as the theory and practice of categorizing or classification. Whereas the social taxonomy within the paradigm of sustainable investment is first defined by the German NGO representative who is also a member of the platform on sustainable finance [for details, see [20]]. In the report "human rights are investors' obligations. A proposal for a social taxonomy for sustainable investment", Schneeweiß defines social taxonomy as a classification of services and products that have significant positive social impacts, such as in healthcare, drinking water supply, education, or public transport [20]. He further emphasizes on the fact that these activities can only be considered "*social*" if they are accessible to marginalized or socially disadvantaged groups, as the main goals of this social taxonomy are geared towards the UN SDGs, in which 15 are well-suited for social objectives[1] [20]. However, there are some goals where the content overlaps with the environmental taxonomy, for instance, SDG 13 (climate action), SDG 14 (life below water), and SDG 15 (life on land) [20].

[1] These goals are (SDG 1) no poverty, (SDG 2) zero hunger, (SDG 3) good health and well-being, (SDG 4) quality education, (SDG 5) gender equality, (SDG 6) clean water and sanitation, (SDG 7) affordable and clean energy, (SDG 8) decent work and economic growth, (SDG 9) industry, innovation and infrastructure, (SDG 10) reduced inequality, (SDG 11) sustainable cities and communities, (SDG 12) responsible consumption and production, (SDG 13) climate action, (SDG 16) peace and justice strong institutions, and (SDG 17) partnerships to achieve the goals.

More precisely, over the last few years, it has been widely recognized that there is a need to invest in social sustainability in order to achieve the SDGs of the UN's 2030 agenda and to establish the social internal market as per Article 3 of the Treaty on EU [21, 22]. According to Eizenberg & Jabareen [23], social sustainability refers to socially oriented practices aimed at addressing important social concerns in order to mitigate the risk of climate change and environmental hazards. In other words, social sustainability aims to address both risk as well as social problems. Social sustainability is considered as one of the most important dimensions of sustainable development because in general, the goal of the 2030 agenda for sustainable development is to make the environment, both societal and natural, a better place for individuals [24]. Many recent studies have explained the conceptual frameworks of social sustainability [23, 25–27] and its value creation in various business sectors [28–32]. However, the EU taxonomy included only limited suggestions for social sustainability [22]. Therefore, the European Commission (EC) decided to give the Platform on Sustainable Finance the mandate to also extend the taxonomy to social objectives. As the experts believe, the social taxonomy has the potential to address social issues and harmonize how social sustainability is measured. This will make it easier for investors to make informed and reliable decisions, and at the same time, help direct financial resources towards socially responsible economic activities and companies [22].

The EU Taxonomy initially classifies sustainable activities based on environmental objectives, known as the environmental taxonomy, and is now expanding to include social criteria, referred to as the social taxonomy, for human rights and social inclusion. In this regard, in 2021, the "draft report by subgroup 4: social taxonomy" categorizes social taxonomy as the core subgroup of the EU Taxonomy, aiming to classify the economic activities that significantly contribute to social goals [19]. In this report, the EC underlines that a social taxonomy would be key to channel financial capital flows towards economic activities that improve living standards, working conditions, and human rights protection [17]. Later in September 2021, the report published by Eurosif explains that social taxonomy is a valuable transparency tool that explains social objectives and social impact and facilitates the practical application of the existing EU sustainable finance regulation [21]. Still, it is important to remember that this is the robust classification tool to evaluate which activities are sustainable [33], specifically 'socially' sustainable. In general, the social taxonomy aim is to create awareness in all economic actors and society about the different types of social risks and opportunities that economic activities can bring [1]. More precisely, on one side this tool is particularly beneficial for investors as it offers criteria to identify and evaluate the social impact of various economic activities and the performance of business entities [34]. This will facilitate the re-orientation of capital toward socially sustainable activities, as it provides clear objectives for socially oriented activities and brings more transparency for impact investors on the performance and social impact of their investments [1]. On the other hand, it provides business entities with incentives to revise the way their economic activities are conducted, ensuring the protection of human rights for workers, communities, and end-users [17].

The feedback on the social taxonomy draft report also validates the merits of social taxonomy, as 65 percent of respondents mentioned that it strengthens the definition and measurement of social investment. Additionally, 62 percent stated that it supports investment in social sustainability and economic activities, while 47 percent also noted that it addresses social and human rights opportunities and risks for investors [[22], p. 13]. Still, the effectiveness of the social taxonomy in aiding thorough measurement is a subject of debate. Some argue that it helps by establishing clear guidelines and criteria, making it easier for financial actors to align their measurement practices with recognized objectives (see Table 2). Others suggest that the inherent complexities and subjectivities in measuring social sustainability, compared to environmental aspects, pose challenges that the current frameworks in social taxonomy may not fully address when it comes to crucial social issues [for details, [22], pp. 25–26].

In February 2022, the "final report on social taxonomy" is published based on the feedback received from 268 respondents, addressing the alignment of the social taxonomy structure with the environmental taxonomy and other legislative projects, such as the corporate sustainability reporting directive (CSRD). In this regard, companies that significantly contribute to social sustainability and wish to attract social investors must report on their fulfillment of standardized criteria (see Fig. 4). More precisely, this report emphasizes the fact that this subgroup of taxonomy explicates the positive impact of economic activities that substantially contribute to the following three objectives: (i) decent work; (ii) adequate living standards and well-being for end-users; and (iii) inclusive and sustainable communities and societies [17, 22].

Table 2 Social objectives of the EU Taxonomy

Objectives of stakeholder groups	Sub-objective	Core focus	Substantial contribution types	Target SDGs
Decent work (including value-chain workers)	Promoting decent work	Strengthen social dialogue Ensure predictable and transparent pay levels Avoid precarious working conditions Provide excellent health and safety for workers Run extensive programs for skills job transition, employment generation, and lifelong learning Provide social protection End forced labor and exploitation of work End child labor	I. Avoiding and addressing negative impacts II. Enabling activities	1, 4, 5, 8, 10, 17
	Promoting equality and non-discrimination at work	Ensure equal employment opportunities for women Gender-inclusive employment strategies for women Reduce gender pay gaps Ensure living income for farmers		
	Ensuring respect for human rights and workers' rights in the value chain	Conduct risk-based due diligence		

Table 2 (continued)

Objectives of stakeholder groups	Sub-objective	Core focus	Substantial contribution types	Target SDGs
Adequate living standards and well-being for end-users	Ensure healthy and safe products and services	Maintain the health and safety standards of products and services	I. Avoiding and addressing negative impacts II. Enhancing the positive impact inherent in economic activity III. Enabling activities	2, 3, 4, 6, 7, 11, 12
	Design durable and repairable products	Make spare parts readily available Ensure spare parts are compatible with competitors' products Offer services for seamless multimodal experiences		
	Provide cybersecurity and protect personal data and privacy	Incorporate safeguards for personal data and privacy		
	Engage in responsible marketing practices	Enable consumers to make informed choices Avoid directing consumers towards products or services not in their best interest		
	Ensure access to quality healthcare services and products	Ensure high standards of quality and safety in healthcare Facilitate easy accessibility to healthcare services for all individuals		
	Improve access to healthy and nutritious food	Ensure access to healthy and nutritious food, especially for children		
	Improve access to good-quality drinking water	Ensure the availability of clean drinking water		
	Improve access to good-quality housing	Ensure access to better housing		
	Improve access to education and lifelong learning	Ensure access to quality education		

Table 2 (continued)

Objectives of stakeholder groups	Sub-objective	Core focus	Substantial contribution types	Target SDGs
Inclusive and sustainable communities and societies	Promoting equality and inclusive growth	Enhance access to economic infrastructure Provide childcare support Ensure inclusion of people with disabilities Create and retain decent jobs Support local employment and suppliers Promote equality	Avoiding and addressing negative impact Enhancing the positive impact inherent in economic activity Enabling activities	5, 8, 9, 16, 17
	Supporting sustainable livelihoods and land rights	Promote community-driven development with decentralized decision-making Address negative impacts on communities affected by business operations Conduct meaningful consultations with communities. Obtain free, prior, and informed consent from indigenous peoples before implementing any economic activities that may affect them		
	Ensure respect for the human rights of affected communities	Implement a 'free, prior, and informed consent' process when there is a risk that indigenous groups are affected		

Source: Authors' elaboration

*Partially adapted from Social Taxonomy Financial Report [22]

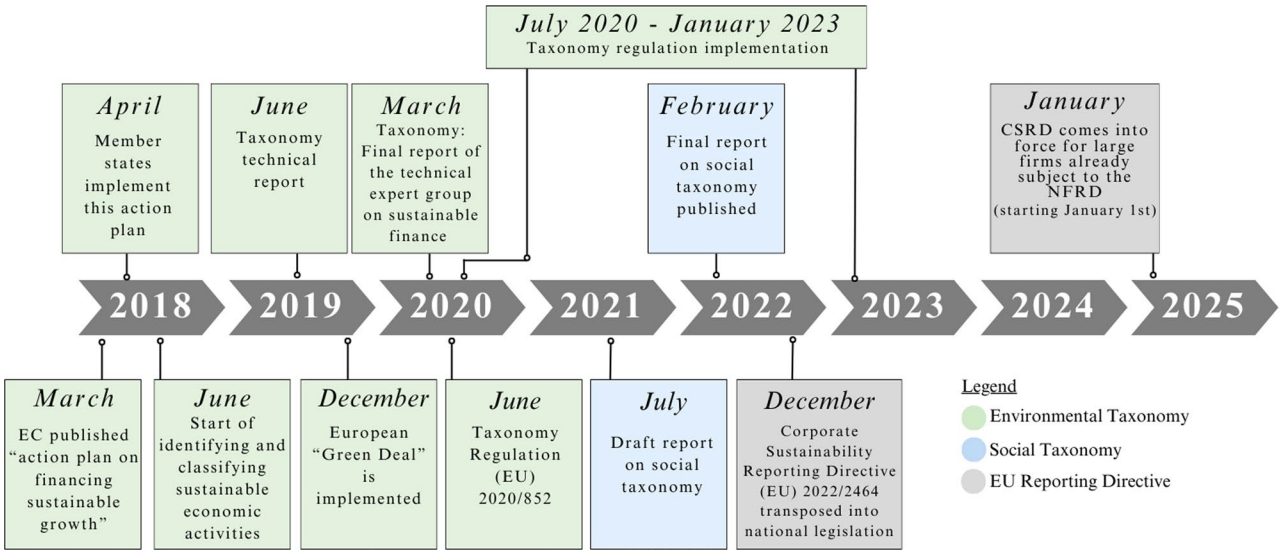

Fig. 2 Development and implementation of EU sustainability taxonomy regulations. Source: Authors' elaboration

3.2 EU taxonomy framework and social taxonomy

This section explains the development of the EU taxonomy and social taxonomy. Figure 2 depicts a brief overview of the regulatory developments, which have been in force since 2018, that led to the formation of the EU taxonomy and social taxonomy.

The EC has three expert groups for the regulations of sustainability-related taxonomies: i) the technical expert group on sustainable finance (TEG),[2] comprising 32 organizations including sector associations, companies, trade unions, non-governmental organizations (NGOs), universities, and research institutes; (ii) member states expert group on sustainable finance,[3] comprising 27 European countries and European public entities; and (iii) the platform on sustainable finance,[4] comprising experts from civil society, the private sector, and public institutions.

In March 2018, the EC published its "action plan on financing sustainable growth",[5] drawing on the recommendations of the expert group on sustainable finance. This plan proposed concrete actions that contribute to achieving the SDGs[6] and the Paris Agreement objectives.[7] More precisely, in April 2018, the EC involved EU member states expert groups to support not only the implementation of this plan but also to promote the transformation in their countries. Since June 2018, the EC has been engaged in extensive technical work with the goal of identifying and classifying sustainable economic activities. This work is based on scientific and evidence-based screening criteria and aims to determine economic activities that make a significant contribution to one of the six environmental objectives.[8] At the same time, it seeks to avoid causing significant harm to other environmental objectives, as outlined in the taxonomy regulation

[2] For details, see the document 'Commission Technical Expert Group (TEG)' on Sustainable Finance at https://finance.ec.europa.eu/document/download/7c5ea78a-dc53-428c-ae80-2e44a6ff252d_en?filename=sustainable-finance-teg-frequently-asked-questions_en.pdf.

[3] For details, see the document 'Member States Expert Group on Sustainable Finance' at https://ec.europa.eu/transparency/expert-groups-register/core/api/front/expertGroupAddtitionalInfo/48684/download.

[4] For details, see the document 'Commission Platform on Sustainable Finance' at https://finance.ec.europa.eu/document/download/1fbf358a-0ca0-4745-a884-4699f51bd82a_en?filename=201001-sustainable-finance-platform-faq_en.pdf.

[5] For details, see the document 'Action Plan: Financing Sustainable Growth' at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097.

[6] For details regarding the 'Paris Agreement' and the '2030 Agenda for Sustainable Development', see the document published by the UN General Assembly in September 2015 at https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf.

[7] For details regarding the 'Paris Agreement', refer to the policy paper published by UN Framework Convention on Climate Change (UNFCCC) in December 2015. Available at https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf.

[8] According to 'Article 9' of the proposed taxonomy regulation, the six environmental objectives are: (i) climate change mitigation; (ii) climate change adaptation; (iii) sustainable use and protection of water and marine resources; (iv) transition to a circular economy, waste prevention and recycling; (v) pollution prevention and control; (vi) protection of healthy ecosystems. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852.

[19]. This technical work has been carried out by the EC's "technical expert group (TEG)" on sustainable finance, which completed its mandate in September 2020. In June 2019, the TEG's first "technical report[9]" was published, summarizing the findings and recommendations on the EU taxonomy. An updated final report was released in March 2020, incorporating feedback from stakeholders [35].

Moreover, in December 2019, the EC implemented the "European green deal", which is a new growth strategy aligned with the Paris Agreement. In this deal, sustainable financial practices play a key role in delivering the policy objectives, as demonstrated by the action plan on sustainable investment. This means the financial sector can support in a sustainable manner by reorienting private investments towards sustainable businesses and technologies in the long-term. Therefore, for investment, the common language that potential investors can use is the EU taxonomy regulation, which aims to help identify projects and economic activities that have a significant positive impact on EU climate and environmental goals. To facilitate the process, in June 2020, the taxonomy regulation was published in the official journal of the EU, and it was implemented in various stages from July 2020 to January 2023 for an indeterminate period (see Fig. 2). This regulation mainly focuses on enforcing Article 3, which sets "criteria for environmentally sustainable economic activities", Article 8, which addresses the "transparency of undertakings in non-financial statements", and Article 9, which specifies the "environmental objectives" [36]. More precisely, the EU environmental taxonomy comprises four overarching conditions that economic activity must meet in order to be recognized as an environmentally sustainable economic activity: (i) making a substantial contribution to at least one of the six environmental objectives; (ii) doing no significant harm to the other five environmental objectives; (iii) complying with the minimum safeguards, which are aligned with the "*OECD guidelines for multinational enterprises*[10]", the "international bill of human rights[11]", the "United Nations (UN) guiding principles on business and human rights[12]", and the "ILO declaration on fundamental principles and rights at work[13]"; and (iv) complying with the technical screening criteria, which is both substantial contribution and doing no significant harm. Thus, during all these years the main focus of the EC has been to establish a framework that primarily facilitates sustainable investments towards environmental economic activities.

3.3 New paradigm: from EU environmental taxonomy to EU social taxonomy

As shown in Fig. 3, this section explains how the EU environmental taxonomy serves as the initial foundation for the development of the EU social taxonomy.

In the environmental taxonomy regulation criteria, the social and governance aspects are the only features that are slightly covered by the third criterion "inclusion of minimum safeguards" (see EU Taxonomy Article 18(1)[14]), while the main focus is dedicated to environmental considerations. The EC has realized that there is very limited inclusion of social sustainability aspects in the EU taxonomy [22]. Therefore, in 2020, the EC tasked the platform on sustainable finance with expanding the taxonomy to encompass social objectives (see Fig. 2). As part of this initiative, a dedicated subgroup is formed and assigned the following two main tasks: (i) to extend the EU taxonomy framework by including social objectives, as per Article 26(2)(b), which is to publish a report explaining the provisions that would be essential to extend the scope of the EU taxonomy regulation considering other sustainability objectives beyond environmentally sustainable economic activities, such as social objectives, and (ii) to provide guidance to the EC regarding the practical implementation of Article 18 "minimum safeguards".

According to the EU Platform on Sustainable Finance, the social taxonomy can be used as "a tool to direct capital flows towards activities and companies that make substantial social contributions" [[22], p. 28]. More precisely, the purpose

[9] For further details, see the 'Taxonomy Technical Report' (2018) at https://finance.ec.europa.eu/system/files/2019-06/190618-sustainable-finance-teg-report-taxonomy_en.pdf.
Also, for further details and statistics regarding the feedback summary from 257 respondents, refer to the following link: https://ec.europa.eu/eusurvey/publication/taxonomy-feedback-first-round-climate-change-mitigation-activities?surveylanguage=en.

[10] For details, see 'OECD guidelines for multinational enterprises' published by the OECD in 2011. Available at http://dx.doi.org/10.1787/9789264115415-en.

[11] Which are based on: i) the 'Universal Declaration of Human Rights (UDHR)' published by the UN General Assembly in 1948. Available at https://www.un.org/sites/un2.un.org/files/2021/03/udhr.pdf; and ii) the 'International Covenant on Civil and Political Rights' published by the UN General Assembly in 1966. Available at https://www.ohchr.org/sites/default/files/ccpr.pdf.

[12] For details, see the 'Guiding Principles on Business and Human Rights' published by the UN in 2011. Available at https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf.

[13] For details, see the report by the 'International Labor Organization (IL0)' adopted in 1998 and amended in 2022. Available at https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/normativeinstrument/wcms_716594.pdf.

[14] 'Regulation (EU) 2020/852 of the European Parliament and of the Council' of 18 June 2020. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852.

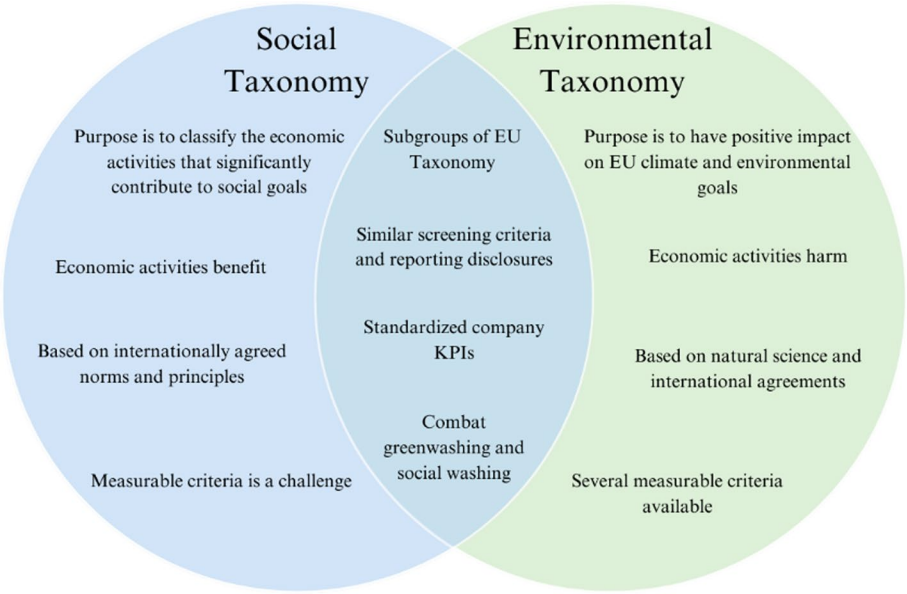

Fig. 3 Taxonomy conceptual framework. Source: Authors' elaboration

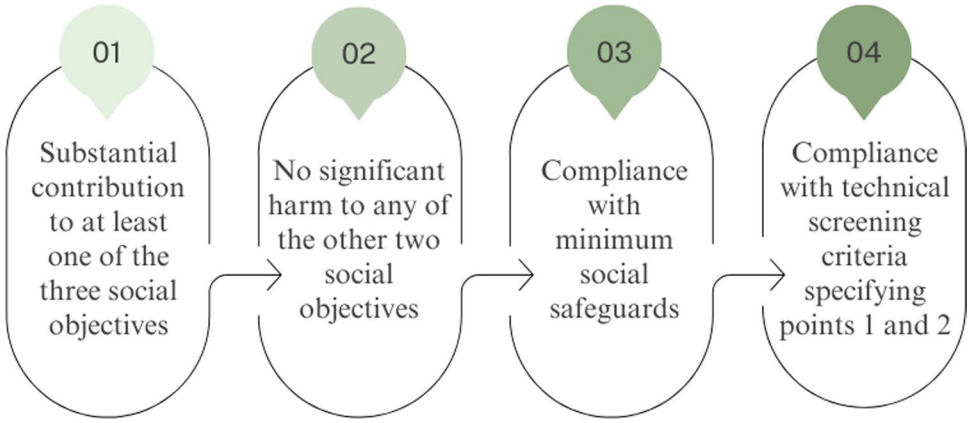

Fig. 4 Criteria for EU social taxonomy. Source: Authors' elaboration

of developing the EU social taxonomy is: (i) to direct capital flows to activities that substantially contribute to human rights; and (ii) to direct capital flows to investments that improve working and living conditions, especially for the disadvantaged. There are various socio-economic activities, such as education, social housing, healthcare, and efforts to mitigate negative (and maximize positive) outcomes for the three main affected stakeholder groups, which are workers, communities, and end-users [22]. The EU social taxonomy follows the same criteria steps as the environmental taxonomy, with the aim of allowing investors to choose between economic activities that only contribute to social objectives, or those that contribute to both social and environmental objectives. The process includes the same "technical screening criteria" to assess the economic activities, which are: (i) substantially contributing to at least one of the three social objectives,[15] which are decent work (including value-chain workers), adequate living standards and well-being for end-users, and inclusive and sustainable communities and societies; (ii) not causing any significant harm to any of the other social objectives; and (iii) complying with the minimum safeguard (see Fig. 4).

[15] These objectives are made by considering the following documents: i) the 'Universal Declaration of Human Rights'; ii) the 'International Covenant on Economic, Social and Cultural Rights'; iii) the 'International Covenant on Civil and Political Rights'; iv) the 'International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work'; v) the 'ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy'; vi) the 'European Convention on Human Rights'; vii) the 'European Social Charter'; viii) the 'Charter of Fundamental Rights of the European Union'; ix) the 'European pillar of social rights'; x) the 'Sustainable Development Goals (SDGs)'; xi) the 'UN Guiding Principles on Business and Human Rights (UNGPs)'; xii) the 'UN Global Compact'; and xiii) the 'Organization for Economic Cooperation and Development (OECD) guidelines for multinational enterprises (MNEs)'.

As briefly outlined in Table 2, each of the social objectives can be further categorized based on the following types of substantial contributions. The first type is a substantial contribution that "addresses and avoids" negative impacts on consumers, workers, and communities, such as training workers for transition, or occupational health and safety. The second type is "enhancing the positive impact inherent in an economic activity", which includes activities with clear social benefits for consumers and communities, for instance providing affordable pharmaceuticals to indigenous groups of people. The third type is "enabling activities" that enable positive social performance in other activities, for example, social auditing services helping to reduce negative effects on value-chain workers. Furthermore, each social objective is divided into various sub-objectives [22]. However, it is important to note that economic activity does not need to make a significant substantial contribution to all the sub-objectives to qualify as sustainable [22]. Table 2 also explains the general correlation between the social objectives and the SDGs.

In accordance with Article 8 of the taxonomy regulation, companies are required to disclose their social and/or environmental contributions through non-financial reporting directives (NFRD), which from 2025 will be replaced by the CSRD (See Fig. 2) [22, 36]. The standards adopted by the Commission for CSRD are based on technical advice from the European Financial Reporting Advisory Group (EFRAG) [38]. The CSRD reporting follows the European Sustainability Reporting Standards (ESRS), which are highly aligned with the International Sustainability Standards Board (ISSB) as well as the Global Reporting Initiative (GRI). Table 3 shows the scope of these disclosures and their alignment with the ESG framework and the SDGs. However, at the moment, there are no authoritative guidelines on how firms can implement and measure their contribution to achieving the SDGs [22]. Therefore, it is important for the commission's advisory group to develop a framework that helps companies report their impacts and clarify how they align with the SDGs and other relevant standards, such as the UN Guiding Principles on Business and Human Rights (UNGP), the International Labour Organization (ILO) standards, etc. Starting in 2025, the publication of CSRD for the year 2024 is only mandatory for companies that meet the following criteria: (i) employ more than 500 employees, (ii) have a turnover of 40 million euros, and/or (iii) have total assets of 20 million euros [37, 38]. The purpose of the CSRD is to provide necessary information to understand how sustainability issues affect the companies and the impact these companies have on society and the environment [22]. Thus, the primary goal of this initiative is to address issues related to social or greenwashing.

Moreover, the companies have to report standardized KPIs for the EU taxonomy. The main KPIs for the non-financial undertaking are capital expenditure (CapEx), operational expenditure (OpEx), and turnover. In financial companies, the main KPI is the green asset ratio (GAR) [for details see, [39]]. The standardized disclosure of these KPIs concerning the social or environmental contributions of companies helps investors make informed financial decisions [40]. Table 4 provides a brief overview of each KPI and how to link it with social or environmentally sustainable economic activities.

Despite the fact that the environmental taxonomy is considered a "role model" for developing a social taxonomy, there are still three major differences between the social and environmental taxonomies (see Fig. 3). First, the main aim of environmental economic activities is to mitigate or reverse negative environmental impacts through carbon capture or ecosystem restoration. While almost all economic activities can contribute substantially to positive social impacts in the form of job creation, training, social security, and by providing socially beneficial services and products. Second, the environmental taxonomy is based on natural science and international agreements like the Paris Agreement. In contrast, a social taxonomy cannot be based on science. Instead, the social objectives are grounded in internationally agreed norms and principles developed from 13 different documents, such as the OECD guidelines for multinational enterprises and UN guiding principles on business and human rights (UNGPs) [22]. Third, developing measurable criteria for a social taxonomy may be initially difficult compared to an environmental taxonomy because there are many scientific ways to quantify environmental economic activity, while social sustainability is typically described qualitatively. However, advancements like the EU's social scoreboard,[16] SDG indicators,[17] and World Bank Group (WBG) scorecard[18] can offer promising quantifiable indicators to assess social impact [22].

[16] The 'EU's social scoreboard' is established in 2021 based on 20 principles. Currently, it is used to assess the employment as well as social performances of participating EU countries. For further details, see https://ec.europa.eu/eurostat/web/european-pillar-of-social-rights/information-data.

[17] 'SDG indicators' are established in 2017. Currently, there are 231 unique indicators to assess the social and/or environmental impact. For further details, see https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202023%20refinement_Eng.pdf.

[18] The World Bank Group scorecard is established in 2024. At present, there are 22 indicators align with the five verticals: people, prosperity, planet, infrastructure, and digital, as well as cross-cutting themes. For further details, see https://documents1.worldbank.org/curated/en/099121223173511026/pdf/BOSIB1ab32eaff0051a2191da7db5542842.pdf.

Table 3 Overview of CSRD/ESRS and GRI Standards Integration

Factors	CSRD	GRI
Standards	ESRS	GRI Standards
Scope	Europe	Global
Applicability	Compulsory for companies within the EU	Voluntary
Standard Indicators		

ESG framework	ESRS	GRI	Target SDGs* universal standards**
General	ESRS 2: General disclosures	GRI 2: General disclosures 2021	5, 8, 10, 16
Environment	ESRS E1: Climate change ESRS E2: Pollution ESRS E3: Water and marine resources ESRS E4: Biodiversity and ecosystems ESRS E5: Resources use and circular economy	GRI 301: Materials	8, 12
		GRI 302: Energy	7, 8, 12, 13
		GRI 303: Water and effluents	6, 12
		GRI 304: Biodiversity	6, 14, 15
		GRI 305: Emissions	3, 12, 13, 14, 15
		GRI 306: Waste	3, 6, 8, 11, 12, 15
		GRI 307: Environmental compliance	16
		GRI 308: Supplier environmental assessment	
Social	ESRS S1: Own workforce ESRS S2: Workers in the value chain ESRS S3: Affected communities ESRS S4: Consumers and end-users	GRI 401: Employment	3, 5, 8, 10
		GRI 402: Labor/management relations	8
		GRI 403: Occupational health and safety	3, 8, 16
		GRI 404: Training and education	4, 5, 8, 10
		GRI 405: Diversity and equal opportunity	5, 8, 10
		GRI 406: Non-discrimination	5, 8
		GRI 407: Freedom of association and collective bargaining	8
		GRI 408: Child labor	5, 8, 16
		GRI 409: Forced or compulsory labor	5, 8
		GRI 410: Security practices	16
		GRI 411: Rights of indigenous peoples	2
		GRI 413: Local communities	1,2
		GRI 414: Supplier social assessment	5, 8, 16
		GRI 415: Public policy	16
		GRI 416: Customer health and safety	16
		GRI 417: Marketing and labeling	12, 16
		GRI 418: Customer privacy	16
Governance	ESRS G1: Business conduct	GRI 201: Economic performance	8, 9, 13
		GRI 202: Market presence	5, 8
		GRI 203: Indirect economic impacts	5, 8, 9, 11
		GRI 204: Procurement practices	8
		GRI 205: Anti-corruption	16
		GRI 206: Anti-competitive behavior	16
		GRI 207: Tax 2019	1, 10, 17

Source: [41, 42]

*1: SDG 1 (No Poverty); 2: SDG 2 (Zero Hunger); 3: SDG 3 (Good Health and Well-being); 4: SDG 4 (Quality Education); 5: SDG 5 (Gender Equality); 6: SDG 6 (Clean Water and Sanitation); 7: SDG 7 (Affordable and Clean Energy); 8: SDG 8 (Decent Work and Economic Growth); 9: SDG 9 (Industry, Innovation, and Infrastructure); 10: SDG 10 (Reduced Inequalities); 11: SDG 11 (Sustainable Cities and Communities); 12: SDG 12 (Responsible Consumption and Production); 13: SDG 13 (Climate Action); 14: SDG 14 (Life Below Water); 15: SDG 15 (Life on Land); 16: SDG 16 (Peace, Justice, and Strong Institutions); 17: SDG 17 (Partnerships for the Goals)

**For details, see linking the SDGs and the GRI Standards (available at https://www.globalreporting.org/public-policy/sustainable-development/integrating-sdgs-into-sustainability-reporting/)

Table 4 Key performance indicators (KPIs) for taxonomy-aligned economic activities

Companies type	KPIs	Description	Perspective
Non-financial undertaking	CapEx	This KPI signifies the percentage of capital expenditure for an economic activity that is already aligned with taxonomy standards or is part of a credible plan to achieve taxonomy alignment	It provides a dynamic and forward-looking insight into companies' strategies for transforming their business activities
	OpEx	This KPI signifies the percentage of operating expenditure of the taxonomy-aligned activities or the CapEx plan	It provides an understanding of companies' day-to-day operating expenses associated with taxonomy-aligned activities
	Turnover	This KPI signifies the percentage of net turnover derived from services or products that are aligned with the taxonomy standards	It provides a static view of the companies' contribution to social or environmental goals
Financial undertaking	GAR	The GAR signifies the proportion of a credit institution's (or lenders') assets financing and investment in taxonomy-aligned economic activities compared to total covered assets	It provides an understanding of how extensively financial institutions support taxonomy-aligned activities

Source: Authors' elaboration

4 Discussion of results

This research study highlights the critical role that the EU social taxonomy plays in advancing sustainable development within the EU. By integrating social objectives into the existing EU taxonomy framework, there has been a significant shift in how sustainable investments are evaluated and directed. This expanded taxonomy framework now provides a robust mechanism for channeling financial resources toward activities that not only promote environmental sustainability but also address crucial social issues such as human rights, decent work, and social inclusion. This dual focus aligns closely with the broader goals of the UN SDGs, particularly those related to reducing inequalities, fostering inclusive growth, and promoting well-being for all.

One of the key insights from the findings is the potential of the EU social taxonomy to harmonize the assessment and measurement of social sustainability across different sectors. The standardized criteria introduced by the taxonomy offer investors clear guidelines on what constitutes socially sustainable activities, thereby reducing ambiguity and enhancing transparency in investment decisions. However, the study also highlights challenges in implementing these social objectives, particularly in relation to the complexity and subjectivity involved in measuring social impact. Unlike environmental metrics, which are often more quantifiable, social sustainability involves a broader range of qualitative factors, making it difficult to establish universally applicable benchmarks.

Furthermore, the study reveals that while the EU social taxonomy has effectively expanded the scope of sustainable investment, its practical application is still in the early stages. Many businesses and investors are struggling with the new reporting requirements under the CSRD, which demands more comprehensive disclosures of social and environmental impacts. This highlights the need for clearer guidelines and stronger support from regulatory bodies to facilitate effective implementation of these new standards. For the taxonomy to achieve its full potential, it must be supported by a robust governance framework that ensures compliance and accountability. Continuous monitoring and the development of advanced tools and methodologies for measuring social impacts are also essential for maximizing the effectiveness of the social taxonomy.

5 Conclusion and practical implications

This paper begins with a thorough examination of the evolution of the social taxonomy concept, followed by a chronological presentation of the regulatory advancements that contributed to the establishment of the EU taxonomy and social taxonomy. Furthermore, this research shows the role of the EU environmental taxonomy as the initial framework for the development of the EU social taxonomy and highlights three key distinctions between them in terms of objectives, foundations, and measurability. This study presents the main KPIs for both non-financial and financial companies regarding taxonomy-aligned economic activities and outlines sub-objectives, core focus areas, and types of substantial contributions for each of the three social objectives of the EU taxonomy.

The main aim of this paper is to provide practitioners with a comprehensive understanding of the evolution of social taxonomy and its connection to EU environmental taxonomy, as depicted in Fig. 3. Furthermore, it demonstrates the application of EU social taxonomy criteria in determining the social sustainability of an activity, as shown in Fig. 4. Additionally, practitioners are informed about the influence of social objectives on relevant SDGs, as mentioned in Table 2.

6 Limitations and future research directions

The development of the EU's social taxonomy represents a critical step towards integrating social considerations into sustainable finance frameworks. However, several challenges and opportunities lie ahead. First, there is a pressing need to develop standardized and adaptable indicators that reflect the impacts of a social taxonomy across various sectors

and contexts. This should include a participatory and transparent process that ensures broad stakeholder engagement, potentially through public consultations, expert panels, and community involvement. Second, integrating the social taxonomy with ESG frameworks, particularly focusing on social and governance (SG) aspects, and aligning it more precisely with international standards such as the UN SDGs 169 targets can enhance its global relevance and applicability (see Table 3). Third, the EC expert group should focus on refining and expanding the taxonomy to cover crucial social issues 'in due course', and developing the rationale for prioritizing the objectives and sub-objectives used to assess social sustainability, including labor rights, human rights, diversity, and inclusion, while also considering cultural and contextual differences across Europe and beyond. Fourth, researchers should explore standardized innovative methodologies and indicators for measuring and evaluating the social impact of investments or economic activities, as well as mechanisms for stakeholder engagement and consultation. This includes developing robust frameworks for companies to report on double materiality, addressing both financial sustainability risks (outside-in) and sustainability impacts (inside-out). Case studies of companies successfully implementing double materiality could provide valuable insights. Fifth, there is a need to integrate social criteria with environmental objectives in a harmonized manner and ensure transparency, accountability, and ongoing monitoring of the taxonomy framework. To maintain a balance between the environmental and social taxonomies, reciprocal minimum safeguards should be established, ensuring that environmental criteria are incorporated into the social taxonomy, similar to the way social and governance-related minimum safeguards are part of the environmental taxonomy [22]. By addressing these research directions, policymakers and scholars can contribute to the development of a robust and comprehensive EU social taxonomy that promotes social sustainability and responsible investment practices, thus fostering a more sustainable and resilient financial system for future generations.

Author contributions All authors have contributed to the manuscript, and have read and agreed to the published version of the manuscript. conceptualization and design: A.M., R.F., and H.G.S. methodology: A.M. and R.F. original draft writing: R.F. and A.M. writing review and edit: A.M. and R.F. preparing figures and tables: R.F. and T.G. proofreading: T.G. and H.G.S.

Data availability The data used for this research were extracted from Scopus, Web of Science, and government websites (for details, see Appendix table 5).

Declarations

Conflict of interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix

See Table 5.

Table 5 Search protocol, list of database sources, and URLs

Grey literature databases			
Web page name	Key terms	Applied filters	Links
European Commission	"social taxonomy" "Social taxonom*"	Only documents published in "English"	https://commission.europa.eu/index_en
Eurosif			https://www.eurosif.org/
UNPRI			https://www.unpri.org/
IISD			https://www.iisd.org/
Total documents retrieved = 24			
Scholarly databases			
Databases	Key terms	Applied filters	Search query/query link
Scopus	"social taxonomy" "Social taxonom*"	Articles 'ar' only published in "English"	(TITLE-ABS-KEY ("Social taxonom*")) OR (TITLE-ABS-KEY ("social taxonomy")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (DOCTYPE, "ar"))
Web of Science			"social taxonomy" (All Fields) OR "social taxonom*" (All Fields) https://www.webofscience.com/wos/woscc/summary/45041081-7989-4866-b9df-bfc73a13fd15-c89fc294/relevance/1
Total documents retrieved = 19			

Authors' Elaboration

References

1. Aizawa, M., Gouett, M., Rahim, S., Saravade, V., & Uzsoki, D. Principles-based social taxonomy for sustainable investing. 2022. https://www.iisd.org/system/files/2022-08/social-taxonomy-sustainable-investing.pdf
2. Adams RJ, Smart P, Huff AS. Shades of grey: guidelines for working with the grey literature in systematic reviews for management and organizational studies. Int J Manag Rev. 2017. https://doi.org/10.1111/ijmr.12102.
3. Paez A. Gray literature: an important resource in systematic reviews. J Evid Based Med. 2017. https://doi.org/10.1111/jebm.12266.
4. Khirfan L, Mohtat N, Peck M. A systematic literature review and content analysis combination to "shed some light" on stream daylighting (Deculverting). Water Security. 2020. https://doi.org/10.1016/j.wasec.2020.100067.
5. López-Illescas C, de Moya-Anegón F, Moed HF. Coverage and citation impact of oncological journals in the *Web of Science* and *Scopus*. J Informet. 2008. https://doi.org/10.1016/j.joi.2008.08.001.
6. Guz AN, Rushchitsky JJ. Scopus: a system for the evaluation of scientific journals. Int Appl Mech. 2009. https://doi.org/10.1007/s10778-009-0189-4.
7. Chadegani AA, Salehi H, Yunus MM, Farhadi H, Fooladi M, Farhadi M, Ebrahim NA. A comparison between two main academic literature collections: web of science and scopus databases. Asian Soc Sci. 2013. https://doi.org/10.5539/ass.v9n5p18.
8. Cravens H. Recent controversy in human development: a historical view. Hum Dev. 1987. https://doi.org/10.1159/000273190.
9. Imhoff R, Koch A, Flade F. (Pre) occupations: a data-driven model of jobs and its consequences for categorization and evaluation. J Exp Soc Psychol. 2018. https://doi.org/10.1016/j.jesp.2018.04.001.
10. Alimi S. "A tale of two cities": cemetery heterotopia and spatial relations in Lagos City. OMEGA—J Death Dying. 2022. https://doi.org/10.1177/00302228221135306.
11. Keita SOY, Boyce AJ. "Race": Confusion about zoological and social taxonomies, and their places in science. Am J Hum Biol. 2001. https://doi.org/10.1002/ajhb.1095.
12. Wang, S., Wang, W., Zhuang, Y., & Fei, X. An ontology evolution method based on folksonomy. J Appl Res Technol. 2015. http://www.redalyc.org/articulo.oa?id=47439895003. Accessed 18 Apr 2024.
13. Yoon SY, Ravulaparthy SK, Goulias KG. Dynamic diurnal social taxonomy of urban environments using data from a geocoded time use activity-travel diary and point-based business establishment inventory. Trans Res Part A: Policy Pract. 2014. https://doi.org/10.1016/j.tra.2014.01.004.
14. Gouda F. Teaching Indonesian girls in Java and Bali, 1900–1942: Dutch progressives, the infatuation with 'oriental' refinement, and 'western ' ideas about proper womanhood [1]. Women's History Rev. 1995. https://doi.org/10.1080/09612029500200072.
15. Och, M. 2020 Sustainable finance and the eu taxonomy regulation—hype or hope? SSRN Scholarly Paper 3738255. 2020. https://doi.org/10.2139/ssrn.3738255
16. Sica F, Tajani F, Sáez-Pérez MP, Marín-Nicolás J. Taxonomy and indicators for ESG investments. Sustainability. 2023. https://doi.org/10.3390/su152215979.
17. Zetzsche, D. A., Bodellini, M., & Consiglio, R. Towards a European social taxonomy: a scorecard approach. SSRN Scholarly Paper. 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4218874
18. Meek VL, O'Neill A. Organizational change in Australian higher education: process and outcome. Australian Educ Res. 1990. https://doi.org/10.1007/BF03219475.
19. Platform on Sustainable Finance. Draft report by Subgroup 4: Social taxonomy. 2021. https://ec.europa.eu/info/publications/210712-sustainable-finance-platform-draft-reports_en. Accessed 18 Apr 2024.
20. Schneeweiß, A. Human Rights Are Investors' Obligations. A proposal for a social taxonomy for sustainable investment. SÜDWIND e.V. Institut Für Ökonomie Und Ökumene Kaiserstraße 201. 2020.
21. European Parliament. Social and employment policy: general principles. 2024. https://www.europarl.europa.eu/factsheets/en/sheet/52/social-and-employment-policy-general-principles. Accessed 18 Apr 2024.
22. Platform on Sustainable Finance. Final report on social taxonomy. Platform on sustainable finance. 2022. https://commission.europa.eu/document/d07e1f1e-3a1f-4d55-add4-a130f26b33e3_en. Accessed 18 Apr 2024.
23. Eizenberg E, Jabareen Y. Social sustainability: a new conceptual framework. Sustainability. 2017. https://doi.org/10.3390/su9010068.
24. Kosmopoulos P. Chapter 10—The way forward for sustainable development. In: Kosmopoulos P, editor. Planning and management of solar power from space. Academic Press; 2024. p. 173–89.
25. Dempsey N, Bramley G, Power S, Brown C. The social dimension of sustainable development: defining urban social sustainability. Sustain Dev. 2011. https://doi.org/10.1002/sd.417.
26. Littig B, Griessler E. Social sustainability: a catchword between political pragmatism and social theory. Int J Sustain Dev. 2005. https://doi.org/10.1504/IJSD.2005.007375.
27. Vallance S, Perkins HC, Dixon JE. What is social sustainability? A clarification of concepts. Geoforum. 2011;42(3):342–8. https://doi.org/10.1016/j.geoforum.2011.01.002.
28. Brehmer M, Podoynitsyna K, Langerak F. Sustainable business models as boundary-spanning systems of value transfers. J Clean Prod. 2018. https://doi.org/10.1016/j.jclepro.2017.11.083.
29. Bai C, Kusi-Sarpong S, Badri Ahmadi H, Sarkis J. Social sustainable supplier evaluation and selection: a group decision-support approach. Int J Prod Res. 2019. https://doi.org/10.1080/00207543.2019.1574042.
30. Cullen UA, De Angelis R. Circular entrepreneurship: a business model perspective. Resour, Conserv Recycling. 2021. https://doi.org/10.1016/j.resconrec.2020.105300.
31. Nath SD, Eweje G, Barua S. Drivers and barriers for implementing social sustainability in supply chains: a qualitative investigation of a developing country's multi-tier suppliers. Int J Logist Manag. 2023. https://doi.org/10.1108/IJLM-03-2022-0121.
32. Edwards J, Xia H, Li QJ, Wells P, Milisavljevic-Syed J, Gallotta A, Salonitis K. Achieving net zero neighborhoods: a case study review of circular economy initiatives for South Wales. J Clean Prod. 2024. https://doi.org/10.1016/j.jclepro.2024.143117.

33. European Commission. Financing a sustainable European economy. High-level expert group on sustainable finance (HLEG). 2018. https://finance.ec.europa.eu/publications/high-level-expert-group-sustainable-finance-hleg_en. Accessed 18 Apr 2024.
34. Eurosif. Eurosif Statement on the platform on sustainable finance's draft report on a social taxonomy. 2021. https://www.eurosif.org/news/social-taxonomy-and-extended-environmental-taxonomy-eurosif-position/. Accessed 18 Apr 2024.
35. EU technical expert group on sustainable finance (TEG). Taxonomy technical report. European commission. 2019. https://finance.ec.europa.eu/system/files/2019-06/190618-sustainable-finance-teg-report-taxonomy_en.pdf. Accessed 18 Apr 2024.
36. European Commission. Regulation (EU) 2020/852 OF the European parliament and of the council. Off J Euro Union. 2020. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852. Accessed 18 Apr 2024.
37. European Commission. Directive 2013/34/EU of the European parliament and of the council. Off J Euro Union. 2013. https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:182:0019:0076:EN:PDF. Accessed 18 Apr 2024.
38. European Commission. Directive (EU) 2022/2464 of the european parliament and of the council. Off J Euro Union. 2022. https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:182:0019:0076:EN:PDF. Accessed 18 Apr 2024.
39. European Commission. Annexes to the comission delegated regulation (EU). 2021. https://ec.europa.eu/finance/docs/level-2-measures/taxonomy-regulation-delegated-act-2021-4987-annex-1-5_en.pdf. Accessed 18 Apr 2024.
40. European Commission. Commission delegated regulation (EU) 2021/2178. 2021. http://data.europa.eu/eli/reg_del/2021/2178/oj/eng. Accessed 18 Apr 2024.
41. European Commission. (n.d.). Q&A adoption of European Sustainability Reporting Standards. https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_4043. Accessed 25 July 2024
42. GRI. (n.d.). GRI standards. https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/. Accessed 25 July 2024