Exploring Heterogeneity in Social Risk Attentiveness

Fabio Pizzutilo Dept of Economics, Management, and Business law University of Bari Aldo Moro <u>fabio.pizzutilo@uniba.it</u>

Massimo Mariani Dept of, Management, Finance and Technology University of LUM Giuseppe Degennaro <u>mariani@lum.it</u>

Domenico Frascati Department of Management, Finance and Technology LUM Giuseppe Degennaro University <u>frascati.phdstudent@lum.it</u>

Alessandra Caragnano Dept of, Management, Finance and Technology University of LUM Giuseppe Degennaro <u>caragnano@lum.it</u>

Abstract

Social sustainability plays a fundamental role in modern economic development. It affects companies and industries through many channels, and yet it is difficult to quantify and properly manage. At first, we systematically explore opportunities and challenges for firms in transitioning towards a more inclusive, equal, and fair society and provide an overview of the drawbacks and opportunities for corporate undertakings stemming from transitioning towards a more equal and fair society. Second, we seek to provide insights into how large corporations perceive, measure, and manage social sustainability risks. Through content analysis of a sample of 80 companies from the US and the Eurozone from 2019 to 2023, we argue that social sustainability risks are often an overlooked source of corporate risk and that heterogeneities exist concerning how companies address social issues. We also develop and introduce a scoring system which measures the extent to which companies deepen social sustainability risk in their risk assessments. The score highlights the range of engagement levels among firms, stressing that while some companies in our sample are actively attentive to social sustainability, others still lag. Third, we explore possible determinants of these varying levels of attentiveness, such as cultural factors, ownership structures, employee presence, industry, and firm-level financial metrics. Our research contributes to the literature by offering a nuanced understanding of corporate approaches to social sustainability risk and identifying factors that influence these heterogeneous approaches. This work represents the first step towards a more comprehensive view of corporate social sustainability risk.

Keywords: Social sustainability; Social risks; Companies attentiveness; Risk Management, Social capital, Corporate social responsibility, Cultural dimensions

Jel Classification: G32, M14

1. Introduction

It has been widely recognised that climate change poses substantial challenges to human development, threatening our well-being and future expectations and giving rise to complex sources of vulnerabilities and opportunities for people, countries, and companies (IPCC, 2023; UNFCC, 2007).

Recognising the utmost importance of climate change for economic development, financial intermediaries and investors now incorporate climate and environmental risk evaluations in their portfolio selection models. In addition, regulators and standards setters introduced rules aimed at increasing the effectiveness of climate-related financial disclosure by large companies, whilst financial supervisors all over the world started refining their supervisory models and regulations to oversee the extent to which climate-related sources of risk impact financial market stability (Bolton et al., 2020; ECB, 2022; FED, 2023; Altavilla et al., 2024). At the same time, studies on corporate climate and environmental risk, its drivers, its impact on business models, and its relationship with financial performance have multiplied in the past decade (Zhu et al., 2024; Okafor et al., 2021; Monasterolo, 2020).

Nonetheless, the concept of sustainability does not only refer to environmental safeguarding. How about the equally crucial social side of sustainable development? What are the vulnerabilities and opportunities associated with the challenge of moving humanity towards a more equal and inclusive world? Is this source of variability relevant from the business and the financial market perspective? Is it effectively taken into account by companies' risk management processes? These notes deal with this surprisingly underestimated and understudied issue.

Social sustainability encompasses the impact on people, organisations and society arising from critical issues such as inequality, labour practices, community relationships, human rights, diversity, cohesion, and demographic changes. It refers to the ability of a society to maintain and improve the well-being of its current and future members, ensuring that societal systems are inclusive and resilient. In broader terms, social sustainability occurs when the formal and informal processes, systems, structures, and relationships actively support the capacity of current and future generations to create a liveable and equitable society (Mintzberg, 1983; Orlitzky et al., 2011; Halkos et al., 2021). From a business perspective, social sustainability relates to the impact of corporate operations on people and society. The increased disclosure of public and corporate socially related information and the proliferation of clearly established social targets suggest an awakening of policymakers' and stakeholders' attention to societal dynamics.

On the one hand, the nurtured literature has wondered about the economic and financial consequences of socially related events, exploring, among other things, the effects on companies and shareholders of the occurrence of socially damaging events, such as strikes, labour accidents, protests and corruption cases. Edmans (2011) was among the first to analyse how employee satisfaction can affect stock returns. The author observed that the "100 Best Companies to Work For in America" recorded from 1984 to 2009 had better stock performances, more positive earnings surprises, and announcement returns. From a similar standpoint, Shan and Tang (2023) pointed out the beneficial effects of employee satisfaction during the COVID-19 Pandemic, which lead to better operating performance. More recently, exploring the consequences of the #MeToo Movement¹, negative market reactions have been highlighted for companies with CEOs who were involved (Borelli-Kjaer et al., 2021) and who were less attentive to gender diversity (Billings et al., 2022). Similarly, Au et al. (2024), through a sexual harassment risk score on employee job reviews, highlighted significant reductions in stock performance and profitability for firms more exposed to sexual harassment risks. Focusing on the impact of suppliers' ethical misconduct, Kim et al. (2019) proved that the market negatively reacts to news on either product-related (e.g. product harm) or process-related (e.g. human safety, welfare, and community development) issues. Intriguingly, companies scoring high on corporate social performance experienced a less pronounced market reaction in the case of process-related supplier sustainability risks. Similarly, Kim and Wagner (2021) found a significant market penalty for corruption and bribery issues on a sample of 315 cases in the USA.

On the other hand, a gap still exists regarding the exploration and analysis of how companies consider and address social risk in their risk management processes. Indeed, very few studies have systematically explored how firms proactively identify, assess, and manage social risks as part of their overall risk management strategy. In this context, by analysing a sample of 185 adverse US corporate events between 1991 and 2002, Godfrey et al. (2009) found that corporate CSR engagement serves as insurance-like protection during crises, particularly when firms orient their CSR actions towards stakeholders that are not directly involved in the business, such as the surrounding community. Accordingly, Patten (2008) observed a positive market response to corporate donations after the 2004 Southeast Asia tsunami, stressing that companies can leverage community engagement activities to mitigate the adverse effects of unfavourable events. Similarly, copious research in the field has focussed on measures of social capital, trust, or social performance and their relationship with stock market prices and/or accounting variables (Rodgers et al., 2013; Martins, 2022; Fiordelisi et al., 2022; Zhu and Wang, 2024, and others).

In comparison, very little work seeks to explore the sources of vulnerability and opportunity for corporations stemming from the unavoidable ongoing process of social development, their interrelations, and the risk management attentiveness firms have developed to social sustainability issues, so far. The term 'social risk' is commonly associated with the health and welfare indicators of individuals and communities who are at risk of certain illnesses and illicit drug use (Jenkins, 1976; Botvin and Botvin, 1992) or in need of social protection (Holzmann and Jorgensen, 1999; Mckinnon, 2004). Risk

¹ https://metoomvmt.org/

researchers (Slovic, 1987; Macgill and Siu, 2004) have also used it to distinguish between the physical and empirical risks of particular activities, developments or technologies. This understanding of social risk informed Beck's (1992) theory of the risk society, as well as theories on the social amplification of risk, in which individuals or groups collect and respond to information about risks and act as 'amplification stations' through behavioural responses or communication with others (Renn et al., 1992). In contrast, corporations and other proponents of private and public sector developments have interpreted social risk as the risk(s) to their businesses/operations arising from their interactions with (and the actions of) host communities (Rio Tinto, 2011). Several scholars have adopted this interpretation, including Joyce and Thomson (2000) and Bekefi et al. (2006). In this vein, Kytle and Ruggie (2005) postulated that three aspects are pivotal to understanding the evolving contribution of social responsibility to corporate risk management: a) networked operations, value chains and the global economy; b) the empowerment of global stakeholders; and c) a dynamic tension between and among stakeholders. Graetz and Frank (2015) were among the first to propose a clarification of the theoretical literature on social risk and its differences with traditional business risks, specifically delving into the private sector development process. The authors were among the first to claim that social risks should be understood and tackled as potential threats resulting from unwanted impacts on individuals and groups of individuals arising from the processes of social change owing to private sector developments.

By addressing this research gap, we mean to respond to the call for more research in this field and to provide material to spur discussions and follow-up work on social sustainability risk for corporations. In particular, this paper has four main goals. Firstly, we aim to provide, from a strictly financial perspective, a conceptualisation of the risk modern corporations face while coping with ongoing social challenges and derive a unique classification of the vulnerabilities and opportunities corporate social sustainability risk carries. Secondly, we aim to describe and compare how large US and EU firms identify and manage socially related sources of risk. Thirdly, we aim to develop a measure of firms' attentiveness to social sustainability risk. Fourth and finally, we seek to pinpoint the main factors that determine the attentiveness of large corporations to social sustainability issues affecting their business.

The paper is organised in seven sections. Section 2 speculates on the concept of corporate social sustainability risk (CSSR), in order to contextualise the analysis and prevent possible misunderstandings in the reading. Then, in Section 3, we provide a systematisation of the vulnerabilities and opportunities for corporate undertakings originating from social development, by exploring and classifying the physical and the transition sides of CSSR. In Sections 4 and 5, we present and discuss an extensive analysis of the extent to which large corporations in the US and EU are conceiving, measuring, and managing social development sources of risk. We also develop and discuss a measure of the attentiveness which corporations pay to the risks to their business arising from socially related issues. In Section 6, we analyse and discuss the main drivers of large US and EU corporations' attentiveness to social sustainability issues that may impact on their undertakings. Finally, Section 7 provides a conclusion.

2. Corporate social sustainability risk

Social sustainability risk is a dynamic, complex, and multi-faceted concept. Despite its relevance to the sustainable development agenda, a lack of common understanding in its conceptualisation and an unclear distinction of its features and drivers is manifest, both from a theoretical and a practical perspective. Examples of conflicting views exist throughout the literature (Thompson et al., 2000; Bekefy et al., 2006; Schafrik and Kazakidis, 2011; Hanson et al., 2019; Gantchev et al., 2022; Marashdeh et al., 2023). Consequently, to prevent confusion, it is important to disentangle the preliminary perspectives and requirements of our study.

At first, deeming it useless for the aim and scopes of the present research taking position in the long-dated debate on the perimeter of the notion of "social sustainability", we focus our analysis on the core themes and issues that are challenging future social development and that are unanimously recognised, both in the literature and in practice, as fundamental pillars of social sustainable development. These themes comprise inclusion, participation, equality, human rights, living conditions, education, social protection, healthcare, inter/intragenerational justice, fairness, housing, and social cohesion. These pillars are coherent with the main findings in the social sustainability literature (Amoah and Eweje, 2024; Paoloni et al., 2023; Sikka, 2011; Sardak et al., 2017; van der Ploeg and Vanclay, 2017; Owen and Kemp, 2017) but are not limited to them. Readers can easily extend these considerations to other dimensions of social sustainability which they believe to be substantial.

Second, we adopt an economic viewpoint. We did not consider sociological, geographical, psychological, and political nuances of social risk unless they directly or indirectly affect the economic perspective of analysis. We followed a microeconomic standpoint because we are interested in the impact of social core themes and issues on the economics of private undertakings rather than its effect on labour, economic growth, trade balance, consumption, industrial production, and so on. In particular, the focus is on profit-oriented corporations only. The impact of social risk on public entities, not-for-profit organisations, and private people is overlooked in these notes. The perspective is coherent with previous studies in the field of social risk management and accountability (de la Cuesta-Gonzalez et al., 2006; O'Sullivan and O'Dwyer, 2015).

Wong (2014) highlighted the need for corporations to adopt well-established risk management strategies to cope with environmental and social risks. In this regard, the author classified non-financial risk management as a response to these

new emerging risk areas. From a social performance perspective, Keenan et al. (2019) conceived the possibility of downside social risk, which needs to be properly identified and understood to be addressed. Bekefi and Epstein (2008) outlined that risk and opportunity related to social and environmental issues are like two sides of the same coin and that by focusing on the downside of risk, companies sometimes forego opportunities that were never formally analysed. Moving forward and consistently with classical financial economics theory, we conceive social sustainability risk in terms of the variability (uncertainty) of possible corporate results concerning their expected value as a consequence of social development, avoiding the useless complexities and confusion in terms derived from discerning the upside uncertainty (opportunity) from its drawbacks (often inappropriately referred to as risk, tout court). Consequently, the notion of social sustainability risk adopted includes both the opportunities and the potential for adverse effects that may be available to, or burden, an organisation because of social factors and ongoing societal challenges.

Finally, a single materiality criterion is at the foundation of the concept of social sustainability risk utilised here. Only social events or conditions that generate uncertainty and may influence future cash flows and, consequently, the value of firms' undertakings are part of what is intended for corporate social sustainability risk (CSSR). Although relevant from other viewpoints and for transparent corporate disclosure, externalities that do not have a financial impact on companies' undertakings are outside the concept of corporate social risk adopted here (i.e. social uncertainty that has the potential to impact on the workers, the customers, the community, and the environment, but not on the value of the company).

Therefore, in these notes, we define 'corporate social sustainability risk' as the uncertainty related to changing social factors or conditions that might cause a substantial (positive or negative) material impact on a corporate undertaking.

3. Physical and transition sources of social sustainability corporate risk

It could be possible to disentangle from different perspectives several complex sources of corporate risks associated with social sustainability. For the sake of analysis, we postulate different classification criteria. In the following study, we divide them into physical and transition CSSR, with the conviction that mirroring the usual climate and environmental risk classification can facilitate its recognition and management. Although an association between the two categories is evident in some cases, for the sake of clarity, we considered them separately. In Subsection 3.3 we address the complexities arising from the interactions between different sources of CSSR that have the potential to amplify shocks and stresses deriving from it.

3.1 Physical social sustainability corporate risk

Although different definitions can be proposed, we intend as physical CSSR (phyCSSR) any material damage or impairment to corporate undertakings deriving from shocks and stresses attributable to social development events and conditions. These shocks and stresses may impact the corporation directly or indirectly, e.g. through the value chain or the financial system.

Therefore, we conceptualise phyCSSR as a classical pure risk, i.e. a risk that firms cannot directly control and can only have two outcomes: loss or no loss. There are no opportunities for gain or profit. Strictly confining the concept of phyCSSR in the category of classical pure risk carries the advantage of being more clearly distinguished from the transition risk and, consequently, adequately tackled.

Mimicking climate change risk, we distinguished extreme social events and conditions that induce physical risk ('acute' phyCSSR) from gradual and progressive shifts in the social climate pattern ('chronic' phyCSSR). We summarise examples of both of these subcategories in Table 1. The extent and severity of phyCSSR could considerably vary from sector to sector.

Table 1 Examples of physical corporate social sustainability risks (phyCSSR) Acute phyCSSR Chronic phyCSSR

✓	Work accidents and occupational diseases.	✓ consequ	Progressive reduction of the productivity as a ence of socially related events or conditions.
✓ socially	Strikes of companies' workers called to support related issues.	✓ efficient related e	Progressive reduction of the productivity and/or cy of the value chain as a consequence of socially events or conditions.
✓ socially	Sabotage to corporate undertakings claimed for related reasons.	✓ efficienc social co	Progressive reduction of the productivity, and/or cy, and/or increase in costs as consequences of onflicts.

 \checkmark Direct material damage as a consequence of demonstrative actions of socially engaged people and organisations.

✓ Direct material damage as a consequence of riots and similar socially related turmoil.

 \checkmark Production interruptions due to labour unrest and community opposition.

 \checkmark Disruptions in the value chain as consequences of socially related events and conditions (strikes, sabotage, demonstrative actions, riots, social unrest, etc.)

 \checkmark Interruption in the payment system as a consequence of socially related events or conditions (strikes, sabotage, demonstrative actions, riots, social unrest, etc.)

 \checkmark Personal data protection breaches.

 \checkmark Increasing cost of compliance with social regulations and standards.

/ Increasing inequalities between generations.

Increasing costs for personal data protection.

The Table reports a primary distinction between acute and chronic physical corporate social sustainability risk, based on the authors' own elaborations.

3.2 Transition social sustainability corporate risk

Although it faces frequent hurdles, the process towards a more inclusive, equal, and fair society is ineluctable and entails extensive shifts to address mitigation and adaptation requirements. The uncertain material impact that could result from the responses and efforts that society and the economic system must give to the social development process (whether direct or indirect, positive or negative) defines the concept of transition corporate social sustainability risk (traCSSR) postulated in this paper. In contrast to phyCSSR, we conceptualise traCSSR as a speculative source of risk since the social transition process can both threaten and positively impact a company's value and financial stability. From a risk management standpoint, interpreting the social development risk from such a perspective may encourage companies to recognise the (too often) underrated opportunities disguised in ongoing social challenges. Table 2 summarises the potential sources of traCSSR and the related feasible vulnerabilities and opportunities for companies. The more ordinate the transition process, the less uncertain and, consequently, less risky it is from a corporate perspective. On the contrary, the more suddenly and unpredictably that social change happens, the more severe its impact is to be expected on corporate undertakings. Compared to phyCSSR, the management of traCSSR is more challenging and complex. Of course, the list is not meant to be exhaustive.

<u>fable 2 Examples of transition corporate social sustainability risks (traCSSR)</u>										
Social transition source of uncertainty for corporations	Possible vulnerabilities	Possible opportunities								
✓ Inclusion and equal (financial and non-financial) treatment at work regardless of gender, racial or ethnic origin, religion or belief, disability, age, sexual orientation, or other status	 Increasing cost of labour. Cost of internal reorganisation. Loss of talented and skilled workers from disadvantaged groups. Cost to adapt spaces and equipment to the needs of disabled workers. Cost to change corporate culture and fight stereotypes. Cost to integrate workers. Internal conflicts. 	 +Increasing corporate reputation and social capital. +Lowering exposure to labour litigation. +Attracting and retaining talented workers from disadvantaged groups. +Interaction of different ways of thinking and perspectives. 								
✓ Fair wages for a decent standard of living	 Increasing cost of labour. Loss of talented and skilled workers not decently paid. Increasing costs associated with high employee turnover. 	 +Increasing corporate reputation and social capital. +Lowering costs of labour litigation. +Attracting and retaining talented employees. 								

		+Increasing productivity. +Reducing internal conflict.
\checkmark Fair prices among the value chain	 Increasing cost of production and distribution. Increasing procurement costs. Loss of reliable suppliers and customers. 	 +Increasing quality of supplying. +Higher supplier and customer loyalty. +Increasing social capital.
✓ Changes in market preferences as a consequence of social development	 Early depreciation of investments and asset impairment. Reducing sales. Increasing cost of customer loyalty and retention. Increasing cost of production and distribution. Increasing cost of product innovation. 	+New market niches to exploit. +Increasing competitive position. +Increasing social license to operate.
✓ Quality of life, well-being, work- life balance, family-friendly policies	 Internal process reorganisation costs. Increasing cost related to employees services. Increasing cost of labour. Increasing cost to renew and refurbish workplaces. Loss of talented and skilled workers. 	 +Increasing corporate reputation and social capital. +Lowering cost of labour litigation. +Attracting and retaining talented employees. +Increasing productivity.
✓ Respect for human rights	 Increasing cost related to employees services. Increasing cost of labour. Loss of relevant suppliers and customers. Loss of talented and skilled workers. 	 +Increasing corporate reputation and social capital. +Lowering cost of labour litigation. +Attracting and retaining talented employees. +Increasing productivity.
✓ Increased (in/out) migration	Demographic imbalance.Local inequalities.Increase of temporary workers.	+New potential customers. +New potential workers.
✓ Healthy and safe work- environment	 Increasing cost of labour. Increasing cost to renew and refurbish workplaces. Loss of talented and skilled workers. 	 +Increasing social license to operate. +Lowering cost of labour litigation. +Attracting and retaining talented and skilled workers. +Increasing productivity. +Reducing employees' lost workdays.
✓ Life-long learning and training	 Increasing cost of labour. Loss of talented and skilled workers. 	 +Attracting and retaining talented and skilled employees. +Increasing productivity and employee capability. +Increasing inclination to innovation. +Increasing social capital.
✓ Increasing access to social protection for all workers	- Increasing cost of labour.	+Increasing productivity.

	- Loss of talented and skilled workers.	+Attracting and retaining talented workers.+Reducing internal conflicts.
✓ Social dialogue with the stakeholders	 Increasing cost of consultation. Loss of support from relevant stakeholders. 	 +Increasing social capital and social license to operate. +Attracting and retaining talented workers. +Easing the access to the capital markets. +Strengthening the support of relevant stakeholders.
✓ Territorial disparity	 Cost for promoting the regeneration of deprived or vulnerable areas. Cost for business development in underserved areas/communities. 	 +Increasing social capital and social license to operate. +New market niches to exploit. +Access to local labour market. +Reducing operating cost. +Increasing competitive position.
✓ Social disclosure	- Increasing costs for non-financial results measurement, reporting, and dissemination.	 +Increasing social capital. +Higher supplier and customer loyalty. +Reducing the cost of capital. +Easing the access to the capital markets. +Lowering litigation costs.
✓ Products and services for a more developed and sustainable society	 Innovation costs and risks. Training costs. Early depreciation of other investments and asset impairment. Increasing reorganisation cost. Reducing sales. Substitution of existing products and services. Increasing cost of production and selling. 	+New market niches to exploit. +Increasing competitive position +Increasing social license to operate.
✓ Safeguarding of cultural diversity and traditions	- Higher cost of production/selling. Higher cost of social engagement and participation.	 +New market niches to exploit. +Attracting and retaining talented workers. +Increasing the social capital and social license to operate. +Interacting with different ways of thinking and perspectives. +Increasing competitive position.
✓ Ageing	- Increase in the cost of labour. Higher costs related to employees services.	+New market niches to exploit. +Increasing competitive position.

Table 2 reports the primary distinction of corporate social sustainability sources of transition risks, explores the main social transition sources of uncertainty for corporations, and highlights possible vulnerabilities and opportunities; it is based on the authors' own elaborations.

3.3 Complexities

Although discussed as distinct concepts, physical and transition corporate social sustainability sources of risk do not always remain in neatly separated boxes in the real world. The two are likely to interact with each other in complex ways, amplifying shocks and stresses. At the same time, physical or transition sources of social risk may interact with other

sources of risk in the same category, adding complexities to their management. For example, dedicating more resources to reduce the disadvantage of some deprived or vulnerable territories could create trade-offs, diverting resources from other areas and communities in which the companies are involved and creating fierce opposition from workers and other stakeholders.² In this context, Keenan et al. (2019) highlighted that technological innovations in the mining industry could create imbalances and trade-offs between its ability to mine in complex geological and environmental conditions and unwanted social risks related to the operations.

Conversely, adaptation investments that mitigate the exposure and sensitivity of assets to increasingly forced migration may exacerbate internal racial and religious conflicts or, while aiming to address ageing drawbacks, the company may accidentally create inter-generational disputes among workers. The more governments waver in adequately dealing with inclusion, equality, social protection, social cohesion, increasing migration, and so on, the more rapidly the physical and transition risks should increase in parallel.

Complexities in managing social risk might derive from the complexities of the company's value chain. Klassen and Vereecke (2012) classified social issues in the supply chain as product or process-related aspects of operations that affect human safety, welfare, and community development. Accordingly, the social misconduct of customers, suppliers, lenders, shareholders, and other stakeholders can adversely impact the company's undertaking and is costly to monitor and prevent. Furthermore, the COVID-19 pandemic exacerbated the social risk effect on supply chains (Najaf et al., 2023), with different impacts due to the differences in countries' governance and social protection norms.

The same carbon neutrality and circular economy transition is an indirect potential driver of social uncertainty since it will undoubtedly impact some territories, communities, and categories of workers adversely or positively, adding difficulties for a company trying to measure its exposure to social sustainability risk. The extent to which the ecological transition will be ordered will also influence its actual impact on society and the indirect impact on the company.

In managing social sustainability risk, companies must also consider that sources of vulnerabilities and opportunities are not static, but they change as technology evolves, economies develop, and social priorities shift. Moreover, as clearly outlined by Kytle and Ruggie (2005), the concept of social risk is not necessarily centred on independent normative judgments of corporate right or wrongdoings but rather the outcome of changing external factors that each company can perceive differently.

Finally, the financial impacts of socially related issues on undertakings are not always clear or direct and for many organisations, identifying the issues and assessing potential impacts may be challenging. This depends on (1) limited knowledge of socially related issues within organisations, (2) the tendency to mainly focus on near-term risks without paying adequate attention to risks that may arise in the longer term and, (3) the difficulties in quantifying the financial effects of the uncertainty stemming from the social transition.

4. Empirical analysis

A textual analysis of the audited annual reports for the fiscal years 2019 to 2023 of all the companies included in the EuroStoxx50 and the DowJones30 indexes at 31.12.23 was carried out to examine the extent to which large US and Eurozone (termed 'EU' for the sake of text readability) companies identify and manage CSSR (see Appendix A for the list and main descriptions of the companies in the sample). In particular, the analysis focussed on the ESG and risk management parts of the documents, i.e. the pages that analyse the sustainability strategy of the company and the risk management operations in-depth, independently of the actual denomination of the report sections. A total of 397 annual reports formed the basis of our analysis.³

Several indicators, based on direct reading and inspection of the documents, were developed and formed the basis of the analysis; they are described in Table 3.

Table 3. Indicator descriptions

Indicator	Description	Proxy
S_RELEVANCE	Expresses the relevance of the social pillar in the overall sustainability /ESG policy of the company.	Page count of the social part of the annual report divided by the total page count of the document (excluding the financial statements section).

² Recent developments at Harley-Davidson, Deer & CO., and Brown Forman, who announced the dropping of their diversity, equality and inclusion policies after pressure from stakeholder critics, are clear examples.

³ The three missing reports relate to Stellantis, the automotive company born from the combination of Peugeot and FIAT in 2021, and to Prosus, the global investment company which is majority-owned by South African multinational Naspers, listed at Euronext on September 2019 and which released its first annual report under EU legislation for the fiscal year 2020.

	1	1
RISKS	Identifies the social issues that the company deems to have an actual, substantial financial impact on its undertakings, according to Section 2 criteria.	Number of social issues that the company deems to have an actual, substantial financial impact on its undertakings.
CATEGORY	The dimension each RISK can be categorised as, according to Section 3.	PHY = Number of physical risks ACU= Number of physical acute risks CHRO= Number of physical chronic risks TRA = Number of transition risks TRA_WORK= Number of transition risks related to employees and workplace TRA_MKT= Number of transition risks related to customers and end- market TRA_CHAIN= Number of transition
		risks related to the company's value chain TRA_COMM= Number of transition risks related to community relationships and territorial disputes TRA_GEN= Number of transition risks related to generic social issues TRA_OTH = Number of transition risks related to other social matters
VULNERABILITY	Expresses the negative material impact that transition corporate social sustainability risks (TRA) can have on the company's undertakings.	Number of transition social risks (TRA) that the company deems to have a potential negative impact on its operations.
OPPORTUNITY	Expresses the positive material impact that transition corporate social sustainability risks (TRA) can have on the company's undertakings.	Number of material transition social risks (TRA) that the company deems to have a potential positive impact on its operations.
EXPOSITION ⁴	Expresses the net material impact of transition corporate social sustainability risks (TRA) that the company deems to have an impact on its undertakings.	The difference between OPPORTUNITY and VULNERABILITY.
STAGE	Expresses the depth of the company's social sustainability risk management process	 The social risk is just identified for its impact on corporate undertakings The social risk is adequately described in its features and impact on the company's undertakings The company has taken actions in order to reduce the drawbacks and or

⁴ Although transition risks are conceived as bringing with them both opportunities and possible drawbacks, this may not be the case in the actual perception of a company's management. Consequently, the parameters 'opportunity', 'vulnerability' and 'exposition' are intended to catch the extent to which companies consider the potential, positive and/or negative, impact of transition risks on their undertakings. The classification follows the actual judgement of the company. Consequently, the same transition risk can be considered as being just a vulnerability for a company, an opportunity without drawbacks for another, and both an opportunity and a vulnerability for a third. At the same time, physical social risks are conceptualised as pure risk here. Therefore, it is redundant to take them into consideration in these parameters.

		exploit the opportunities of the social risk and reports on the outcomes
		4. The company measures the financial impact of the social risk, at least in terms of severity/probability of occurrence
		5. Social sustainability risk management is fully integrated in the company's overall risk management processes
MGMT_2	Expresses the extent to which the company adequately describes the features and the impact of a social risk on its undertakings.	Number of social risks at stage 2 divided by RISKS.
MGMT_3	Expresses the extent to which the company takes action in order to manage the social issues that are deemed to be having a material impact on its undertakings.	Number of social risks at stage 3 divided by RISKS.
MGMT_4	Expresses the extent to which the company measures the impact of social issues on its undertakings.	Number of social risks at stage 4 divided by RISKS.

The Table summarises the indicators employed in the empirical analysis, providing a short description and the proxies adopted for their measurement.

We adopted the following protocol to reduce possible bias in the codification of the raw data derived from subjective norms and the beliefs of the researchers:

- 1. Respect the company's actual judgement concerning the denomination, classification, and impact of material social issues. No modifications are allowed.
- 2. A social issue is considered material if and only if the company has that view, independently of the personal judgment of the researcher.
- 3. A material issue is considered to be 'social' if, and only if, the company has this view, independently of the personal judgment of the researcher.⁵ Exceptions to this rule must be strongly supported and submitted for external validation by experts in the field.
- 4. A material social issue cannot be split into two or more materialities, assuring consistency with the company's view and management of the issue.
- 5. Two or more material social issues cannot be unified into one unique materiality, assuring consistency with the company's view and management of the issue.
- 6. A social issue is considered to be a vulnerability, an opportunity, or both, according to the judgment of the company, independently of the personal judgment of the researcher, assuring consistency with the company's view and management of the issue.
- 7. Prevalence criteria are applied in cases where the risk can be referred to two or more dimensions.
- 8. Changes in the treatment from year to year should be consistently reflected in the data.

To ensure high data reliability one of the authors codified the raw data and then another one validated it. For the sake of consistency, a third author eventually checked the data. In the case of potential ambiguities, we cross-checked the classification, comparing other relevant official documents from the company, such as separate sustainability and CSR reports, to provide more robust assurances on the validity of the classification.

Based on the dataset, we developed a Social Sustainability Risk Attentiveness Score (SSRAS) to catch the actual relative extent to which each company in the sample are attentive to the material impact of social issues on its undertakings in each year.

⁵ For example human rights or personal data privacy are viewed as fundamental governance-related issues in some companies and are treated with the perspective of strictly adhering to human rights or data privacy policies, controlling their constant respect. On the contrary, other companies are more focussed on the positive and negative impacts on their workers, the supply chain, the territory, or their customers of the failures and successes of their actions aimed at developing a culture of human rights, respect throughout the value chain, and protecting sensitive data. As a consequence, the latter cases are only included in our social sustainability risk dataset. The same applies for other sources of risk, such as the pandemic, viewed by some companies as a threat to their operations but by others in the perspective of protecting workers, the community, and customers.

 $\begin{aligned} & \text{SSRAS}_{it} = x'_{it}(\text{S_RELEVANCE}) + x'_{it}(\text{RISKS}) + x'_{it}[(\text{TRA+CHRO})/\text{RISKS})] + x'_{it}(\text{EXPOSITION/TRA}) + x'_{it}(\text{TRA-TRA}_WORK-TRA_GEN)/TRA})] + \text{MAT}_AN_{it} + \text{MGMT}_{2it} + \text{MGMT}_{3it} + \text{MGMT}_{4it} + \text{STAGE5}_{it} \\ & (1) \end{aligned}$

Where:

x'_{it} is the min-max normalised value of the parameter in brackets for company *i* at time *t*;

MAT_AN_{it} is a dichotomous variable that takes the value of 1 if the company *i* at year *t* carried out a materiality analysis assessing the impact of social issues on the company's operations and disclosed its main outcomes (following largely accepted guiding principles: GRI, SASB, ISSB, etc.);

STAGE5_{it} is a dichotomous variable that takes the value of 1 if the company i is at stage 5 in the risk management process at year t;

Table 3 provides descriptions of the other parameters.

SSRAS ranges from 0 to 10, where the higher the score, the higher the firm's attentiveness in year t on the materiality of social issues compared to the other companies in the sample. Since the min-max normalisation of the first five items of the score is taken separately for each year (it considers the minimum and maximum values recorded each year), the score permits cross-sectional comparisons but purposely avoids longitudinal comparability. In such a way, the scores are independent of the number of years under analysis (i.e. they do not potentially change if one year is added or excluded from the sample), permitting the use of the score as a dependent variable for consistent empirical analysis. Moreover, evolving sensitivity on social development-related issues, evolving risk management practices, and evolving sustainability disclosure regulation would make any time comparison incoherent. For example, improperly disposed of drugs or ageing are hardly considered social sustainability risks today, in the materiality meaning of Section 2. Nonetheless, raising awareness of these issues in society may, in the future, inspire opportunities and/or threads similar to what suddenly happened in recent years concerning sexual harassment at the workplace soon after the #MeToo movement rapidly took shape. At the same time, the strong commitment and belief of communities in equality and inclusion is likely (and desirable) to eradicate the issue in the future and turn diversity, gender, equality, and inclusion matters into aspects that do not carry with them material impact for companies. Permitting the score to be influenced by past and future years' distribution of some items would be misleading. On the contrary, the score aims to catch the company's attentiveness to social sustainability risk, given the societal expectations at the time the information is disclosed; this is consistent with the financial materiality pathway framework and its dynamically evolving nature, as devised by Freiberg et al. (2020). Accordingly, any inference that can be made using the score is not influenced by the future or past societal environment.

Social sustainability risks are multifaceted, affecting various aspects of the relationship between the corporation and society. The six dimensions into which we categorised corporate social sustainability transition risks (workplace, customers, value chain, community, generic, and "other", see Table 3) reflect the key areas they primarily impact. Dimensions relating to the supply chain, customers, community, and other social aspects aim to underscore a more mature approach to managing CSSR. At the same time, recognising chronic sources of physical social risk can be paired with more advanced ways of dealing with social risk. Items 3 and 5 were, consequently, introduced into the score.

Our conception of transition social risk (see Subsection 3.2) postulates that these sources of risk simultaneously pose both vulnerabilities and opportunities to the company. Seeing both sides of the coin testifies to advanced awareness of the nature of social sustainability risk. We conceived item 4 of SSRAS with this purpose. In the same perspective, companies that prioritise social issues according to periodical sound material analysis and companies that have already fully integrated social sustainability into their overall risk management processes can be deemed as more experienced and advanced at managing their exposure to social sustainability risk. SSCRS items 6 and 10 catch these features.

5. Results and discussion

A constant increase in the identification of the financial material impact of social issues on corporate undertakings is evident in the period under inspection, both in the EU and the US (see Fig. 1).





The average number of social risks identified by the companies in the sample rose from 2.96 in 2019 to 4.94 in 2023. EU firms seem to lead the process. On average, in the years 2019-2023, 4.48 social risks per year were identified by EU companies, compared to 3.65 by US ones (the non-parametric Wilcoxon-Mann-Whitney t-test for equality in the means was 22.018, statistically significant at 99% confidence level). On average, EU companies identified 3.77 social risks in 2019, to US firms' 1.67. These figures constantly rose over five years, reaching 5.12 and 4.63 in 2023, respectively (see Fig. 2).



Fig. 2 – Average number of social risks Identified per year. The figure reports the average number of social risks identified by the firms in the sample (EU+US) and, separately, the average number of Social Risks acknowledged by EU and US companies. For comparison, the sample is composed of 50 EU companies and 30 from the US

An impressive increase can be detected in the US in 2020 and 2021, with almost 2.5 times the average number of social risks identified in 2021 compared to 2019. At the same time, the standard deviation of the number of social risks constantly declined in the years under inspection, both in the EU and in the US, suggesting a greater and more widespread recognition of the financial relevance of social sustainability by large companies.⁶ There were four companies in the EU in 2019, 6 in the US in 2019 and 1 in the US in 2020 that did not identify any financial impact from social issues. From 2021 onwards, all the companies in the sample identified at least one social sustainability risk. The number of companies that recognised more than six social risks rose from six (12.5%) in 2019 to 13 (26%) in 2023 in the EU and from zero to two (6.7%) in the US. The maximum number of social risks identified by each company was 10 in the EU (one company in 2019) and seven in the US (two companies from 2021 until 2023).



Fig. 3 – Social Sustainability Risks per Category. The figure reports the total number of social sustainability risks identified by the firms in the sample, highlighting the categories of social risk based on Table 3 with different colours. In detail, 'Acute' refers to Acute Physical Social Risks, 'Chro' refers to Chronic Physical Social Risks, 'Work' refers to Transition Social Risks related to employees and workplace, 'Mkt' refers to Transition Social Risks related to customers and end-market, 'Chain' refers to Transition Social Risks related to the company's value chain, 'Comm' refers to Transition Social Risks related to the community relationships and territorial disputes, 'Gen' refers to generic social transition issues, and 'Oth' refers to other social matters highlighted by EU and US companies. For comparison, the sample is composed of 50 EU companies and 30 from the US.

Transitional social risks seem to worry the EU and US companies more than physical risks (Fig. 3). On average, 3.42 transitional risks were identified by each company per year, compared to 0.75 physical risks. The figures grew constantly during the timespan inspected, moving from 2.35 in the EU and 0.62 in the US (in 2019) to 4.09 and 0.85 (in 2023), respectively. On average, EU companies identified a higher number of both categories of risks (see Table 3 for details). Among the physical risks, the most identified were acute ones. The acute to chronic risks ratio was roughly 6 to 1 each year under inspection and in the overall account. Injuries and accidents at the workplace were the most recurring acute physical-social sustainability risks identified by the companies in our sample, followed by personal data breaches and acts of malice, violence and civil unrest resulting from major social crises. In 2020, a small group of companies recognised the pandemic as a possible social issue threatening its undertakings.⁷ However, most of them no longer consider it financially material in the perspective adopted for this analysis. Increasing costs incurred for complying with socially related regulation (including extended social disclosure) was the most recurring chronic social risk that companies in the sample are worried about.⁸

⁶ The standard deviations of the number of social risks were 2.47 and 1.85 in the EU and 1.51 and 1.35 in the US in 2019 and 2023 respectively. Complete data are reported in table 1

⁷ COVID 19 was, of course, a major threat for almost all companies in 2020 and 2021. Nonetheless, most of them tackled it in the (business) perspective of sales reduction and stoppages to the company's operation as a consequence of imposed lock-down and market slow-down. Very few viewed or managed it in the perspective of the health and safety of the employees or the community. Only these lasts stances comply with our social materiality criteria and are, consequently, processed as social risks.

⁸ 6 companies out of 80 (7.5% of the sample) identified this kind of chronic socially related vulnerability.

Transition social sustainability risks related to employees and the workplace were, in the 5 years analysed, the most recurring class, both for EU and US companies. On average the companies in the sample identified 2.02 workplace-related transition social risks annually, with unappreciable differences between the two areas and, especially from 2021, from year to year. Human capital management (talent attraction and retention), human rights, and DE&I (Diversity, Equity and Inclusion) are the most recurrent types of TRA_WORK risks. Some US companies consider the workers' participation in labour unions as a relevant source of (sole) vulnerability since employers' claims may result in strikes, work stoppages and the renegotiation of labour contracts.⁹ A different risk assessment approach is evident in the EU, where labour relationships are traced back to human capital management and are often viewed as a potential opportunity for attracting and retaining talented people.

EU firms seem to recognise the materiality of social sustainability issues relating to their customers (TRA_MKT) and their value chain (TRA_CHAIN) to a greater extent than US firms. Indeed, the average yearly number of TRA_MKT and TRA_CHAIN risks are 0.51 and 0.54 for EU companies and 0.13 and 0.17 for US ones, respectively. A constant increase over the years is evident for these classes of risk as well, both in the EU and the US. The (positive and negative) impact on reputation and selling, derived from how the company deals with socially relevant issues, is the TRA_MKT risk the firms in the sample are more aware of. Some companies in the healthcare, financial, and utilities industries also saw material opportunities and vulnerabilities in granting access to their base-level products to the vulnerable population. Only a couple of companies have recently started to recognise the material impact of changing customer expectations regarding how firms deal with social issues. Malpractices in the supply chain (especially concerning respecting human rights and workplace conditions) are the TRA_CHAIN risk large EU and US companies are more concerned with. On the contrary, EU and US companies show similar attentiveness levels to community and territory-related social sustainability risks (0.44 TRA_COMM risks are, on average, annually identified by EU companies, 0.47 by US ones). Issues related to their relationship with the community and the impact of a company's operation on the territory and the community were the TRA_COMM risks the firms in the sample are more aware of.

The class 'other CSSR' comprises sources of risk peculiar to the firms' operations and not ascribable to other classes. Interestingly, for some US tech companies, the social and responsibility facets of artificial intelligence (AI) are issues of emerging social material concern; EU companies do not seem to have approached the issue, yet. The higher attentiveness to the socially related facets of AI adoption and technological development might be related to the greater relevance of AI development in the corporate strategy of US Tech companies¹⁰. Responsible AI is a new source of risk which is worthy of our attention and so we included it in the TRA_OTH class; companies from all over the world will probably struggle with this in years to come. Vulnerabilities and opportunities, in terms of stakeholder engagement, reputation, credit risk, and the cost of capital derived from a careful (careless) and (un)fair disclosure of social information, is also managed by some companies (within our definition of transition social sustainability risk). This source of risk was also coded in the TRA_OTH class. No relevant differences are evident in this class of social sustainability risks between the US and EU.

A large majority of the EU companies analysed (86%) carried out accurate materiality analyses in 2023, assessing the impact of social issues on company operations and disclosing the main outcomes. One-fifth of the EU companies had fully integrated social sustainability risk management into their overall risk management processes (see Fig. 4). In general, the migration from non-integrated to integrated risk management was combined with a substantial revision in the approach to the identification and description of social risks, to make their management consistent with the overall risk management framework of the company. In several cases, the revision carried with it a reduction in the number of identified social sustainability risks as a consequence of the new and integrated management approach adopted. These changes seem functional for more managing the complexities outlined in Section 3.3 more effectively. In comparison, US firms showed a slower process. Only 57% of the companies analysed disclosed the main outcomes of social sustainability materiality analysis in 2023. None considered the management of social sustainability risks as an integral part of its risk management system. In both areas of the world large firms identifying relevant social issues through materiality analysis constantly grew, consistent with the rest of the process (56% and 33% in 2019, in the EU and US respectively). The number of firms that included social risk in their overall risk management system doubled in the EU over the five years under inspection.

⁹ These issues have been coded as acute physical social risks according to the actual perspective of the companies.

¹⁰ https://www.ft.com/content/5ee96d38-f55b-4e8a-b5c1-e58ce3d4111f



Fig. 4 – Advancements in Social Sustainability Risk Management. The figure reports the percentage of EU and US companies in the sample that carried out accurate materiality analyses ('Mat.An' columns) for social sustainability risks or that fully integrated social sustainability risk management practices into their overall risk management processes ('RM integr' columns) for each year under inspection. For comparison, the sample is composed of 50 EU companies and 30 from the US.

Table 4a summarises the main figures. Table 4b details the EU data reported in Table 4a, for the more represented countries in the sample.

		CSSR Av	CSSR Max	CSSR Min	CSSR SD	Average PHY	Average TRA	Average ACU	Average CHRO	Average TRA_WORK	Average TRA_MKT	Average TRA_CHAIN	Average TRA_COMM	Average TRA_GEN	Average TRA_OTH	MA No.	T. AN. %	Risk N No.	IGMT %
OVE	EU	4.48	10	0	2.12	0.85	3.63	0.70	0.14	1.95	0.51	0.54	0.44	0.09	0.11				
RALI	US	3.65	7	0	1.83	0.59	3.06	0.53	0.07	2.13	0.13	0.17	0.47	0.07	0.09				
	EU+US	4.17	10	0	2.05	0.75	3.42	0.64	0.11	2.02	0.36	0.40	0.45	0.08	0.10				
202	EU	5.12	9	2	1.85	0.94	4.18	0.76	0.18	2.14	0.64	0.62	0.52	0.06	0.20	43	86%	11	22%
ω	US	4.63	7	2	1.35	0.70	3.93	0.57	0.13	2.67	0.17	0.27	0.53	0.10	0.20	17	57%	0	0%
	EU+US	4.94	9	2	1.70	0.85	4.09	0.69	0.16	2.34	0.46	0.49	0.53	0.08	0.20	60	75%	11	14%
202.	EU	4.84	9	2	1.99	0.90	3.94	0.74	0.16	2.04	0.54	0.58	0.52	0.08	0.18	40	80%	10	20%
2	US	4.63	7	2	1.40	0.67	3.97	0.57	0.10	2.70	0.17	0.27	0.53	0.13	0.17	15	50%	0	0%
	EU+US	4.76	9	2	1.80	0.81	3.95	0.68	0.14	2.29	0.40	0.46	0.53	0.10	0.18	55	69%	10	13%
202:	EU	4.60	9	2	1.90	0.86	3.74	0.70	0.16	2.04	0.54	0.56	0.42	0.08	0.10	37	74%	9	18%
Р	US	4.13	7	1	1.48	0.60	3.53	0.57	0.03	2.53	0.13	0.17	0.53	0.10	0.07	12	40%	0	0%
	EU+US	4.43	9	1	1.77	0.76	3.66	0.65	0.11	2.23	0.39	0.41	0.46	0.09	0.09	49	61%	9	11%
2020	EU	4.02	9	1	2.03	0.80	3.22	0.69	0.10	1.82	0.43	0.47	0.35	0.12	0.04	31	63%	7	14%
0	US	3.20	6	0	1.49	0.57	2.63	0.53	0.03	1.93	0.10	0.07	0.50	0.03	0.00	10	33%	0	0%
	EU+US	3.71	9	0	1.88	0.71	3.00	0.63	0.08	1.86	0.30	0.32	0.41	0.09	0.03	41	52%	7	9%
2019	EU	3.77	10	0	2.47	0.73	3.04	0.63	0.10	1.69	0.38	0.46	0.38	0.10	0.04	27	56%	5	10%
Ψ.	US	1.67	6	0	1.51	0.43	1.23	0.40	0.03	0.83	0.07	0.07	0.27	0.00	0.00	10	33%	0	0%
	EU+US	2.96	10	0	2.38	0.62	2.35	0.54	0.08	1.36	0.26	0.31	0.33	0.06	0.03	37	47%	5	6%

Table 4a. Corporate Social Sustainability Risks in the EU and US, 2019-2023

The table reports the average number (AV), the maximum (MAX), the minimum (MIN), and the standard deviation (SD) of corporate social sustainability risks (CSSR) identified by the companies in the sample (EU+US) and by EU and US firms for the whole period analysed (2019-2023) and each year under inspection. Data also show the class (Physical - PHY, Transitional - TRA, Chronic - CHRO, Workplace - WORK, end-market - MKT, value chain - CHAIN, community - COMM, other - OTH, and generic - GEN), classified according to Table 3's criteria. The MAT_AN and RISK_MNGT columns detail (in absolute number and in percentage) the companies that carried out a materiality analysis to assess the impact of social issues, following largely accepted guiding principles, and companies fully integrating social risk management in their overall risk management models, respectively. For comparison, the sample is composed of 50 EU companies and 30 from the US.

		# of firms	CSSR Av	CSS R Max	CSS R Min	CSS R SD	Average PHY	Average TRA	Average ACU	Average CHRO	Average TRA_WORK	Average TRA_MKT	Average TRA_CHAIN	Average TRA_COMM	Average TRA_GEN	Average TRA_OTH	MA No	T. AN. . %	Risk No	k MGMT p. %
VO	FRA	17	5.66	10	3	2.01	1.25	4.41	1.09	0.15	2.52	0.60	0.88	0.33	0.02	0.06				
ERAL	GER	14	3.31	7	0	1.59	0.51	2.80	0.40	0.11	1.69	0.14	0.49	0.24	0.14	0.10				
	ITA	5	4.60	7	2	1.44	0.64	3.96	0.64	0.00	2.00	0.48	0.12	0.88	0.20	0.28				
	NED	6	3.89	8	1	1.83	0.96	2.93	0.63	0.33	1.26	0.52	0.37	0.52	0.11	0.15				
	SPA	4	5.25	9	2	2.23	1.15	4.10	0.90	0.25	1.80	1.20	0.15	0.90	0.00	0.05				
	OTH	4	3.40	8	0	2.06	0.10	3.30	0.10	0.00	1.45	0.70	0.40	0.45	0.10	0.20				
20	FRA	17	6.00	9	3	1.85	1.41	4.59	1.24	0.18	2.47	0.71	1.00	0.29	0.06	0.06	15	88%	7	78%
23	GER	14	3.93	7	2	1.33	0.57	3.36	0.43	0.14	2.07	0.21	0.57	0.29	0.07	0.14	9	64%	0	0%
	ITA	5	5.40	7	4	1.02	0.60	4.80	0.60	0.00	2.20	0.80	0.20	0.80	0.20	0.60	5	100%	1	14%
	NED	6	5.67	8	4	1.49	1.17	4.50	0.67	0.50	2.00	0.83	0.33	1.00	0.00	0.33	6	100%	2	25%
	SPA	4	4.75	7	2	1.92	1.00	3.75	0.75	0.25	1.50	1.00	0.25	1.00	0.00	0.00	4	100%	1	14%
	OTH	4	4.75	8	2	2.17	0.25	4.50	0.25	0.00	1.75	1.00	0.50	0.75	0.00	0.50	4	100%	0	0%
2	ED A	17	F 02	0	2	1.05	1 20	4.52	1 1 2	0.18	2.50	0.53	0.04	0.25	0.00	0.00	14	0.20/	7	700/
022	FRA CED	1/	3.82	9	2	1.65	1.29	4.55	1.12	0.18	2.59	0.55	0.94	0.35	0.06	0.06	14	62%	,	/8%
	GER	14	3.79	/	2	1.42	0.57	3.21	0.43	0.14	2.00	0.21	0.50	0.29	0.07	0.14	9	64%	0	0%
		5	5.00	,	3	1.26	0.60	4.40	0.60	0.00	2.00	0.60	0.20	1.00	0.20	0.40	5	100%	1	14%
	NED	6	4.33	6	2	1.49	1.17	3.17	0.83	0.33	1.17	0.50	0.33	0.83	0.17	0.17	5	83%	1	17%
	SPA	4	5.50	9	2	2.69	1.00	4.50	0.75	0.25	1.75	1.25	0.25	1.00	0.00	0.25	4	100%	1	11%
	OTH	4	4.75	8	2	2.17	0.25	4.50	0.25	0.00	1.75	1.00	0.50	0.75	0.00	0.50	4	100%	0	0%
203	FRA	17	5.71	9	3	1.90	1.24	4.47	1.06	0.18	2.59	0.59	0.94	0.29	0.00	0.06	13	76%	6	67%
21	GER	14	3.57	6	2	1.24	0.57	3.00	0.43	0.14	1.93	0.07	0.50	0.29	0.14	0.07	7	50%	0	0%
	ITA	5	5.20	7	3	1.33	0.60	4.60	0.60	0.00	2.20	0.60	0.20	1.00	0.20	0.40	5	100%	1	14%
	NED	6	3.33	5	2	1.25	0.83	2.50	0.50	0.33	1.00	0.50	0.33	0.33	0.17	0.17	5	83%	1	20%
	SPA	4	5.75	9	4	2.05	1.50	4.25	1.25	0.25	1.75	1.75	0.00	0.75	0.00	0.00	4	100%	1	11%
	OTH	4	3.50	5	2	1.12	0.00	3.50	0.00	0.00	1.75	0.75	0.50	0.50	0.00	0.00	3	75%	0	0%
2	EDA	17	E 2E	0	2	1 00	1 1 2	4.24	1.00	0.12	2.47	0.50	0.82	0.20	0.00	0.06	12	76%	E	E 60/
020	CER	14	2.22	5	1	1.00	0.42	4.24	1.00	0.12	2.47	0.39	0.82	0.25	0.00	0.00	15	10%	5	00%
	GER	14 F	2.95	6	1	1.44	0.45	2.50	0.50	0.07	1.45	0.14	0.43	0.21	0.21	0.07	0 F	45%	0	0%
		5	3.60	о г	2	1.17	0.80	3.00	0.80	0.00	1.80	0.20	0.00	0.80	0.20	0.00	2	100%	0	0%
	NED	5	2.80	5	2	1.17	0.80	2.00	0.60	0.20	1.00	0.20	0.40	0.20	0.20	0.00	2	40%	1	20%
	SPA	4	5.50	9	3	2.29	1.50	4.00	1.25	0.25	2.00	1.25	0.00	0.75	0.00	0.00	4	100%	1	11%
	OTH	4	2.50	4	1	1.12	0.00	2.50	0.00	0.00	1.25	0.50	0.25	0.25	0.25	0.00	1	25%	0	0%
2019	FRA	17	5.41	10	3	2.43	1.18	4.24	1.06	0.12	2.47	0.59	0.71	0.41	0.00	0.06	12	71%	5	50%
÷	GER	14	2.36	6	0	1.87	0.43	1.93	0.36	0.07	1.00	0.07	0.43	0.14	0.21	0.07	4	29%	0	0%
	ITA	5	3.60	6	2	1.36	0.60	3.00	0.60	0.00	1.80	0.20	0.00	0.80	0.20	0.00	4	80%	0	0%
	NED	4	2.75	6	1	1.92	0.75	2.00	0.50	0.25	1.00	0.50	0.50	0.00	0.00	0.00	2	50%	0	0%
	SPA	4	4.75	7	2	1.92	0.75	4.00	0.50	0.25	2.00	0.75	0.25	1.00	0.00	0.00	4	100%	0	0%
	ОТН	4	2 00	4	0	1 58	0.00	2 00	0.00	0.00	1 00	0.25	0.25	0.25	0.25	0.00	1	25%	0	0%

Table 4b. Corporate Social Sustainability Risks in the main EU countries, 2019-2023

The Table shows the average number (AV) the maximum (MAX), the minimum (MIN), and the standard deviation (SD) of corporate social sustainability risks (CSSR) identified by the EU companies in the sample for the whole period analysed (2019-2023) and for each year under inspection. Data are reported according to the country where the firms are headquartered. Data also show the class (Physical - PHY, Transitional - TRA, Chronic - CHRO, Workplace - WORK, end-market - MKT, value chain - CHAIN, community - COMM, other - OTH, and generic - GEN) and they are classified according to Table 3's criteria. The MAT_AN and RISK_MNGT columns detail (in absolute number and in percentage) the companies that carried out a materiality analysis finalised at assessing the impact of social issues, following largely accepted guiding principles, and companies fully integrating social risk management in their overall risk management models, respectively. The second column shows the number of companies in each country in the sample. The group OTH (other) comprises firms from Belgium, Finland (#2), and Ireland

Interestingly, striking differences are evident when the EU data are split based on the country where the company headquarters (see Table 4a). France led the process; on average, its firms acknowledged that 5.66 social risks each year have a material impact on their undertakings. They were followed by Spanish (5.25) and Italian companies (4.60). On the contrary, Dutch (3.89) and German corporations (3.31) showed a pattern that resembled that of US firms, rather than their EU counterparts. The recognition of the materiality of the social sustainability issue in French firms was high at the beginning of the period analysed as well (an average of 5.41 risks identified by French companies). Apart from social risks related to the workplace, French companies paid greater attention to the risks that can prompt the entire value chain. At the same time, Spanish firms recognised a higher average number of CSSR related to their end-market and the

community of reference than the other EU companies. Italian firms showed the best increase in the average number of social sustainability risks identified, in the timespan analysed.

Different industries seem to be approaching CSSR along different paths (see Table 5). Skipping the utilities, whose figures (5.8 social sustainability risks recognised on average each year in the timespan analysed) may be influenced by the very low number of companies in the sample (two), the consumer discretionary sector is the industry that showed the greatest attention to the materiality of social issues on corporate undertakings, followed by telecommunications. On average, in the years under inspection, around five social sustainability risks were identified by each company in these two industries per year. Consumer staples acknowledged an average 4.58 social sustainability risk on an annual basis. A large part of this attention went to transition social risks (the yearly average was 4.1 for all three industries) and, in particular, to workplace-related social matters. Consumer staple companies paid the greatest attention on social sustainability risks related to the end-market (a yearly average of 1.05 social risks in this class), to the healthiness of their products and the social responsibility of their marketing practices, in particular. Compared to the other sectors, consumer staples and telecommunications are more focussed on managing social opportunities and vulnerabilities arising from managing social sustainability issues in the value chain.

Energy and basic materials companies are particularly concerned by physical risks compared to companies belonging to other sectors. In particular, they are deemed to be exposed to fatalities as a consequence of their productive processes and to damage to their undertakings as a consequence of social unrest. Together with industrial companies (3.39 yearly social risks on average) and financial companies (3.63), basic material companies (3.53) recognised the lowest average number of social sustainability risks in the years under inspection. The number of social issues the companies in these sectors deemed would have a financial impact on their undertakings was dramatically low in 2019: 2.50, 2.64, and 1.33 on average, respectively. On the contrary, financial and 'tech' corporations recognised a higher relevance of the opportunities and drawbacks related to engaging with and sustaining local communities and investing in the territory. Healthcare is the industry that showed the highest concern of failures in the treatment of personal data and the growing costs to ensure very high levels of customers' sensitive data protection.

The number of social risks constantly grew in all the sectors over the years. All the industries experienced a sharp increase in the number of companies that formally analysed the materiality of social issues and disclosed the outcomes. On the contrary, the complete integration of social risk management into the overall enterprise risk management framework seems to be a process that has not yet started in the Energy, Tech, and Telecom industries.

	_	# of firms	CSS R Av	CSS R Max	CSS R Min	CSS R SD	Average PHY	Average TRASSR	Average ACU	Average CHRO	Average TRA_WORK	Average TRA_MKT	Average TRA_CHAIN	Average TRA_COMM	Average TRA_GEN	Average TRA_OTH	MA No	T. AN. . %	Risk No	MGMT . %
OVE	Basic Mat.	3	3.53	8	0	2.45	1.13	2.40	1.13	0.00	2.00	0.13	0.27	0.00	0.00	0.00				
RALL	Cons.Discr.	16	5.01	9	0	2.12	0.91	4.10	0.77	0.14	2.49	0.35	0.53	0.62	0.06	0.06				
	Cons.Staples	8	4.58	9	0	2.35	0.48	4.10	0.20	0.28	1.80	1.05	0.78	0.25	0.15	0.08				
	Energy	3	4.00	6	1	1.32	1.47	2.53	1.47	0.00	1.47	0.00	0.20	0.33	0.33	0.20				
	Financials	14	3.63	9	0	2.09	0.44	3.19	0.36	0.09	1.79	0.44	0.10	0.70	0.13	0.03				
	Healthcare	7	3.94	10	0	1.96	0.66	3.29	0.43	0.23	2.00	0.46	0.31	0.14	0.09	0.29				
	Industrials	14	3.39	6	0	1.52	0.77	2.61	0.70	0.07	1.91	0.09	0.29	0.30	0.00	0.03				
	Tech	9	4.14	8	0	1.77	0.70	3.43	0.61	0.09	2.02	0.16	0.50	0.68	0.00	0.07				
	Telecom	4	4.90	8	2	1.55	0.80	4.10	0.80	0.00	2.15	0.10	0.85	0.40	0.25	0.35				
	Utilities	2	5.80	7	2	1.72	1.40	4.40	1.40	0.00	2.20	1.10	0.20	0.30	0.00	0.60				
2023	Basic Mat.	3	4.67	8	3	2.36	1.33	3.33	1.33	0.00	2.67	0.33	0.33	0.00	0.00	0.00	3	100%	1	13%
	Cons.Discr.	16	5.69	9	3	1.61	1.06	4.63	0.88	0.19	2.75	0.44	0.63	0.63	0.06	0.13	11	69%	3	33%
	Cons.Staples	8	5.63	9	3	1.73	0.63	5.00	0.25	0.38	2.25	1.25	0.88	0.38	0.13	0.13	6	75%	2	22%
	Energy	3	4.67	6	3	1.25	1.67	3.00	1.67	0.00	1.67	0.00	0.33	0.33	0.33	0.33	1	33%	0	0%
	Financials	14	4.21	7	2	1.61	0.50	3.71	0.36	0.14	2.07	0.43	0.21	0.86	0.07	0.07	12	86%	1	14%
	Healthcare	7	4.43	7	2	1.59	0.71	3.71	0.43	0.29	2.29	0.57	0.43	0.00	0.14	0.29	5	71%	1	14%
	Industrials	14	3.86	6	2	0.99	0.79	3.07	0.71	0.07	2.14	0.21	0.29	0.36	0.00	0.07	11	79%	2	33%
	Tech	9	5.33	8	4	1.15	0.89	4.44	0.67	0.22	2.56	0.22	0.56	0.89	0.00	0.22	5	56%	0	0%
	Telecom	4	6.25	8	4	1.48	1.00	5.25	1.00	0.00	2.25	0.25	1.00	0.50	0.25	1.00	4	100%	0	0%
	Utilities	2	7.00	7	7	0.00	1.00	6.00	1.00	0.00	2.50	1.50	0.50	0.50	0.00	1.00	2	100%	1	14%
2022	Basic Mat.	3	4.67	8	3	2.36	1.33	3.33	1.33	0.00	2.67	0.33	0.33	0.00	0.00	0.00	3	100%	1	13%
	Cons.Discr.	16	5.75	9	3	1.56	1.06	4.69	0.88	0.19	2.75	0.44	0.63	0.69	0.06	0.13	11	69%	3	33%
	Cons.Staples	8	4.88	9	2	2.03	0.38	4.50	0.13	0.25	2.00	1.00	0.88	0.25	0.25	0.13	5	63%	2	22%
	Energy	3	4.67	6	3	1.25	1.67	3.00	1.67	0.00	1.67	0.00	0.33	0.33	0.33	0.33	1	33%	0	0%
	Financials	14	3.86	9	2	2.07	0.43	3.43	0.36	0.07	1.93	0.36	0.14	0.79	0.14	0.07	12	86%	0	0%
	Healthcare	7	4.29	6	2	1.39	0.71	3.57	0.43	0.29	2.29	0.43	0.29	0.14	0.14	0.29	4	57%	1	17%

Table 5. Corporate Social Sustainability Risks in the EU and US, 2019-2023; industry data

	Industrials	14	3.86	6	2	1.06	0.79	3.07	0.71	0.07	2.21	0.14	0.29	0.36	0.00	0.07	8	57%	2	33%
	Tech	9	5.11	7	4	0.99	0.89	4.22	0.67	0.22	2.44	0.22	0.56	0.89	0.00	0.11	5	56%	0	0%
	Telecom	4	6.00	8	4	1.58	1.00	5.00	1.00	0.00	2.25	0.25	1.00	0.50	0.25	0.75	4	100%	0	0%
	Utilities	2	7.00	7	7	0.00	1.00	6.00	1.00	0.00	2.50	1.50	0.50	0.50	0.00	1.00	2	100%	1	14%
2021	Basic Mat.	3	4.33	8	2	2.62	1.33	3.00	1.33	0.00	2.67	0.00	0.33	0.00	0.00	0.00	1	33%	1	13%
	Cons.Discr.	16	5.38	9	3	1.49	1.00	4.38	0.81	0.19	2.69	0.38	0.50	0.69	0.06	0.06	10	63%	3	33%
	Cons.Staples	8	4.75	9	2	2.22	0.50	4.25	0.25	0.25	1.88	1.00	0.75	0.25	0.25	0.13	4	50%	2	22%
	Energy	3	4.33	5	3	0.94	1.33	3.00	1.33	0.00	1.67	0.00	0.33	0.33	0.33	0.33	1	33%	0	0%
	Financials	14	3.93	9	2	1.83	0.43	3.50	0.36	0.07	2.07	0.57	0.07	0.71	0.07	0.00	11	79%	0	0%
	Healthcare	7	4.29	6	2	1.39	0.71	3.57	0.43	0.29	2.29	0.43	0.29	0.14	0.14	0.29	4	57%	1	17%
	Industrials	14	3.50	6	1	1.59	0.86	2.64	0.79	0.07	1.93	0.07	0.36	0.29	0.00	0.00	7	50%	1	17%
	Tech	9	4.33	7	3	1.25	0.56	3.78	0.56	0.00	2.33	0.22	0.56	0.67	0.00	0.00	5	56%	0	0%
	Telecom	4	4.50	5	4	0.50	0.50	4.00	0.50	0.00	2.50	0.00	1.00	0.25	0.25	0.00	4	100%	0	0%
	Utilities	2	6.50	7	6	0.50	1.50	5.00	1.50	0.00	2.00	1.50	0.00	0.50	0.00	1.00	2	100%	1	14%
2020	Basic Mat.	3	2.67	4	1	1.25	1.00	1.67	1.00	0.00	1.33	0.00	0.33	0.00	0.00	0.00	1	33%	1	25%
	Cons.Discr.	15	4.53	9	1	2.16	0.80	3.73	0.73	0.07	2.33	0.27	0.47	0.60	0.07	0.00	8	53%	3	33%
	Cons.Staples	8	4.25	9	1	2.33	0.50	3.75	0.25	0.25	1.63	1.00	0.75	0.25	0.13	0.00	4	50%	1	11%
	Energy	3	3.67	4	3	0.47	1.33	2.33	1.33	0.00	1.67	0.00	0.00	0.33	0.33	0.00	1	33%	0	0%
	Financials	14	3.50	9	1	1.99	0.50	3.00	0.43	0.07	1.71	0.50	0.00	0.57	0.21	0.00	8	57%	0	0%
	Healthcare	7	3.71	6	2	1.28	0.43	3.29	0.29	0.14	2.14	0.43	0.29	0.14	0.00	0.29	4	57%	1	17%
	Industrials	14	3.21	6	1	1.70	0.79	2.43	0.71	0.07	1.86	0.00	0.29	0.29	0.00	0.00	6	43%	1	17%
	Tech	9	3.11	5	0	1.52	0.56	2.56	0.56	0.00	1.44	0.11	0.33	0.67	0.00	0.00	4	44%	0	0%
	Telecom	4	3.75	5	2	1.09	0.75	3.00	0.75	0.00	2.00	0.00	0.50	0.25	0.25	0.00	3	75%	0	0%
	Utilities	2	4.50	6	3	1.50	2.00	2.50	2.00	0.00	2.00	0.50	0.00	0.00	0.00	0.00	2	100%	0	0%
• •																				
2019	Basic Mat.	3	1.33	3	0	1.25	0.67	0.67	0.67	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0	0%	1	33%
	Cons.Discr.	15	3.60	9	0	2.73	0.60	3.00	0.53	0.07	1.87	0.20	0.40	0.47	0.07	0.00	6	40%	2	22%
	Cons.Staples	8	3.38	9	0	2.74	0.38	3.00	0.13	0.25	1.25	1.00	0.63	0.13	0.00	0.00	4	50%	0	0%
	Energy	3	2.67	4	1	1.25	1.33	1.33	1.33	0.00	0.67	0.00	0.00	0.33	0.33	0.00	1	33%	0	0%
	Financials	14	2.64	9	0	2.47	0.36	2.29	0.29	0.07	1.14	0.36	0.07	0.57	0.14	0.00	8	57%	0	0%
	Healthcare	7	3.00	10	0	3.12	0.71	2.29	0.57	0.14	1.00	0.43	0.29	0.29	0.00	0.29	4	57%	1	10%
	Industrials	14	2.50	6	0	1.68	0.64	1.86	0.57	0.07	1.43	0.00	0.21	0.21	0.00	0.00	6	43%	1	17%
	Tech	8	2.63	6	0	2.00	0.63	2.00	0.63	0.00	1.25	0.00	0.50	0.25	0.00	0.00	3	38%	0	0%
	Telecom	4	4.00	5	3	0.71	0.75	3.25	0.75	0.00	1.75	0.00	0.75	0.50	0.25	0.00	4	100%	0	0%
	Utilities	2	4.00	6	2	2.00	1.50	2.50	1.50	0.00	2.00	0.50	0.00	0.00	0.00	0.00	1	50%	0	0%

Table 5 shows the average number (AV), the maximum (MAX), the minimum (MIN), and the standard deviation (SD) of corporate social sustainability corporate risks (CSSR) identified by the companies in the sample for the whole period analysed (2019-2023) and for each year under inspection. Data are reported according to the industry the firms belong to. Data also show their classification (Physical - PHY, Transitional - TRA, Chronic - CHRO, Workplace - WORK, end-market - MKT, value chain - VALUE, community - COMM, other - OTH, and generic - GEN) according to Table 3's criteria. MAT_AN and RISK_MNGT columns detail (in absolute number and in percentage) the companies that carried out, following largely accepted guiding principles, a materiality analysis to assess the impact of social issues, and companies fully integrating social risk management in their overall risk management models, respectively. The second column shows the number of companies in each industry in the sample.

The SSRAS offers a cross-sectional perspective on the overall attentiveness to the materiality of social issues. It considers several indicators and compares the maturity of the firms in the sample in managing social sustainability risks, ranging from 0 to 10.

Figure 5 reports the distributions of SSRAS per class of value, for the whole sample, the EU, and the US, respectively. Data are reported for the whole timespan analysed and for each year. When we considered the whole sample, SSRAS values concentrate in the median class. Whilst, in the first years, the data skewed to the right, the last few years showed an inflexion towards high values. None of the companies felt they were in the highest class in 2019. On the contrary in 2023, no firms recorded an SSRAS lower than 2. In general, large EU and US corporations extended their attentiveness towards the impact of social sustainability on their undertakings.

A contrasting perspective characterises the distributions of the EU and the US subsamples, visually confirming the higher maturity in the attentiveness to the material impact of social sustainability matters of EU companies.



Fig. 5 – SSRAS by class of value. The figure presents the SSRAS divided into value classes ($0 \le SSRAS < 2$; $2 \le SSRAS < 4$; $4 \le SSRAS < 6$; $6 \le SSRAS < 8$; $8 \le SSRAS \le 10$) for the full sample, EU, and US subsamples. Note that each class excludes the upper boundary, except for the final class, which includes the maximum value of 10. For reference, the sample consists of 50 European companies and 30 US companies.

Table 6 reports SSRAS average, maximum, minimum, and standard deviation for the whole sample, for EU companies, for US companies, for each industry, and for each EU country. Data are reported for the whole period analysed (2019-2023) and for each year under inspection. EU firms showed a higher average maturity in attentiveness to the materiality of social sustainability issues in the years under inspection. The average SSRAS in the five years under inspection for the EU firms in the sample is 5.72, statistically different at 99% confidence level from the US figure of 4.43¹¹. Significantly higher SSRAS of EU companies compared to their US peers characterised each year under analysis as well.

Interestingly, both in the EU and the US, only from 2021 did all the companies in the sample develop some capacity recognizing and managing social sustainability risks. Indeed, in 2019 and 2020 some US companies showed a null score and some EU firms recorded very low SSRAS. On the contrary, in 2021, the lowest scores were 1.91 and 3.95 for the US and the EU, respectively. This evidence, coupled with the reduction in the standard deviation of the mean values, is symptomatic of the wider attention of large companies to the material implication of social issues. At the same time, some EU companies showed a very high maturity in managing social sustainability risks, compared to the other firms in the sample. In 2019, two EU companies recorded an SSRAS higher than 7.5, four in 2020, six in 2021, seven in 2022, and eleven in 2021. The maximum scores were 7.60, 8.83, 8.96, 8.86, and 8.52, in 2019, 2020, 2021, 2022 and 2023, respectively. In comparison, for the same years, the maximum scores recorded for US companies were 5.79, 5.88, 6.13, 6.32 and 5.98, with only three firms recording an SSRAS higher than 5.5 in 2019, three in 2020, nine in 2021, eleven in 2022, and three in 2023. Anyhow, the attentiveness to social sustainability risks showed different maturity among EU countries. French companies seem to have pioneered the process; its firms recorded the highest average SSRAS each year. The French firms also showed the highest score each year and the group of best SSRAS performers, French firms were the best represented. Although to a lesser extent, Spanish and Italian firms followed a similar pattern, with Dutch companies substantially recovering the gap in recent years. On the contrary, German firms seem to have developed a less mature approach to managing the vulnerabilities and opportunities that may derive from social sustainability issues, so far. Only one German company out of 14 showed scores higher than 7. Each year the lowest SSRAS in the EU area was recorded by a German company. In 2023 still, three German companies showed an SSRAS lower than 4 (there were six in 2019). In any case, US company scores were, on average, lower than German ones, confirming higher maturity of EU firms in managing social material issues.

At the industry level, basic materials and energy showed the lowest average scores in the years under analysis. In particular, whilst basic material companies gained momentum in the risk management capacity of social sustainability risks in the last two years, the energy sector recorded the lowest average value (4.83) in 2023. Telecommunications (5.72 on average in the five years under analysis), consumer staples (5.60), and consumer discretionary (5.47), were the industries more attentive to the impact of social issues on corporate undertakings, along with the utilities, whose figures may be affected by the very low number of companies in the sample. The very low standard deviation in the SSRAS of telecom companies indicates a high level of homogeneity in the sector, concerning the maturity of the approach to managing social sustainability risks. Interestingly, financial companies showed a low attentiveness to the materiality of social issues (the SSRAS, on average, was 5.19, progressing from 4.13 in 2019 to 5.58 in 2023) and recorded the firms in the sample with the lowest value of all, in the last 2 years. Although having companies with a mature approach to social issues, the industrial sector showed low average scores (5.27 in 2023 and 4.90 if considering the whole 2019-2023 period).

¹¹ Non-parametric Wilcoxon-Mann-Whitney t-test for equality in the means is 28.239, rejecting the null hypothesis of equality in the means.

Table 6. Social Sustainabili	y Risks Attentiveness Score	(SSRAS)	, 2019-2023
------------------------------	-----------------------------	---------	-------------

	AV/	OVEF	ALL	SD.	AV/	202 MAX	23 MIN	SD	AV/	202 MAX	22 MIN	SD	AV/	20: MAX	21 MIN	SD	A\/	20 MAX	20 MIN	50	AV/	20 MAX	19 MIN	SD
	Av.	WIAA	IVIIIN	30	AV.	WIAA	IVIIIN	30	Av.	WIAA	IVIIIN	30	AV.	IVIAA	WIIN	30	AV.	IVIAA	IVIIIN	30	Av.	IVIAA	IVIIIN	30
EU + US	5.23	8.96	0.00	1.62	5.59	8.52	2.79	1.33	5.74	8.86	3.12	1.24	5.65	8.96	1.91	1.32	4.99	8.83	0.00	1.47	4.17	7.60	0.00	2.08
EU	5.72	8.96	0.05	1.60	6.11	8.52	2.79	1.34	6.16	8.86	3.12	1.30	6.09	8.96	1.91	1.40	5.38	8.83	0.30	1.54	4.83	7.60	0.05	1.94
US	4.43	6.32	0.00	1.31	4.73	5.98	3.13	0.71	5.03	6.32	3.50	0.71	4.91	6.13	3.75	0.71	4.36	5.88	0.00	1.09	3.13	5.79	0.00	1.87
Basic Mat.	4.57	8.23	0.07	2.70	5.94	7.91	4.53	1.43	6.23	8.11	4.87	1.37	4.71	8.23	1.91	2.63	3.99	7.87	0.30	3.09	1.99	4.88	0.07	2.08
Cons.Discr.	5.47	8.96	0.00	1.84	5.79	8.52	4.23	1.35	6.13	8.86	4.59	1.29	6.03	8.96	4.28	1.49	5.27	8.83	3.13	1.54	4.08	7.60	0.00	2.46
Cons.Staples	5.60	8.26	0.40	1.57	5.76	7.85	3.13	1.52	6.03	8.23	3.50	1.50	6.01	8.26	3.75	1.40	5.51	7.67	3.95	1.08	4.68	6.43	0.40	1.86
Energy	4.64	7.16	2.10	1.32	4.83	6.84	3.65	1.43	5.17	7.16	3.92	1.42	4.95	6.27	4.08	0.95	4.45	5.58	3.77	0.81	3.78	5.50	2.10	1.39
Financials	5.16	8.07	0.05	1.53	5.58	8.07	2.79	1.35	5.49	7.24	3.12	1.11	5.60	7.17	3.28	1.11	5.01	7.25	2.40	1.35	4.13	6.82	0.05	2.02
Healthcare	5.16	7.83	0.06	1.48	5.33	7.83	3.42	1.42	5.40	6.76	3.82	1.06	5.51	6.89	3.93	1.05	5.24	6.56	3.76	0.97	4.35	6.47	0.06	2.20
Industrials	4.90	8.21	0.04	1.36	5.27	8.21	3.64	1.17	5.30	7.89	3.99	1.13	5.16	7.27	4.00	1.12	4.68	6.72	3.43	1.07	4.11	6.74	0.04	1.80
Tech	5.21	7.31	0.00	1.63	5.47	6.98	4.00	1.08	5.74	7.23	4.47	0.95	5.78	7.31	4.44	0.98	4.79	7.05	0.00	1.96	4.13	7.04	0.00	2.16
Telecom	5.72	6.90	3.99	0.57	5.82	6.57	5.55	0.43	6.12	6.90	5.70	0.46	5.94	6.09	5.78	0.12	5.19	5.93	3.99	0.75	5.54	5.93	4.97	0.36
Utilities	5.97	7.63	3.46	1.26	7.14	7.63	6.65	0.49	6.95	7.04	6.85	0.10	6.58	7.09	6.06	0.51	4.84	5.21	4.47	0.37	4.37	5.27	3.46	0.90
FRA	6.39	8.96	3.65	1.31	6.56	8.52	3.65	1.39	6.68	8.86	3.92	1.36	6.66	8.96	4.08	1.32	6.19	8.83	3.77	1.23	5.84	7.60	3.75	1.02
GER	4.76	7.31	0.05	1.73	5.11	6.98	2.79	1.13	5.42	7.23	3.12	1.10	5.18	7.31	1.91	1.42	4.54	7.05	0.30	1.66	3.56	7.04	0.05	2.33
ITA	5.99	7.99	3.46	1.16	6.73	7.99	5.19	1.03	6.49	7.16	4.93	0.84	6.43	7.14	5.26	0.68	5.28	6.94	4.47	0.91	5.01	6.82	3.46	1.11
NED	5.71	8.07	2.30	1.68	6.78	8.07	5.88	0.90	5.85	7.84	3.71	1.41	5.92	7.99	3.84	1.47	4.84	7.67	2.40	1.96	4.64	6.43	2.30	1.71
SPA	6.22	8.40	5.13	0.93	6.19	7.68	5.13	1.04	6.57	8.02	5.48	0.97	6.60	8.40	5.91	1.04	5.91	6.90	5.21	0.62	5.82	6.73	5.27	0.58
отн	5 / 2	7 1 2	0.40	1.46	5.20	6.57	4.66	0.77	6 17	6.00	1 93	0.84	6 16	7 1 2	5 1 /	0.71	5 10	5.86	2 01	0.77	3 07	5.86	0.40	2 17
NED SPA OTH	5.71 6.22 5.43	8.07 8.40 7.12	2.30 5.13 0.40	1.68 0.93 1.46	6.78 6.19 5.80	8.07 7.68 6.57	5.88 5.13 4.66	0.90 1.04 0.77	5.85 6.57 6.17	7.84 8.02 6.99	3.71 5.48 4.93	1.41 0.97 0.84	5.92 6.60 6.16	7.99 8.40 7.12	3.84 5.91 5.14	1.47 1.04 0.71	4.84 5.91 5.10	7.67 6.90 5.86	2.40 5.21 3.91	1.96 0.62 0.77	4.64 5.82 3.92	6.43 6.73 5.86	2.30 5.27 0.40	1 0 2

Table 6 shows the average (AV), the maximum (MAX), the minimum (MIN), and the standard deviation (SD) of the social sustainability risk awareness score (SSRAS), calculated according to Eq. (1) for all the companies in the sample (EU+US), for EU companies, for US companies, for each industry and for each EU country, for the whole period analysed (2019-2023) and for each year under inspection. The group OTH (other) comprises firms from Belgium, Finland (#2), and Ireland. For comparison, the sample is composed of 50 EU companies and 30 from the US.

6. The determinants of large EU and US companies' attentiveness to social sustainability risk

After describing the evolution of the Social Sustainability Risk Attentiveness Score, we conducted a within panel regression analysis with individual and time effects, to explore possible determinants of large EU and US companies' attentiveness to social sustainability risks. In detail, we regressed the SSRAS as a dependent variable on a series of potential determinants of corporate attentiveness to social risk, which aligns with the groundwork in previous literature.

Since Max Weber's pioneering studies, the impact of culture on various socio-economic phenomena has been the subject of much research in the social sciences. "Cross-cultural psychology" concerns the nature of the basic problems of societies that would present distinct traits of culture and outlines the existence of prominent cultural attributes that characterise social groups, which give their members a sense of unity and inform the group's social norms, values, and behaviour (Schwartz, 1994; Trompenaars and Hampden-Turner, 1997; Inglehart and Welzel, 2005). Cetenak et al. (2017) argued that national culture strongly influences an organisation's culture, shaping firms' policies, norms, practices, and decision-making process.

Consistently, a notable but somewhat underrated stream of study in the CSR field postulated that different cultural dimensions, i.e. cultural aspects that can be measured relative to other cultures, are associated with differences in environmental sustainability (Park et al., 2007), corporate social performance (Ringov and Zollo, 2007), corporate ethical conduct (Scholtens and Dam, 2007), propensity and orientation towards sustainability (Caprar and Neville, 2012), employees' socially responsible attitude and behaviour (Mueller et al., 2012), and sustainability practices (Miska et al., 2018), etc. Parboteeah et al. (2012) analysed a sample of 42,346 individuals from 33 countries, highlighting that cultural traits, such as performance orientation and assertiveness, harm the proneness to undertake sustainability initiatives, while collectivism, future orientation, and human orientation have a positive effect. On a similar standpoint, Perkins et al. (2022) postulated that national culture is a driver of corporate CSR disclosure quality. Exploring the moderating impact of cultural factors on the relationship between CSR and company performance, Shi and Veenstra (2021) underlined a stronger effect of non-financial commitments on the financial performance when CSR initiatives are congruent with country-level cultural orientations. Recently, Roszkowska-Menkes (2024) argued that national cultural attributes are not a negligible determinant when explaining the effectiveness of ESG-linked executives' pay over curbing socially irresponsible corporate practices.

Of all the models which attempt to systematise cross-cultural dimensions, Hofstede's (Hofstede et al., 2010) gained undisputed prominence, since it provides detailed information about key dimensions of culture. The classification system it introduced differentiates national cultures, based on six basic issues that society needs to come to term with, to organise itself: a) power distance (PDI); b) uncertainty avoidance (UAI); c) collectivism vs. individualism (IDV); d) femininity vs. masculinity (MAS); e) long-term orientation (LTO); and f) restraint vs. indulgence (IVR). The authors measured these dimensions of culture on a relative scale ranging from zero to 100 for a large set of countries. Their system has been extensively used in a broad spectrum of social science, CSR included, becoming a standard in cross-cultural research.

Huang et al. (2022) adopted Hofstede's measures to explore heterogeneities in the approach towards environmental sustainability at the country level, finding evidence of a negative effect of power distance and masculinity on a sample of 57 countries' environmental performance. On a firm-level standpoint, Thanetsunthorn (2015) found evidence of heterogeneous approaches to CSR on a sample of 3,055 corporations from Eastern Asia and Europe. Intriguingly, Gallèn and Peraita (2017) highlighted the heterogeneous impact of cultural factors on corporate CSR disclosure depending on the country's GDP per capita. Using a sample of 780 non-financial firms from nine countries, Mhiri et al. (2024) recently examined the moderating role of the national cultural dimension in the relationship between capital structure and CSR. Their analysis revealed that high CSR performances significantly decrease firms' financial leverage. Moreover, they argued that such an inverse relationship tends to diminish among firms operating in cultures characterised by higher levels of power distance, masculinity, long-term orientation, indulgence, and uncertainty avoidance.

We employed this system and its scale to verify whether national cultural traits are one of the determinants that explain the substantial differences in the attentiveness to social sustainability risk between corporations from different countries, postulated by our analysis on large EU and US companies.

At the same time, our results suggest that employee-related are the most sought social sustainability risk large EU and US firms are attentive to. Employees have a crucial role as stakeholders considering social considerations and companies acknowledge their relevance in a firm's operations. Gaudencio et al. (2016) showed that CSR is a driver of workers' actual behaviours. Employees tend to be more involved in the company and develop a stronger organisational trust if the firm shows higher CSR performance. Similarly, Lévesque et al. (2018) observed that CSR at the firm-level influences how companies conform to International Framework Agreements (IFAs) and pursue workers' rights. As straightforwardly outlined by Fernandez-Feijoo et al. (2014), workers may compel firms to pursue sustainable policies and practices and force higher transparency in sustainability reporting. More recently, Ting (2021) predicted that bigger companies, proxied by the number of their employees, tend to disclose more information about their CSR engagement, whilst Yue et al. (2024) highlighted strong negative employees reactions to socially irresponsible corporate practices directed towards external stakeholders (e.g. consumers, suppliers, community, and the environment). Consistent with this, the hypothesis that the workforce is a substantial driver of firms' attentiveness to socially related matters cannot be discarded.

Furthermore, a strand of the existing literature postulates that ownership structure can substantially affect the extent to which a company orientates towards social responsibility. Among others, Oh et al. (2011) and Muttakin and Subramaniam (2015) concluded that different classes of owners may have very different objectives to pursue, as well as different decision-making horizons (long-term versus short-term). In this vein, Pareek and Sahu (2022) observed a positive impact of government ownership on corporate social responsibility performance. Accordingly, Rees and Rodionova (2015), Block and Wagner (2014), and Nikolakis et al. (2021) found that family ownership heterogeneously affected corporate CSR engagement. More specifically, Block and Wagner (2014) highlighted that family ownership is negatively associated with community-related CSR performance but positively and significantly associated with diversity, employee, environmental and product-related aspects of CSR. Furthermore, Nikolakis et al. (2021) underscored that conflicts, trust and socio-emotional wealth might heterogeneously affect environmental and social sustainability efforts in family firms. We also explored whether different types of ownership could heterogeneously affect a firm's attentiveness to social issues.

The literature on corporate social responsibility has long debated the differences between industries. On the one hand, investors carefully consider within-industry benchmarks to assess the sustainability performance of firms and evaluate corporate sustainability profiles through industry-level standards (Cordeiro and Tewari, 2014; Mariani et al. 2024). On the other hand, the literature has long focused on differences between business sectors. A primary classification lies in the identification of socially controversial industries (Michelson et al., 2004). In this regard, Jo and Na (2012) underlined that a stronger CSR performance reduces risks more strongly in firms operating in controversial industries than in non-controversial industries. Furthermore, the literature has shown an increasing interest in corporate social responsibility, focusing on the heterogeneous strategies of firms operating in different sectors. In this sense, numerous studies have shown that the reference industry can lead to differences in the degree to which CSR is integrated (Chih et al., 2010; Young and Marais, 2012; El Baz et al., 2016; de la Cuesta-Gonzalez et al., 2006; Keenan et al., 2019). At the same time, the analysis carried out in Section 5 highlighted substantial differences between industries in terms of their approach to social sustainability risk. Therefore, industry-fixed effects are introduced in our model, to control for stable inter-industry heterogeneity in corporate social sustainability risk attentiveness.

To derive insights into the actual drivers of social sustainability risk attentiveness, we developed the panel regression model in Eq. (2). In particular, we are interested in verifying whether differences in the SSRAS can explain by cross-country cultural traits, company ownership, the industry, and the human capital orientation of its operations. The model also controls for well-known financial variables (namely size, profitability, and leverage) that are consistently assumed

to have a potential impact on the attentiveness of large corporations on sustainability matters. Firm size may affect companies' sustainability initiatives because larger firms have greater availability of resources, capacities, and competencies that ease the development of sustainability practices (Ioannou and Serafeim, 2012; Ali et al., 2017; Velte, 2022). Therefore, we controlled for company size, proxied by the company's market value, similar to several other studies in the CSR field (Reverte, 2009; Graetz and Franks, 2015; Gantchev et al. 2022, among others). Furthermore, to investigate the extent to which more profitable companies could distribute slack resources to pursue social sustainability goals, relative to their less profitable peers (see Waddock and Graves, 1997; Endrikat et al., 2014), we controlled for a firm's economic performance by using ROA as a proxy (Reverte, 2009; Chih et al., 2010; Jo & Na, 2012; Ting, 2021; Zhu and Wang, 2024). Finally, we included the total debt over total assets ratio to account for possible differences owing to firms' leverage, which is consistent with the literature (Jo & Na, 2012; Ting, 2021; Zhu and Wang, 2024) and the idea that higher indebtedness might lead companies to prioritise efforts to reduce their looming credit risk, compared to non-financial considerations.

Hofstede (2011) argued that, when relating the six cultural dimensions with other data, national wealth should be always considered. The author observed that individualism and (small) power distance correlate significantly with country-level prosperity. At the same time, the literature on the subject (Parboteeah et al., 2012; Gallén and Peraita, 2017; Huang et al., 2024) suggested that stakeholders in higher spending, wealthy countries expect higher requirements for corporate sustainability-related practices. Accordingly, we included the Gross Domestic Product (GDP) in the model, to control for national wealth. This is consistent with a large part of the existing literature speculating on Hofstede et al.'s (2010) cultural dimensions (Miska et al., 2018, Gallén and Peraita, 2017; Shi and Veenstra, 2021; Huang et al., 2024).

Due to possible time-lag effects, we one-year lagged the control variables. In addition, owing to high kurtosis, they were log-transformed.

Finally, the model controls for possible time effects, depending on time-dependent firm-invariant idiosyncrasies and from the non-longitudinal comparability of the scores. The main dependent and independent descriptive statistics are reported and discussed in Appendix 2, along with the correlation matrix.

The model employed is as follows (Eq. 2):

 $SSRAS = \alpha + \beta_W WORKFORCE_{it} + \Sigma \beta_{CULT1-6} CULT_DIM_i + \Sigma \beta_{OWN1-6} OWNERSHIP_{it} + \Sigma \beta_{ICB} INDUSTRY_i + \beta_s SIZE_{it-1} + \beta_P ROA_{it-1} + \beta_L LEVERAGE_{it-1} + \beta_G GDP_{it-1} + \varepsilon_{it}$ (2)

where:

WORKFORCE_{it} is the natural logarithm of the average (semisum of the beginning and end of year values) total workforce of company i in the year t;

CULT_DIM_i are the values of the six Hofstede et al.'s (2010) cultural dimensions for the country where company i is headquartered;

OWNERSHIP_{it} expresses the average percentage (semisum of the beginning and end of year values) of total shares held by six different categories of shareholders in company *i* in year *t*: EMPLOYEES (shares in issue held by company employees or by those with a substantial position in the company that provides significant voting power at an annual general meeting - typically family members), GOVERNMENT (shares in issue held by the Government or Government institutions), INVESTMENT_CO (long-term strategic holdings by investment banks or institutions), HOLDING_CO (shares in issue held by one company in another), FREE_FLOAT (capital freely available to ordinary investors), OTHER (all strategic holdings falling outside the other categories);

INDUSTRY_i is a categorical variable expressing the first level Industry Classification Benchmark (ICB) of company i, with Energy as the reference category;

SIZE_{it-1} is the dimension of company *i* in year *t*-1, proxied by the natural logarithm of the US minimum market value at the end of year *t*-1;

ROA_{it-1} is a measure of the profitability of company *i* in year *t*-1, proxied by return on asset of year *t*-1;

LEVERAGE_{it-1} is a measure of the indebtedness of company *i* in year *t*-1, proxied by the ratio of total debt and total capital at the end of year *t*-1;

GDP_{it-1} is the Gross Domestic Product of year t-1 for the country where company *i* is headquartered, expressed in constant 2015 US\$, so as to avoid any possible monetary bias;

 $\epsilon_{it}\,is$ the error term.

Cultural dimension data were collected from www.geerthofstede.com (version 2015-08-12), whilst gross national product (GNP) figures were taken from the worldbank database (https://data.worldbank.org). All other data were retrieved from the LSEG Workspace.

Table 7 shows the results of the regression analysis on the determinants of the SSRAS.

Table 7. Eq. (2) panel regression results

DEPENDENT variable: SSRAS												
	Estimate	St.Error	t-value	Pr(> t)								
(Intercept)	21.090	14.054	1.501	0.134								
WORKFORCE	0.146	0.073	2.006	0.046	*							
PDI	0.147	0.037	3.941	0,001	***							
IDV	-0.047	0.023	-2.021	0.044	*							
MAS	-0.029	0.011	-2.535	0.012	*							
UAI	-0.135	0.047	-2.870	0.004	**							
LTO	-0.003	0.010	-0.258	0.796								
IVR	-0.085	0.028	-3.045	0.002	**							
Ownership_EMPLOYEES	-0.034	0.037	-0.914	0.361								
Ownership_GOVERNMENT	-0.036	0.037	-0.967	0.334								
Ownership _INVESTMENT CO.	-0.0380	0.040	-0.941	0.347								
Ownership_HOLDING CO.	-0.0513	0.037	-1.368	0.172								
Ownership_FREE FLOAT	-0.044	0.036	-1.209	0.228								
Ownership_OTHER	-0.031	0.043	-0.729	0.466								
Basic Materials	0.331	0.485	0.682	0.495								
Consumer Discretionary	0.728	0.430	1.694	0.091								
Consumer Staples	1.468	0.428	3.429	0.001	***							
Financials	0.816	0.388	2.103	0.036	*							
Healthcare	1.059	0.405	2.616	0.009	**							
Industrials	0.426	0.376	1.132	0.256								
Technology	1.526	0.412	3.703	0.000	***							
Telecommunications	1.844	0.447	4.127	0.000	***							
Utilities	0.946	0.535	1.768	0.078								
SIZE	-0.492	0.116	-4.244	0,000	***							
ROA	0.029	0.015	1.923	0.055								
LEVERAGE	-0.006	0.003	-1.842	0.066								
GDP	0.194	1.284	0.151	0.880								
Individual effect			YES									
Time effect			YES									
F-statistic:	12.311***	on 30 and 353	degrees of fr	eedom, P-Va	al: 0,000							
Total Sum of Squares	999.14											
Residual Sum of Squares	488.27											
R-Squared:	0.511											
Adj. R-Squared:	0.470											
Residuals:	Min	1st	Median	3rd	Max							
	-4.100	-0.654	0.098	0.708	2.831							
Significant codes:	*** 0.001	** 0.01	* 0.05	• 0.1								

Table 7 shows the results of the regression analysis on the determinants of the SSRAS following Eq. (2). The sample includes 50 companies from the EU and 30 from the US, with a total of 397 observations. The dependent variable (SSRAS) indicates the social sustainability risk attentiveness score for the companies within our sample. The independent variables are computed as follows: WORKFORCE represents the natural logarithm of the average total workforce of company i in year t. The six Hofstede cultural dimensions (PDI – power distance index; IDV – individualism vs. collectivism; MAS – masculinity vs. femininity; UAI – uncertainty avoidance; LTO – long-term orientation; IVR – indulgence vs. restraint) are included for the country where each company is headquartered. OWNERSHIP reflects the average ownership percentage across six shareholder categories: EMPLOYEES, GOVERNMENT, INVESTMENT_COMPANY, HOLDING_COMPANY, FREE_FLOAT, and OTHERS. INDUSTRY categorises companies based on the Industry Classification Benchmark (ICB). Control variables include: SIZE, measured as the natural logarithm of market value in US dollars at year t-

1; ROA, measured as the return on assets for year t-1; LEVERAGE, measured as the ratio of total debt to total capital at year t-1; and GDP, measured as the GDP in constant 2015 US dollars. Significance levels are indicated as follows: *** p < 0.001, ** p < 0.01, * p < 0.05, p < 0.1. Standard errors are robust to heteroskedasticity.

First and foremost, our results underline that a large workforce pushes the company towards a more careful consideration of the social sustainability risks associated with their operations. Workers are crucial among the plethora of a firm's stakeholders, especially when it comes to social sustainability issues that may stem from accidents (physical) or from the transition to a more just and equal economy (transition). Our primary variable of interest, therefore, reflects the influence of workforce size. Consistent with our expectations, we find a positive association between a higher number of employees and an increased attentiveness to social sustainability sources of risk, with a statistically significant coefficient of 0.146 at the 95% confidence level. This suggests that companies with a larger workforce and consequently greater exposure to human resource-related social sustainability risks are more likely to incorporate social sustainability considerations into their risk management processes. Economically, our results predict a 0.096 SD increase in the SSRAS per one SD increase in the average natural logarithm of the number of employees.

Furthermore, we delve into the cultural antecedents of heightened effort towards social sustainability risk attentiveness. Five out of six of Hofstede's cultural dimensions seem to significantly explain the variability in the attentiveness we measured in large EU and US corporations, consistent with the stream of literature reviewed above, postulating that cultural traits are not an omittable variable when explaining socially responsible corporate behaviour.

As for our analysis, companies in our sample in larger power distance countries are more attentive to the social sustainability riskiness of their business (the regression coefficient of 0.147 is statistically significant at a 99% confidence level). PDI is a measure of inequality (more versus less) intended to assess how power distributes within a society and how readily inequality in the concentration of power is accepted by the powerless. Consequently, companies located in high power distance countries face a more challenging transition towards a more equal society, compared to small power distance countries, inducing firms to be more attentive to the social risks burdening their operations, consistent with our results.

Uncertainty Avoidance (UAI) measures the extent to which people in a society feel comfortable in unknown, unstructured situations, with scores ranging from 0 (high tolerance) to 100 (strong avoidance). Cultures high in UAI tend to minimise uncertain situations through stringent behavioural codes, laws, and regulations. Contrary to our expectations, the results predict that companies in cultures characterised by greater uncertainty avoidance attitudes exhibit a lower attentiveness to social sustainability risks (the regression coefficient of -0.135 is statistically significant at 95% confidence level). Since uncertainty avoidance is often linked to routine and prejudice for innovation and changes in the usual way of living (Ringov and Zollo, 2007; Hofstede et al., 2010), it may be the case that firms in high UAI countries have a lower capacity of addressing the complexities involved in managing social sustainability issues and are reluctant to be particularly attentive to social sustainability risk, since they fear that this may substantially challenge their usual business and risk management frameworks. At the same time, some scholars (Ho et al., 2012; Peng et al., 2014; Miska et al., 2018) have shown that a higher degree of UAI is associated with better performing ESG practices. Therefore, higher uncertainty avoidance cultures should experience less severe social challenges and consequently, their firms may be less attentive to its riskiness, which may also explain our contradictory results.

The dimension of collectivism versus individualism relates to the degree to which people in a society integrate into groups. Individualist cultures (valued high on the Hofstede et al. (2010) scale) are considered free from collectivistic obligations and everyone should look after themselves and their immediate family. On the other hand, in collectivist cultures (valued low on the Hofstede et al. (2010) scale), people are integrated into strong, cohesive in-groups and take care of shared interests. Firms in highly individualistic societies are, therefore, expected to be less concerned about the broader impact of business on society (Ringov and Zollo, 2007). Consistent with this, our results show a negative relationship between IDV and SSRAS (the regression coefficient of -0.029 is statistically significant at 95% confidence level).

Femininity versus masculinity relates to the emotional character of a society (not the individuals in it). In feminine cultures (there are low values for this dimension in the Hofstede et al. (2010) scale), modesty, inclusion, concern for the quality of life, and caring are the most recurrent attributes. On the contrary, masculine societies (there are high values for this dimension on the Hofstede et al. (2010) scale) are typified by assertiveness, competition, and the pursuit of material goals. Highly masculine societies place low value on caring for others, inclusion, cooperation, and solidarity. Career advancement and material success are paramount. Our analysis suggests that the masculine cultural traits of the country where the firm is located reduce its attentiveness to social sustainability-related risks (the regression coefficient of -0.047 is statistically significant at 95% confidence level).

The long-term versus short-term (LTO) dimension relates to whether people focus on the future, the present, or the past. In a long-time-oriented culture (valued high on the Hofstede et al. (2010) scale), preparing for the future is the usual way of living since life is intended to always be in flux. To the contrary, in a short-time-oriented culture, the world is essentially as it was created, so that the past provides a moral compass. Adaptation to the circumstances, trying to learn from others, thrift, and perseverance are the main characteristics of long-term oriented cultures, whilst short-term oriented ones pay a lot of consideration to traditions, their country, personal steadiness and stability. A significant positive relationship between SSRAS and LTO should have been expected. In contrast, our model predicts that the long versus short-term

cultural orientation does not significantly impact the social sustainability risk attentiveness of the companies in the sample (P-value: 0.88).

The sixth dimension, added to the Hofstede's system in 2010, focuses on aspects developed from the literature on "happiness research". Indulgence (high values in the dimension's scale) stands for a society that allows the relatively free gratification of basic and natural human desires related to enjoying life and having fun. Restraint cultures (low values in the dimension's scale) denote societies that control the gratification of needs and regulate it employing strict social norms. Fewer very happy people, lower birth rates, and a common perception of helplessness characterise restrained cultures. On the other side, freedom of speech and leisure are of the utmost importance in indulgent societies and the perception of personal life control is widespread among the population. Consequently, major social sustainability issues are latent in more restrained cultures, which induce corporations to be more attentive to social risks, consistent with our results (the regression coefficient of -0.085 is statistically significant at 95% confidence level).

As already argued, we expected the ownership structure to be relevant in explaining the different degrees of attentiveness to social sustainability risks, since the inclination and the strategic approach to sustainability could vary across different categories of shareholders (Oh et al., 2011; Muttakin and Subramaniam, 2015). Despite the theoretical expectations, our analysis reveals that the shareholder structure does not significantly influence the SSRAS. This suggests that specific ownership types do not distinctly affect a company's attentiveness to social sustainability. This lack of significant impact may be due to the increasing emphasis on social sustainability across all holding strategies, which pressures large companies to consider social sustainability practices, irrespective of their ownership structure.

Striking differences are evident between industries. The differential significance of the industry indicators in the model (to be referred to the reference category, which is the energy sector) not only reflects the heterogeneous impact of regulatory pressures but also highlights the different consumer and employee-related concerns at the industry level. In sectors like consumer discretionary and consumer staples, as well as healthcare, the direct interaction with end-customers and the need to safeguard their well-being seem to mirror a higher attentiveness to social risks. Substantial regulatory demands, due to the direct implications for consumer health, as well as changing market dynamics (already emerging in the Table 4 results) push companies to heighten their social sustainability attentiveness, as evidenced by significant positive regression coefficients in the healthcare ($\beta = 1.059$, p-value = 0.009), consumer staples ($\beta = 1.468$, p = 0.001) and consumer discretionary sectors (β = 0.728, p-value = 0.091). In the most rapidly evolving industries, such as technology and telecommunications, the model predicts a significantly higher attentiveness to social sustainability risks (technology at $\beta = 1.526$, p-value = 0.000; telecommunications at $\beta = 1.844$, p-value = 0.000). This highlights the need to account for privacy concerns, as well as the potential effects of technological changes on end customers and the workforce. This significance matches the evidence emerging from Table 4, where social transition risks, specifically for the workforce, are highlighted. In other words, these are the sectors in which the need to innovate strikes with the need to manage the complex consequences of technological changes on consumer trust and workforce dynamics. Interestingly the financial sector displays moderate but significant responsiveness to social risks ($\beta = 0.816$, p = 0.036), where the focus is inherently on financial risk management but increasingly includes considerations of social risk factors. This reflects an integrated approach to employee well-being and ethical considerations in financial operations (according to our analysis reported in Section 5, financials are among the most prominent sectors concerned with the community of belonging). Conversely, sectors such as industrials, basic materials and utilities, which are less directly connected to end-consumers and subject to operational risks related to environmental more than social aspects, experience lower, marginally significant coefficients (β =0.946, p-value = 0.078 for the utilities), or non-significant coefficients (β = 0.331, p-value = 0.495 for basic materials; $\beta = 0.426$, p-value = 0.256 for industrials). These figures do not imply a lack of attention to social sustainability issues but, rather, a significantly lower effect on the SSRAS compared to other industries which are more embroiled in social sustainability issues.

Almost all of the control variables showed the expected coefficient sign. As predicted, more profitable companies (ROA) seem more prone to be socially attentive. Although barely significant (90% confidence interval), the coefficient equal to 0.029 indicates that companies with a higher return on assets dedicate heightened efforts and resources to the preventive mitigation of the insurgence of social sustainability risks. Moreover, our results postulate that companies experiencing higher indebtedness (leverage) are less attentive to social sustainability matters ($\beta = -0.006$, p = 0.066). This result is consistent with the expectation that more indebted companies are more attentive to reducing their looming credit risk than to non-financial considerations.

A potentially counter-intuitive result emerges from the analysis of the coefficient of the size (-0.492 statistically significant at the 99% confidence interval). The result suggests that higher market-value companies focus less on the social aspects of sustainability. Economically speaking, a one SD increase in the natural logarithm of the market capitalisation corresponds to a 0.276 SD decrease in the attentiveness score. This misleading evidence can be justified by considering our sample's high overall average dimensionality, which includes the largest companies for market capitalisation in the Eurozone and the US. The results are also consistent with some sort of U-shaped relationship between social risk attentiveness and size, or with a "too big to be socially attentive" hypothesis, which calls for further dedicated analysis in the field.

Lastly, the country's GDP does not seem to influence the social attentiveness of the companies within our sample.

The high R-squared and adjusted R-squared values suggest that our analysis captures almost half of the variability of the SSRAS. In addition, the statistically significant value of the F-Statistic and the statistical insignificance of the constant term make us confident in the model fitting, reinforcing the soundness of the findings.

7. Summary and conclusions

Social sustainability refers to the ability of a society to maintain and improve the well-being of its current and future members, ensuring the resilience of its societal systems. From a business perspective, social sustainability relates to the impact of corporate operations on people and society. Similar to climate change, the current societal transformation and the ongoing process towards a more inclusive, equal, and cohesive society are exposing companies to unprecedented sources of potential vulnerabilities and opportunities. In contrast to environmental and climate change risks, very little has been studied about the social sustainability risks that modern corporations are unavoidably facing, their sources, their drivers, and the way companies deal with them. With the aim of incentivising discussion and stimulating follow-up work, we contributed to this overlooked field of study and tried to fill some of the gaps in knowledge.

At first, to overcome the absence of a largely accepted consensus about its notion and main features, we speculated on the concept of corporate social sustainability risk (CSSR). We conceived CSSR from a strict microeconomic, single materiality perspective and included both the opportunities and the vulnerabilities that have the potential to impact corporate undertakings as a consequence of social factors and ongoing societal challenges. Besides this, we proposed a classification of the sources of CSSR that discerns physical from transition CSSR, in the conviction that mirroring the usual classification of climate and environmental risk can facilitate its recognition and management. We also disentangled the main sources of physical and transition CSSR, along with the complexities that may derive from their interconnections.

Thereafter, we analysed the extent to which large US and EU companies acknowledge and manage CSSR. The results of the analysis carried out on all the companies included in the EuroStoxx50 and the DowJones30 indexes on 31.12.23, showed that, on average, the number of social risks identified by the companies in the sample substantially rose from 2.96 in 2019 to 4.94 in 2023. EU firms identified a statistically significant higher number of CSSRs in the years under inspection (4.48 compared to 3.65 for US companies, on average). Transitional social sustainability risks seem to worry EU and US companies more than physical risks. Indeed, on average, the companies in the sample identified more than four transition CSSRs per each physical risk recognised. Injuries and accidents in the workplace were the most common acute physical social sustainability risks identified, followed by personal data breaches. Increasing costs of compliance with socially related regulations (including extended social disclosure) was the most recurring chronic social risk that companies in the sample were worried about. Transition social sustainability risks related to employees and the workplace (particularly human capital management, human rights, diversity, equality and inclusion) were the most recurring types for EU and US companies in the 5 years analysed. Interestingly, for some US tech companies, the social and responsibility facets of artificial intelligence are issues of emerging social material concern, different from EU companies, who do not seem to have approached the issue as yet. CSSR is always more fully integrated into the overall risk management framework of EU firms and almost all the EU companies which were analysed employed a materiality analysis to assess the impact of social sustainability risks on their undertakings. In comparison, US firms show a slower process. Striking differences are evident when the EU data are split based on the country where the company is headquartered. France is leading the process; on average, its firms acknowledged that 5.66 social risks have a material impact on their undertakings each year. Spanish (5.25) and Italian companies (4.60) followed. Opposite to this, Dutch (3.89) and German corporations (3.31) showed a pattern that resembled US firms more than their EU counterparts. Industries also seem to be approaching CSSR along different paths. Consumer discretionary is the sector that showed the greatest awareness of the materiality of social issues, followed by telecommunications. At the same time, consumer staples companies paid the greatest attention to social sustainability risks related to the end-market, particularly to the healthiness of their products and to the social responsibility of their marketing practices. Compared to the other sectors, consumer staples and telecommunications are more focussed on managing social opportunities and vulnerabilities arising from the management of social sustainability issues in the value chain, whilst energy and basic materials companies are particularly concerned by physical risks. Together with industrials and financials, basic material companies recognised the lowest average number of social sustainability risks in the years under inspection.

Next, we developed a score aiming at measuring the relative attentiveness of companies to social sustainability risks (SSRAS). The score takes into account several indicators comparing the maturity of the firms in the management of social sustainability risks. The analysis of the scores of the companies in our sample found intriguing results. In general, large EU and US corporations increased their attentiveness towards the impact of social sustainability on their undertakings in the years studied. A contrasting perspective characterises the distributions of the SSRAS in the EU and the US subsamples, highlighting a higher maturity in the attentiveness to the material impact of social sustainability matters of EU companies. Anyhow, the attentiveness to social sustainability risks showed different levels of maturity among EU countries. French companies seem to have pioneered the process; their firms recorded the highest average SSRAS each year. At the industry level, basic materials and energy showed the lowest average scores in the years under analysis.

Finally, by exploiting a panel regression model, we provided statistical evidence that cross-country cultural traits (proxied by Hofstede's six dimensions framework), industry, and the human capital orientation of firms' operations, impact on the level of a company's attentiveness to social sustainability vulnerabilities and opportunities. In particular, we argued that power distance, uncertainty avoidance, masculinity, individualism, and cultural dimensions significantly explain the variability in the attentiveness to CSSR measured. This is consistent with the literature, which postulated that cultural traits are not an omittable variable when explaining socially responsible corporate behaviour. Moreover, our results underlined that the larger the workforce, the more attentive the company is towards the social sustainability risks associated with their operations. Indeed, we found a positive and statistically significant association between the number of employees and the attentiveness score, suggesting that companies with a larger workforce, and, consequently, greater exposure to human resources related to social sustainability risks, are more likely to incorporate social sustainability considerations into their risk management processes. Statistically significant differences between industries, in the attentiveness to social sustainability matters, are also predicted by our model, reflecting the heterogeneous impact of regulatory pressures and the different consumer and employee-related concerns at the sector level. Despite our expectations, our panel regression analysis revealed that the ownership structure of a company does not influence the SSRAS to a statistically significant extent.

This paper expanded on the earlier debate on the impact of social sustainability on corporate undertakings and made several contributions to the current body of literature.

First, we bridged the gap in the conceptualisation and classification of corporate social sustainability risk by developing a clear notion that avoids the unnecessary complication and confusion of terms and identifies its main characteristics from a financial perspective. This will facilitate future research in the field and the comparison of results.

Next, we provided systematic and comprehensive empirical evidence on the ongoing process of identifying and managing CSSR in large EU and US firms. We highlighted, among other things, the existence of substantial geographical and sectorial differences, contributing to filling gaps in the knowledge of the actual way that companies are aware of and ponder social issues impacting their business.

Thirdly, we contributed to addressing the need for measurement and comparison tools for the analysis of corporate social sustainability risk, by developing a score that measures companies' relative attentiveness. The score compares companies' maturity in managing social sustainability risks and can be easily replicated, facilitating the dissemination of studies that expand knowledge in the field.

Finally, we reinforced the evidence that a country's cultural differences significantly affect companies' attentiveness to CSSR, substantially contributing to the stream of literature focussing on analysing the linkages between cultural attributes and corporate social responsibility.

Our study offers clear managerial implications. By focusing our attention on CSSR, we provided an unambiguous framework to better understand and consider a fundamental, but often overlooked, aspect of ESG in traditional risk management practices. Indeed, our study provides managers with a first conceptualisation and initial practical insight into integrating social risk considerations into broader ESG strategies. Besides this, the development of the SSRAS provides companies with a replicable method to monitor their progress over time and against their peers. Furthermore, by highlighting substantial geographical and sectoral variations in companies' approaches to social sustainability, managers can tailor their strategies to the specific cultural characteristics of their country or sector. In addition, the transparent reporting of social sustainability performance heightens trust among investors, especially socially conscious ones.

Moreover, our study allows regulators to adjust the expectations and requirements for reporting and management of CSSR in different regions and sectors more effectively. This differentiated approach avoids a '*one-size-fits-all*'policy and clarifies the need for defined policies that adapt to regional specificities and the needs of each sector. For example, by considering our study's findings, regulators could increasingly take cultural factors into account when designing or applying social risk mitigation policies, making compliance more effective in different regions.

Inevitably, some limitations in the analysis should be borne in mind when making inferences from the results.

Although a rigid protocol has been set up and followed, to analyse annual corporate documentation and classify socially related material issues (see section 4), we are aware that both the qualitative nature of several data and inevitable margins of subjectivity in the evaluation may pose concerns as to the reliability of the dataset. Anyhow, the rigid three-level validation system for risk classification we adopted makes us confident that errors and omissions, although conceivable, are not to an extent that would drastically curb our core results.

To the contrary, what worries us the most is the possibility that some socially sensitive information has not been disclosed or was obscured by some of the firms in the sample, for secret trade or business reasons, as permitted by sustainability reporting standards. At the same time, scattered 'social washing' behaviours may potentially bias the results. Not knowing, a priori, the possible extent of both these issues, we are not able to judge their impact on any inferences made through our analyses. Still, these are the usual issues when considering sustainability-related data and ESG metrics.

Finally, the paper intended to provide a starting point for an analysis of corporate social sustainability risk. Many extensions and refinements could be pursued. In particular, our study made clear that some firms reached a more mature level of attentiveness towards socially related matters having the potential of impacting their undertakings and that the

national cultural traits, the industry of belonging, and the presence of a large workforce, are not negligible determinants of such an orientation. A different matter is whether this higher attentiveness is translated into market value, which discloses interesting opportunities for further studies in the field. At the same time, there could also be room for refinements to the classification of physical and transition sources of social sustainability risk and, above all, extending the analysis to interactions between CSSR, environmental risk and financial risks (and to the complexities in their risk management that follow). From an empirical standpoint, substantial contributions to the knowledge would also be made by including small and medium enterprises, as well as companies from other cultural and geopolitical areas of the world. We leave these to future research.

References

Ali, W., Frynas, J. G., & Mahmood, Z. (2017). Determinants of corporate social responsibility (CSR) disclosure in developed and developing countries: A literature review. Corporate Social Responsibility and Environmental Management, 24(4), 273-294.

Altavilla, C., Boucinha, M., Pagano, M., Polo, A. (2024), Climate risk, bank lending and monetary policy, ECB Working Paeper Series, 2969, doi:10.2866/70527

Amoah, P., & Eweje, G. (2024). Examining the social sustainability strategies of multinational mining companies in a developing country. Social Responsibility Journal, 20(3), 568-584. https://doi.org/10.1108/SRJ-11-2022-0480

Au, S. Y., Dong, M., & Tremblay, A. (2024). How much does workplace sexual harassment hurt firm value? Journal of Business Ethics, 190(4), 861-883.

Beck, U. (1992) Risk Society: Towards a New Modernity. London: Sage.

Bekefi T., Epstein M.J., (2008), Transforming Social and Environmental Risks into opportunities, Strategic Finance, 3/March.

Bekefi, T., Jenkins, B., Kytle, B., (2006), Social Risk as Strategic Risk, Corporate Social Responsibility Initiative, WP No. 30, John F. Kennedy School of Governement, Harvard University

Billings, M.B., Klein, A. & Shi, Y.C. Investors' response to the #MeToo movement: does corporate culture matter? Rev Account Stud 27, 897–937 (2022). https://doi.org/10.1007/s11142-022-09695-z

Bolton, P., Espres, M., Pereira Da Silva, L.A., Samama, F., Svartzman, R., (2020), The green swan Central banking and financial stability in the age of climate change, Bank for International Settlements, ISBN 978-92-9259-326-1

Botvin, G. J., & Botvin, E. M. (1992). Adolescent tobacco, alcohol, and drug abuse: Prevention strategies, empirical findings, and assessment issues. Journal of Developmental & Behavioral Pediatrics, 13(4), 290-301.

Block, J. H., & Wagner, M. (2014). The effect of family ownership on different dimensions of corporate social responsibility: Evidence from large US firms. Business Strategy and the Environment, 23(7), 475-492.

Borelli-Kjaer, M., Schack, L. M., & Nielsson, U. (2021). # MeToo: Sexual harassment and company value. Journal of Corporate Finance, 67, 101875.

Brainard, W., and Dolbear, F. T. (1971). Social risk and financial markets. The American Economic Review, 61(2), 360-370.

Caprar, D. V., & Neville, B. A. (2012). "Norming" and "conforming": Integrating cultural and institutional explanations for sustainability adoption in business. Journal of Business Ethics, 110(2), 231–245.

Cetenak, E. H., Cingoz, A., & Acar, E. (2017). The effect of national culture on corporate financial decisions. In Risk management, strategic thinking and leadership in the financial services industry: A proactive approach to strategic thinking (pp. 355–368). Springer.

Chih, H. L., Chih, H. H., & Chen, T. Y. (2010). On the determinants of corporate social responsibility: International evidence on the financial industry. Journal of Business Ethics, 93, 115-135

Cordeiro, J. J., & Tewari, M. (2015). Firm characteristics, industry context, and investor reactions to environmental CSR: A stakeholder theory approach. Journal of business ethics, 130, 833-849.

De la Cuesta-González, M., Muñoz-Torres, M. J., & Fernández-Izquierdo, M. Á. (2006). Analysis of social performance in the Spanish financial industry through public data. A proposal. Journal of Business Ethics, 69, 289-304. https://doi.org/10.1007/s10551-006-9091-8

ECB (2022), ECB Climate Agenda 2022, retrievable at https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220704_annex~cb39c2dcbb.en.pdf

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. Journal of Financial economics, 101(3), 621-640.

El Baz, J., Laguir, I., Marais, M., & Staglianò, R. (2016). Influence of national institutions on the corporate social responsibility practices of small-and medium-sized enterprises in the food-processing industry: Differences between France and Morocco. Journal of Business Ethics, 134, 117-133.

Endrikat, J., Guenther, E., & Hoppe, H. (2014). Making sense of conflicting empirical findings: A meta-analytic review of the relationship between corporate environmental and financial performance. European Management Journal, 32(5), 735-751. https://doi.org/10.1016/j.emj.2013.12.004

Federal Reserve System Board of Governors, 2023, Principles for Climate-Related Financial Risk Management for Large Financial Institutions, Federal Register, Vol. 88, No. 208, pp. 74183-74189

Fernandez-Feijoo, B., Romero, S. & Ruiz, S. Effect of Stakeholders' Pressure on Transparency of Sustainability Reports within the GRI Framework. Journal of Business Ethics 122, 53–63 (2014). https://doi.org/10.1007/s10551-013-1748-5

Fiordelisi, F., Galloppo, G., Lattanzio, G. (2022) Where does corporate social capital matter the most? Evidence From the COVID-19 crisis, Finance Research Letters, Volume 47, Part A, 102538, https://doi.org/10.1016/j.frl.2021.102538.

Freiberg, D., Rogers, J., Serafeim G., (2020) How ESG Issues Become Financially Material to Corporations and Their Investors, Harvard Business School Working Paper, No. 20-056.

Gallén, M. L., & Peraita, C. (2017). The effects of national culture on corporate social responsibility disclosure: a cross-country comparison. Applied Economics, 50(27), 2967-2979.

Gantchev, N., Giannetti, M., & Li, R. (2022). Does money talk? Divestitures and corporate environmental and social policies. Review of Finance, 26(6), 1469-1508. https://doi.org/10.1093/rof/rfac029

Gaudêncio, P., Coelho, A., & Ribeiro, N. (2017). The role of trust in corporate social responsibility and worker relationships. Journal of Management Development, 36(4), 478-492.

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. Strategic management journal, 30(4), 425-445.

Graetz, G., & Franks, D. M. (2015). Conceptualising social risk and business risk associated with private sector development projects. Journal of Risk Research, 19(5), 581-601. https://doi.org/10.1080/13669877.2014.1003323

Halkos, G., & Nomikos, S. (2021). Corporate social responsibility: Trends in global reporting initiative standards. Economic Analysis and Policy, 69, 106-117.

Hanson, S. G., Scharfstein, D. S., & Sunderam, A. (2019). Social risk, fiscal risk, and the portfolio of government programs. The Review of Financial Studies, 32(6), 2341-2382. https://doi.org/10.1093/rfs/hhy086

Hofstede, G., Hofstede, G.J., Minkov, M., (2010), Cultures and Organizations: Software of the Mind. Revised and expanded, 3rd Edition, New York: McGraw-Hill USA, ISBN 978-0-07-166418-9.

Ho, F.N., Wang, HM.D. & Vitell, S.J. A Global Analysis of Corporate Social Performance: The Effects of Cultural and Geographic Environments. J Bus Ethics 107, 423–433 (2012). https://doi.org/10.1007/s10551-011-1047-y

Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2 (1). https://doi.org/10.9707/2307-0919.1014

Holzmann, R., & Jorgensen, S. (1999). Social protection as social risk management. Washington, DC: The World Bank.

Huang, C. J., Liu, H. Y., Lin, T. L., & Lai, J. Y. (2024). Revisiting Hofstede's dimensions of national culture and environmental sustainability. Energy & Environment, 35(3), 1251-1269.

Ioannou, I., Serafeim, G. What drives corporate social performance? The role of nation-level institutions. J Int Bus Stud 43, 834–864 (2012). https://doi.org/10.1057/jibs.2012.26

Inglehart, R., & Welzel, C. (2005). Modernization, cultural change and democracy. New York: Cambridge University Press.

Intergovernmental Panel on Climate Change IPCC (2023), Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001

Jo, H., & Na, H. (2012). Does CSR reduce firm risk? Evidence from controversial industry sectors. Journal of business ethics, 110, 441-456.

Joyce, S., and Thomson, I. (2000). Earning a social licence to operate: social acceptability and resource development in Latin America. Cim. Bull. 93 (1037). Available at: https://store.cim.org/en/earning-a-social-licence-to-operate-socialacceptability- and-resource-development-in-latin-america.

Keenan, J., Kemp, D., & Owen, J. (2019). Corporate responsibility and the social risk of new mining technologies. Corporate Social Responsibility and Environmental Management, 26(4), 752-760. https://doi.org/10.1002/csr.1717

Kim, S., & Wagner, S. M. (2021). Examining the stock price effect of corruption risk in the supply chain. Decision Sciences, 52(4), 833-865.

Kim, S., Wagner, S. M., & Colicchia, C. (2019). The impact of supplier sustainability risk on shareholder value. Journal of Supply Chain Management, 55(1), 71-87.

Klassen, R. D., & Vereecke, A. (2012). Social issues in supply chains: Capabilities link responsibility, risk (opportunity), and performance. International Journal of production economics, 140(1), 103-115. https://doi.org/10.1016/j.ijpe.2012.01.021.

Kytle, B., Ruggie, J.G., (2005), Corporate Social Responsibility as Risk Management: a Model for Multinationals, Corporate Social Responsibility Initiative, Working Paper No. 10.

Lévesque, C., Hennebert, M. A., Murray, G., & Bourque, R. (2018). Corporate social responsibility and worker rights: Institutionalizing social dialogue through international framework agreements. Journal of Business Ethics, 153, 215-230.

Macgill, S. M., & Siu, Y. L. (2004). The nature of risk. Journal of Risk Research, 7(3), 315-352.

Marashdeh, h., Dhiaf, M.M., Atayah, O.F., Nasrallah, N., Frederico, G.F., Najaf, K., (2023), Sensitivity of market performance to social risk index: Evidence from global listed companies in logistics and transportation industry, Socio-Economic Planning Sciences, 87 Part A, 101536, https://doi.org/10.1016/j.seps.2023.101536.

Mariani, M., Caragnano, A., D'Ercole, F., & Frascati, D. (2024). Carbon intensity and market pricing: An asymmetric valuation. International Review of Financial Analysis, 93, 103191.

Martins, H. C. (2022). Competition and ESG practices in emerging markets: Evidence from a difference-in-differences model. Finance Research Letters, 46, 102371.

McKinnon, R. (2004). Social risk management and the World Bank: resetting the 'standards' for social security?. Journal of Risk Research, 7(3), 297-314.

Mhiri, C., Ajina, A., Hussain, N., Mnzava, B., & Wieczorek-Kosmala, M. (2024). Corporate social responsibility and capital structure: Moderating effect of culture. Corporate Social Responsibility and Environmental Management, 1–20. https://doi.org/10.1002/csr.2957

Michelson, G., Wailes, N., Van Der Laan, S., & Frost, G. (2004). Ethical investment processes and outcomes. Journal of Business Ethics, 52, 1-10.

Mintzberg, Henry, (1983), The case for corporate social responsibility, Journal of Business Strategy 4(2).pp. 3-15.

Miska, C., Szőcs, I., Schiffinger, M., (2018), Culture's effects on corporate sustainability practices: A multi-domain and multi-level view, Journal of World Business, 53(2), pp. 263-279, https://doi.org/10.1016/j.jwb.2017.12.001

Monasterolo, Irene. "Climate change and the financial system." Annual Review of Resource Economics 12.1 (2020): 299-320.

Mueller, K., Hattrup, K., Spiess, S. O., & Lin-Hi, N. (2012). The effects of corporate social responsibility on employees' affective commitment: A cross-cultural investigation. Journal of Applied Psychology, 2012(6), 1186–1200.

Muttakin, M. B., & Subramaniam, N. (2015). Firm ownership and board characteristics: do they matter for corporate social responsibility disclosure of Indian companies?. Sustainability Accounting, Management and Policy Journal, 6(2), 138-165.

Najaf, K., Dhiaf, M. M. M., Marashdeh, H., & Atayah, O. F. (2023). The social role of supply chain firms during the pandemic period. International Journal of Quality & Reliability Management, 40(5), 1343-1361. doi/10.1108/IJQRM-03-2022-0106

Nikolakis, W., Olaru, D., & Kallmuenzer, A. (2022). What motivates environmental and social sustainability in family firms? A cross-cultural survey. Business Strategy and the Environment, 31(5), 2351-2364.

O'Sullivan, N., & O'Dwyer, B. (2015). The structuration of issue-based fields: Social accountability, social movements and the Equator Principles issue-based field. Accounting, Organizations and Society, 43, 33-55. https://doi.org/10.1016/j.aos.2015.03.008 Oh, W. Y., Chang, Y. K., & Martynov, A. (2011). The effect of ownership structure on corporate social responsibility: Empirical evidence from Korea. Journal of business ethics, 104, 283-297.

Okafor, Anthony, Bosede Ngozi Adeleye, and Michael Adusei. "Corporate social responsibility and financial performance: Evidence from US tech firms." Journal of cleaner production 292 (2021): 126078.

Orlitzky, M., Siegel, D. S., & Waldman, D. A. (2011). Strategic corporate social responsibility and environmental sustainability. Business & society, 50(1), 6-27.

Owen, J. R., & Kemp, D. (2017). Social management capability, human migration and the global mining industry. Resources Policy, 53, 259-266. https://doi.org/10.1016/j.resourpol.2017.06.017

Paoloni, P., Lombardi, R., & Principale, S. (2023). The impact of gender diversity on corporate social responsibility knowledge: Empirical analysis in European context. Journal of Knowledge Management, 27(9), 2484-2498. https://doi.org/10.1108/JKM-07-2022-0512

Park, H., Russell, C., & Lee, J. (2007). National culture and environmental sustainability: A crossnational analysis. Journal of Economics and Finance, 31(1), 104–121.

Patten, D. M. (2008). Does the market value corporate philanthropy? Evidence from the response to the 2004 tsunami relief effort. Journal of Business Ethics, 81, 599-607.

Peng, M., Wang, D. & Jiang, Y. An institution-based view of international business strategy: a focus on emerging economies. J Int Bus Stud 39, 920–936 (2008). https://doi.org/10.1057/palgrave.jibs.8400377

Perkins, J., Jeffrey, C., & Freedman, M. (2022). Cultural influences on the quality of corporate social responsibility disclosures: An examination of carbon disclosure. Sustainability Accounting, Management and Policy Journal, 13(5), 1169-1200.

Parboteeah, K. P., Addae, H. M., & Cullen, J. B. (2012). Propensity to support sustainability initiatives: A cross-national model. Journal of business ethics, 105, 403-413.

Pareek, R., & Sahu, T. N. (2022). How far the ownership structure is relevant for CSR performance? An empirical investigation. Corporate Governance: The International Journal of Business in Society, 22(1), 128-147.

Rees, W., & Rodionova, T. (2015). The influence of family ownership on corporate social responsibility: An international analysis of publicly listed companies. Corporate Governance: An International Review, 23(3), 184-202.

Renn, O., Burns, W. J., Kasperson, J. X., Kasperson, R. E., & Slovic, P. (1992). The social amplification of risk: Theoretical foundations and empirical applications. Journal of social issues, 48(4), 137-160

Reverte, C. (2009). Determinants of corporate social responsibility disclosure ratings by Spanish listed firms. Journal of business ethics, 88, 351-366.

Ringov, D., & Zollo, M. (2007). Corporate responsibility from a socio-institutional perspective. The impact of national culture on corporate social performance. Corporate Governance, 7(4), 476–485.

Rio Tinto, 2011 - Annual report

Rodgers, W., Choy, H.L. & Guiral, A., (2013), Do Investors Value a Firm's Commitment to Social Activities?. Journal of Business Ethics, 114, pp. 607–623, https://doi.org/10.1007/s10551-013-1707-1

Roszkowska-Menkes, M. (2024). ESG pay and corporate social irresponsibility: Does culture matter? Business Ethics, the Environment & Responsibility, 00,1–26. https://doi.org/10.1111/beer.12739

Schafrik, S., and K. Kazakidis. 2011. "Due Diligence in Mine Feasibility Studies for the Assessment of Social Risk." International Journal of Mining, Reclamation and Environment 25 (1): 86–101.

Schwartz, S. H. (1994). Cultural dimensions of values: Toward an understanding of national differences. In U. Kim, H. C. Triandis, C. Kagitcibasi, S. C. Choi, & G. Yoon (Eds.), Individualism and collectivism: Theoretical and methodological issues (pp. 85–119). Thousand Oaks, CA: Sage.

Scholtens, B., & Dam, L. (2007). Cultural values and international differences in business ethics. Journal of Business Ethics, 75, 273–284.

Shan, C., & Tang, D. Y. (2023). The value of employee satisfaction in disastrous times: Evidence from COVID-19. Review of Finance, 27(3), 1027-1076.

Shi, W., & Veenstra, K. (2021). The moderating effect of cultural values on the relationship between corporate social performance and firm performance. Journal of Business Ethics, 174(1), 89-107.

Sikka, P. (2011). Accounting for human rights: The challenge of globalization and foreign investment agreements. Critical Perspectives on Accounting, 22(8), 811-827. https://doi.org/10.1016/j.cpa.2011.03.004.

Slovic, P. (1987). Perception of risk. science, 236(4799), 280-285.

Thanetsunthorn, N. (2015). The impact of national culture on corporate social responsibility: Evidence from cross-regional comparison. Asian Journal of Business Ethics, 4, 35-56.

Thompson, A. A., Tancredi, F. B., & Kisil, M. (2000). New partnerships for social development: business and the third sector. International Journal of Public Administration, 23(5-8), 1359-1385. https://doi.org/10.1080/01900690008525505.

Ting, P. H. (2021). Do large firms just talk corporate social responsibility?-The evidence from CSR report disclosure. Finance Research Letters, 38, 101476.

Trompenaars, F., & Hampden-Turner, C. (1997). Riding the waves of culture. London: Nicholas Brealey Publishing.

United Nations Framework Convention on Climate Change UNFCCC (2007), Climate change: impacts, vulnerabilities and adaptation in developing countries, Bonn, Germany, https://unfccc.int/resource/docs/publications/impacts.pdf

van der Ploeg, L., & Vanclay, F. (2017). A tool for improving the management of social and human rights risks at project sites: The Human Rights Sphere. Journal of Cleaner Production, 142, 4072-4084. https://doi.org/10.1016/j.jclepro.2016.10.028

Velte, P. (2022). Meta-analyses on corporate social responsibility (CSR): a literature review. Management Review Quarterly, 72(3), 627-675.

Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial performance link. Strategic management journal, 18(4), 303-319. https://doi.org/10.1002/(SICI)1097-0266(199704)18:4%3C303::AID-SMJ869%3E3.0.CO;2-G.

Wong, A. (2014). Corporate sustainability through non-financial risk management. Corporate Governance, 14(4), 575-586. https://doi.org/10.1108/CG-02-2013-0026.

Yue, C. A., Song, B., Tao, W., & Kang, M. (2024). Irresponsible to others but responsible to me: Testing employees' responses to external corporate social irresponsibility and internal corporate social responsibility. Corporate Social Responsibility and Environmental Management, 1–19. https://doi.org/10.1002/csr.2874

Young, S., & Marais, M. (2012). A multi-level perspective of CSR reporting: The implications of national institutions and industry risk characteristics. Corporate governance: an international review, 20(5), 432-450.

Zhu, B., Wang, Y., (2024) Does social trust affect firms' ESG performance?, International Review of Financial Analysis, 93, 103153, https://doi.org/10.1016/j.irfa.2024.103153.

Zhu, Y., Zhang, C., Wang, T., & Miao, Y. (2024). Corporate water risk: A new research hotspot under climate change. Sustainable Development, 32(3), 2623–2637. https://doi.org/10.1002/sd.2800.

Appendix 1. Sample composition

	AREA COUNTRY		MAIN TRADING EXCHANGE	INDUSTRY ICB	2023 Workforce	31.12.23 MARKET VALUE (usd mln)			
ASML HLDG	EU	NED	EURONEXT	Technology	40.309	\$	303.586		
LVMH MOET HENNESSY	EU	FRA	EURONEXT	Consumer Discretionary	192.287	\$	406.855		
TOTALENERGIES	EU	FRA	EURONEXT	Energy	102.579	\$	164.149		
SAP	EU	GER	XETRA	Technology	107.602	\$	189.451		
SIEMENS	EU	GER	XETRA	Industrials	320.000	\$	149.829		
L'OREAL	EU	FRA	EURONEXT	Consumer Discretionary	94.605	\$	266.198		
SCHNEIDER ELECTRIC	EU	FRA	EURONEXT	Industrials	168.044	\$	115.030		
SANOFI	EU	FRA	EURONEXT	Health care	87.994	\$	125.411		
ALLIANZ	EU	GER	XETRA	Financials	157.883	\$	104.783		
AIR LIQUIDE	EU	FRA	EURONEXT	Basic Materials	67.778	\$	101.900		
AIRBUS	EU	FRA	EURONEXT	Industrials	147.893	\$	122.056		
DEUTSCHE TELEKOM	EU	GER	XETRA	Telecommunications	199.652	\$	119.395		
BNP PARIBAS	EU	FRA	EURONEXT	Financials	182.656	\$	79.338		
HERMES INTERNATIONAL	EU	FRA	EURONEXT	Consumer Discretionary	22.037	\$	223.769		
VINCI	EU	FRA	EURONEXT	Industrials	279.426	\$	75.078		
IBERDROLA	EU	SPA	BME	Utilities	41.448	\$	83.268		
BCO SANTANDER	EU	SPA	BME	Financials	208.515	\$	67.570		
SAFRAN	EU	FRA	EURONEXT	Industrials	91.984	\$	75.262		
ESSILORLUXOTTICA	EU	FRA	EURONEXT	Health care	191.706	\$	91.043		
AXA	EU	FRA	EURONEXT	Financials	94.705	\$	73.926		
ENEL	EU	ITA	EURONEXT	Utilities	61.055	\$	75.583		
ANHEUSER-BUSCH INBEV	EU	BEL	EURONEXT	Consumer Staples	154.540	\$	112.110		
MERCEDES-BENZ GROUP	EU	GER	XETRA	Consumer Discretionary	166.056	\$	73.982		
MUENCHENER RUECK	EU	GER	XETRA	Financials	42.812	\$	56.788		
INFINEON TECHNOLOGIES	EU	GER	XETRA	Technology	58.590	\$	54.451		
ING GRP	EU	NED	EURONEXT	Financials	62.845	\$	52.269		
BCO BILBAO VIZCAYA ARG.	EU	SPA	BME	Financials	121.486	\$	53.049		
STELLANTIS	EU	NED	EURONEXT	Consumer Discretionary	258.275	\$	73.951		
Prosus	EU	NED	EURONEXT	Technology	22.634	\$	79.280		
DEUTSCHE POST	EU	GER	XETRA	Industrials	594.396	\$	61.388		
BASF	EU	GER	XETRA	Basic Materials	111.991	\$	48.020		
INDUSTRIA DE DISENO TEXTIL	EU	SPA	BME	Consumer Discretionary	164.997	\$	135.753		
UNICREDIT	EU	ITA	EURONEXT	Financials	70.752	\$	48.429		
INTESA SANPAOLO	EU	ITA	EURONEXT	Financials	94.368	\$	53.389		
NORDEA BANK	EU	FIN	NORDIC	Financials	29.153	\$	43.664		
FERRARI	EU	ITA	EURONEXT	Consumer Discretionary	4.988	\$	61.884		
DANONE	EU	FRA	EURONEXT	Consumer Staples	88.843	\$	43.934		

SAINT GOBAIN	EU	FRA	EURONEXT	Industrials	159.145	\$ 37.291
ADYEN	EU	NED	EURONEXT	Industrials	4.196	\$ 39.976
ENI	EU	ITA	EURONEXT	Energy	33.142	\$ 57.237
DEUTSCHE BOERSE	EU	GER	XETRA	Financials	14.502	\$ 39.091
PERNOD RICARD	EU	FRA	EURONEXT	Consumer Staples	20.617	\$ 45.111
ADIDAS	EU	GER	XETRA	Consumer Discretionary	51.561	\$ 36.694
BAYER	EU	GER	XETRA	Health care	99.723	\$ 36.573
BMW	EU	GER	XETRA	Consumer Discretionary	154.950	\$ 64.561
KERING	EU	FRA	EURONEXT	Consumer Discretionary	48.964	\$ 54.399
FLUTTER ENTERTAINMENT	EU	IRE	EURONEXT	Consumer Discretionary	23.053	\$ 31.425
AHOLD DELHAIZE	EU	NED	EURONEXT	Consumer Staples	402.000	\$ 27.369
VOLKSWAGEN	EU	GER	XETRA	Consumer Discretionary	684.025	\$ 25.457
ΝΟΚΙΑ	EU	FIN	NORDIC	Telecommunications	86.689	\$ 18.925
3M COMPANY	US	MN	NYSE	Industrials	85.000	\$ 60.379
THE GOLDMAN SACHS GROUP	US	NY	NYSE	Financials	45.300	\$ 125.804
NIKE	US	OR	NYSE	Consumer Discretionary	83.700	\$ 132.154
AMERICAN EXPRESS COMPANY	US	NY	NYSE	Industrials	74.600	\$ 136.523
THE HOME DEPOT	US	GA	NYSE	Consumer Discretionary	463.100	\$ 344.908
THE PROCTER & GAMBLE	US	ОН	NYSE	Consumer staples	107.000	\$ 345.378
AMGEN	US	CA	NASDAQ	Health care	26.700	\$ 154.141
HONEYWELL INTERNATIONAL	US	NC	NASDAQ	Industrials	95.000	\$ 138.251
SALESFORCE	US	CA	NYSE	Technology	72.682	\$ 254.719
APPLE	US	CA	NASDAQ	Technology	161.000	\$ 2.994.371
INTEL CORPORATION	US	CA	NASDAQ	Technology	124.800	\$ 211.853
THE TRAVELERS COMPANIES	US	MN	NYSE	Financials	33.300	\$ 43.507
THE BOEING COMPANY	US	VA	NYSE	Industrials	171.000	\$ 157.693
IBM CORPORATION	US	NY	NYSE	Technology	305.300	\$ 149.340
UNITED HEALTH GROUP	US	MN	NYSE	Health care	440.000	\$ 486.945
CATERPILLAR	US	ТΧ	NYSE	Industrials	113.200	\$ 150.520
JOHNSON & JOHNSON	US	NJ	NYSE	Health care	131.900	\$ 377.316
VERIZON COMMUNICATIONS	US	NY	NYSE	Telecommunications	105.400	\$ 158.494
CHEVRON CORP.	US	CA	NYSE	Energy	45.600	\$ 280.726
JPMORGAN CHASE & CO.	US	NY	NYSE	Financials	309.926	\$ 491.760
VISA	US	CA	NYSE	Industrials	28.800	\$ 412.010
CISCO SYSTEMS	US	CA	NASDAQ	Telecommunications	84.900	\$ 205.286
McDONALD'S CORP.	US	IL	NYSE	Consumer Staples	150.000	\$ 215.071
WALGREENS BOOTS ALLIANCE	US	IL	NASDAQ	Consumer Staples	331.000	\$ 22.516
The Coca-Cola Company	US	GA	NYSE	Consumer Staples	79.100	\$ 254.778
MERCK & CO.	US	NJ	NYSE	Health care	72.000	\$ 276.259

WALMART	US	AR	NYSE	Consumer Discretionary	2.100.000	\$ 424.430
DOW	US	MI	NYSE	Basic Materials	35.900	\$ 38.464
MICROSOFT CORP.	US	WA	NASDAQ	Technology	221.000	\$ 2.794.827
THE WALT DISNEY COMPANY	US	CA	NYSE	Consumer Discretionary	225.000	\$ 165.259

Table A1 provides an overview of the 80 companies included in our sample (50 from the EU and 30 from the US). For each company, the area of belonging (EU/US) and the state/country of incorporation are highlighted. Furthermore, the main trading exchange of their ordinary shares and the industry, based on ICB classification, are reported. Lastly, the 2023 number of employees and the 31.12.2023 market value (in USD mln) are indicated.

Appendix 2. Regression dependent and independent variable statistics

	OBS.	MEAN	MEDIAN	ST.DEV.	MIN	MAX	0.10 percentile	0.90 percentile	ASIM.	KURT.	SHAPIRO
SSRAS	397	5.23	5.38	1.62	0.00	8.96	3.65	7.10	-0.69	1.46	0.96 (0.000)
WORKFORCE (LN)	394	11.43	11.52	1.09	6.93	14.65	10.12	12.66	-0.61	2.07	0.96 (0.000)
PDI	9	46.00	40.00	13.73	28.00	68.00	32.00	65.60	0.46	-1.39	0.77 (0.000)
IDV	9	71.56	71.00	10.54	51.00	91.00	60.60	82.20	-0.15	1.13	0.85 (0.000)
MAS	9	49.44	54.00	18.63	14.00	70.00	23.60	68.40	-0.76	-0.56	0.78 (0.000)
UAI	9	66.56	65.00	18.98	35.00	94.00	43.80	87.60	-0.14	-1.20	0.83 (0.000)
LTO	9	54.67	61.00	20.81	24.00	83.00	25.60	82.20	-0.17	-1.33	0.82 (0.000)
IVR	9	53.00	57.00	12.61	30.00	68.00	38.00	68.00	-0.44	-0.90	0.81 (0.000)
Ownership_EMPLOYEES	394	0.06	0.00	0.15	0.00	0.67	0.00	0.23	0.03	0.07	0.44 (0.000)
Ownership_GOVERNMENT	394	0.02	0.00	0.06	0.00	0.31	0.00	0.09	3.05	9.00	0.42 (0.000)
Ownership _INVEST. CO.	394	0.04	0.03	0.05	0.00	0.26	0.00	0.09	1.85	4.58	0.76 (0.000)
Ownership_HOLDING CO.	394	0.03	0.00	0.09	0.00	0.50	0.00	0.09	3.84	15.48	0.38 (0.000)
Ownership_FREE FLOAT	394	0.85	0.91	0.17	0.33	1.00	0.56	1.00	-1.42	1.30	0.82 (0.000)
Ownership_OTHER	394	0.01	0.00	0.03	0.00	0.21	0.00	0.00	5.52	33.82	0.24 (0.000)
SIZE (LN)	394	11.46	11.33	0.91	8.78	14.88	10.41	12.68	0.70	1.11	0.97 (0.000)
ROA	384	6.90	5.70	6.21	-7.83	29.47	0.55	15.17	0.89	1.01	0.94 (0.000)
LEVERAGE	394	48.60	44.43	24.70	0.00	143.68	19.74	79.78	0.86	1.41	0.96 (0.000)
GDP (LN)	45	10.70	10.68	0.32	10.12	11.49	10.26	11.14	0.45	0.08	0.93 (0.000)

Table A2.1 Regression dependent and independent variable descriptive statistics

Table A2.1 shows the descriptive statistics for the variables included in our regression analysis, as in Eq. (2). The sample includes 50 companies from the EU and 30 from the US. The dependent variable, SSRAS, is our measure of social sustainability risk attentiveness (see Section 5 for details). The independent variables are computed as follows: WORKFORCE represents the natural logarithm of the average total workforce of company i at year t. The six Hofstede cultural dimensions (PDI – power distance index; IDV – individualism vs. collectivism; MAS – masculinity vs. femininity; UAI – uncertainty avoidance; LTO – long-term orientation; IVR – indulgence vs. restraint) are included for the country where each company is headquartered. OWNERSHIP reflects the average ownership percentage across six shareholder categories: EMPLOYEES, GOVERNMENT, INVESTMENT_COMPANY, HOLDING_COMPANY, FREE_FLOAT, and OTHERS. INDUSTRY categorises companies based on the Industry Classification Benchmark (ICB). Control variables include: SIZE measured as the ratio of total debt to total capital at year t-1; ROA measured as the return on assets for year t-1; LEVERAGE, measured as the ratio of total debt to total capital at year t-1; and GDP, measured as 90% percentile values, along with measures of asymmetry and kurtosis (zero centred), are provided. Shapiro is the statistics of the Shapiro-Wilk normality test, p_val are in brackets.

Table A2.1 provides the summary statistics for the main variables employed in the analysis. First and foremost, the Social Sustainability Risk Attentiveness Score (SSRAS) shows an average of 5.23 and a standard deviation of 1.62. These figures indicate a balanced distribution of social scores within our sample, ranging from 0.00 to 8.96. The kurtosis (1.46 centred at 0, indicating a more peaked distribution) and asymmetry (indicating a slight leftward distribution) of the distribution hint at its non-normal distribution, which is further confirmed by looking at the result of the Shapiro-Wilk test. In fact, despite a Shapiro-Wilk statistic near the unit, we reject the null hypothesis that the variable obeys a normal distribution (p-value < 0.001). The range of the observations underscores the presence of severe disparities among the firms within our sample, suggesting that, while some companies appear to be highly proactive in addressing social risks, others lag far behind, owing to different corporate strategies and industry environments. Additionally, the Augmented Dickey-Fuller (ADF) test suggests that the SSRAS variable is stationary, as we reject the null hypothesis of a unit root (ADF statistic = -6.036; p-value < 0.01). ¹²

¹² To save space, the ADF figures are not reported in the text nor in table A.2.1, for all the variable able but available upon request.

Regarding the different ownership structures in our sample, a predominant presence of free float emerges, with an average of 85.12% and a high standard deviation. Among the alternative ownership structures, the remaining part of the sample is marked by employees/family firms, followed by investment companies. Crossholdings and government ownership appear less represented within the sample. The results of the Shapiro-Wilk test confirm that all the ownership variables do not follow a normal distribution (p-value < 0.001).

Looking at the main financial metrics, the companies within our sample show an intriguing heterogeneity, considering the workforce dimension, which could be a critical determinant of social sustainability risk attentiveness. They move from minimum values equal to 6.93 to maximum values equal to 14.65 (the figures are expressed in logarithms). Furthermore, return on assets (ROA) and leverage show a wide range in values, highlighting the diversity in the financial characteristics of the companies within our sample. The ROA has an average of 6.90% and spans from negative to positive values, suggesting different degrees of operational efficiency and profitability across the sample. Leverage, with an average near 50% and a maximum value equal to 143.68%, indicates the presence of diversified capital structures and consequent financial risk profiles.

Lastly, considering the country-level cultural dimensions, Power Distance Index (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), Long-Term Orientation (LTO), and Indulgence versus Restraint (IVR) provide a contextual framework in which we can frame corporate social sustainability efforts. Among others, the average Power Distance Index (PDI) of 46 with a standard deviation of 13.73 suggests a moderate level of cultural acceptance of hierarchical order for the companies in the sample. Individualism (IDV) scores are relatively high, with an average of 71.56 and a standard deviation of 10.54, indicating the presence of cultures that praise individual achievements and privilege the autonomy of individuals. Similarly, Uncertainty Avoidance Index (UAI) scores are notably high (an average of 66.56 with a standard deviation of 18.98), suggesting that the cultures sampled in our analysis have a significant aversion to uncertainty and ambiguity. Also in this case, the output of the Shapiro-Wilk test underlines that the variables do not follow a normal distribution (p-value < 0.001). Finally, the GDP data shows a relatively homogenous economic output among the sampled countries.

Table A	220	Correl	ation	matrix
raule r	12.2 .		auon	maun

	SSRAS	WORK . (LN)	PDI	IDV	MAS	UAI	LTO	IVR	Own. EMPL	Own GOV	Own. INV.CO	Own. HOLD. CO	Own. FREE FL.	Own. OTH	SIZE (LN)	ROA	LEV	GDP (LN)
SSRAS	1																	
WORK. (LN)	-0,07	1																
PDI	0,38	0,01	1															
IDV	-0,33	0,06	-0,34	1														
MAS	-0,30	0,15	-0,35	0,28	1													
UAI	0,40	-0,01	0,83	-0,76	-0,30	1												
LTO	0,21	-0,04	0,21	-0,73	-0,19	0,65	1											
IVR	-0,26	0,05	-0,33	0,78	-0,15	-0,75	-0,78	1										
Own.EMPL	0,28	-0,10	0,30	-0,31	-0,21	0,35	0,25	-0,22	1									
Own.GOV	0,05	-0,04	0,09	-0,22	0,07	0,23	0,26	-0,39	-0,09	1								
Own. INV. CO.	0,10	-0,34	-0,12	-0,26	-0,14	0,01	0,16	-0,12	-0,22	-0,01	1							
Own.HOLD.CO	-0,04	0,18	0,23	0,02	-0,01	0,20	0,08	-0,02	-0,04	-0,09	-0,13	1						
Own.FREE FL.	-0,28	0,10	-0,38	0,38	0,20	-0,48	-0,37	0,36	-0,78	-0,20	0,02	-0,42	1					
Own.OTHER	-0,09	-0,01	-0,10	0,19	0,09	-0,16	-0,16	0,13	-0,08	-0,07	-0,14	-0,05	0,00	1				
SIZE (LN)	-0,21	0,29	-0,08	0,54	0,19	-0,36	-0,47	0,49	0,03	-0,17	-0,36	0,02	0,11	0,11	1			
ROA	-0,02	-0,07	-0,08	0,34	-0,01	-0,25	-0,28	0,33	0,24	-0,23	-0,18	-0,04	-0,08	0,03	0,50	1		
LEVERAGE	-0,15	0,26	-0,11	0,13	0,19	-0,12	-0,17	0,03	-0,27	0,04	-0,11	-0,10	0,29	0,14	0,01	-0,09	1	
GDP (LN)	-0,37	0,07	-0,60	0,83	0,27	-0,90	-0,68	0,84	-0,31	-0,32	-0,05	-0,07	0,42	0,14	0,45	0,27	0,04	1

Table A2.2 shows the correlation matrix for the variables included in our regression analysis, as in Eq. (2). The sample includes 50 companies from the EU and 30 from the US. The dependent variable, SSRAS, is our measure of social sustainability risk attentiveness (see Section 5 for details). The independent variables are computed as follows: WORKFORCE represents the natural logarithm of the average total workforce of company i at year t. The six Hofstede cultural dimensions (PDI – power distance index; IDV – individualism vs. collectivism; MAS – masculinity vs. femininity; UAI – uncertainty avoidance; LTO – long-term orientation; IVR – indulgence vs. restraint) are included for the country where each company is headquartered. OWN reflects the average ownership percentage across six shareholder categories: employees (EMPL), government (GOV), investment companies (INV.CO), holding companies (HOLD.CO), free float (FREE FL.), and other kind of ownership (OTH). Control variables include: SIZE, measured as the ratio of total debt to total capital at year t-1; and GDP, measured as the GDP in constant 2015 US dollars.

The correlation matrix in Table A2.2 provides insightful preliminary highlights on the relationships between the variables in our model. By looking at the correlations between the variables included in Eq. (2), it is possible to exclude a significant impact of multicollinearity, given the absence of extreme values. In particular, the Social Sustainability Risk Attentiveness Score (SSRAS) exhibits a negative correlation with Free Float Holding (-0.28), owing to a potential focus on short-term financial returns often demanded by market investors. Additionally, we can highlight a positive correlation between SSRAS and employee ownership (0.28), indicating that firms where employees have a stake might pursue more socially sustainable practices. Furthermore, the correlation between SSRAS and leverage is slightly negative (-0.15), revealing that companies with higher leverage appear less attentive to social sustainability in our sample.