

# The German Supply Chain Due Diligence Act: impacts on sustainable supply chain management from a stakeholder perspective

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## Abstract

**Purpose** – The German Supply Chain Due Diligence Act (GSCDDA), as a comprehensive regulation for due diligence in supply chains, will exert profound pressure on companies' sustainable supply chain management (SSCM). This study aims to examine the affected stakeholders' polarizing expectations stemming from the GSCDDA, the resulting impacts on SSCM and how these findings compare with theoretical SSCM developments.

**Design/methodology/approach** – From 5,490 GSCDDA posts on X (formerly "Twitter"), the authors extracted 556 qualitative posts illustrating the GSCDDA discourse and analyzed them from a stakeholder perspective. The posts were classified according to the dimensions of stakeholder groups and expectations (i.e. challenges and opportunities). The authors then synthesized the posts across these dimensions and compared the identified expectations with the SSCM literature.

**Findings** – Seven stakeholder groups were identified, along with nine challenges (e.g. legal flaws) and four opportunities (e.g. increased transparency). The synthesis of both components revealed highly discussed and conflicting expectations. The theoretical SSCM developments partly differ from the discourse, indicating discernible gaps between theory and practice

**Practical implications** – Identifying key stakeholder groups supports building synergies between GSCDDA implementers and stakeholders to tackle their challenges and reinforce opportunities.

**Originality/value** – Due to the growing prevalence of supply chain due diligence regulations, it is essential to consider the legal implications for SSCM. This study explores the link between due diligence concepts and SSCM, and to the best of the authors' knowledge, this is the first study to analyze how legal pressure shapes stakeholders' expectations on companies' SSCM.

**Keywords** German Supply Chain Due Diligence Act, Qualitative social media analysis, Sustainable supply chain management, Stakeholder theory, Institutional theory

**Paper type** Research paper

## 1. Introduction

Global supply chains regularly face human rights violations and negative environmental impacts. The recent German Supply Chain Due Diligence Act (GSCDDA) aims to improve global human rights and environmental conditions, thus contributing to the

sustainable development goals of the Agenda 2030 (German Parliament, 2021). The GSCDDA mandates higher levels of corporate responsibility for supply chains and is considered the most controversial legislative project of the 19th legislative period in

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Germany (Grabosch *et al.*, 2021). Consistent with institutional theory (DiMaggio and Powell, 1983), the regulatory pressure imposed by the GSCDDA can deeply intervene in sustainable supply chain management (SSCM) mechanisms and shift preexisting conditions. Congruent with stakeholder theory (Freeman, 1984), the resulting legal pressure will elicit paradigm shifts in the perspectives of engaged stakeholders. In this context, it is vital to scrutinize the expectations of stakeholders regarding companies' SSCM due to the new legal requirements, with a particular focus on the contradictory expectations that may impede the harmonizing of stakeholder interests. However, the growing influence of mandatory due diligence regulations, such as the GSCDDA, has not been sufficiently explored in the existing literature. There is a lack of structured information concerning which stakeholder groups are affected by the GSCDDA and which challenges and opportunities are likely to arise for SSCM based on the law. Furthermore, there is a missing link between issues mentioned in practical GSCDDA discourses and theoretical SSCM developments, which inhibits establishing synergies between these streams. For instance, there is a missing link between theoretical SSCM developments regarding certifications (Liu, 2023) and the issue of untrustworthy certifications often mentioned in the GSCDDA discourse. To address these research gaps, we pose the following research questions (RQs): RQ1: *Which SSCM stakeholder groups, challenges and opportunities exist in the GSCDDA discourse, and how do these components interrelate?* RQ2: *How does the GSCDDA discourse reflect theoretical SSCM developments?*

To answer these RQs, we analyzed German-language posts on X (formerly "Twitter") from users that were engaging in the GSCDDA discourse (Chae, 2015). The posts were classified into SSCM stakeholder groups, followed by an inductive abstraction into SSCM challenges and opportunities through sentiment analysis supported by qualitative coding. By synthesizing the posts according to the dimensions of SSCM stakeholder groups as well as SSCM challenges and opportunities and applying the lenses of institutional theory (DiMaggio and Powell, 1983) and stakeholder theory (Freeman, 1984), we were able to investigate the stakeholder expectations arising from the exerted GSCDDA pressure and identify how these expectations were impacting companies' SSCM. By doing so, with a particular focus on stakeholder groups beyond the supply chain, we revealed the stakeholder interests that can result from comprehensive due diligence laws such as the GSCDDA. Moreover, by synthesizing the GSCDDA discourse with the theoretical SSCM stream, we revealed topical intersections and divergences. Furthermore, we have established a general, computationally supported framework for classifying and synthesizing X data that subsequent SSCM studies could also apply. Seen from a practical perspective, the identification of key stakeholder groups supports the building of synergies between GSCDDA implementers and stakeholders to tackle their challenges and reinforce the opportunities. Lastly, our insights could also be applied to due diligence laws with similar characteristics. Forthcoming due diligence regulations could significantly exacerbate inconsistencies between stakeholders. This is particularly the case for the European Corporate Sustainability Due Diligence Directive (CSDDD), a law that has notable overlaps with the GSCDDA and which applies to a wider range of companies. Therefore, it is crucial to address critical and conflicting challenges; and relying on existing knowledge, such as the insights provided in this study, may be useful for this.

## 2. Literature review

### 2.1 Sustainable supply chain management and the German Supply Chain Due Diligence Act

SSCM research has experienced notable popularity since supply chain management structures need to be reconsidered with the integration of sustainable development (Carter *et al.*, 2019; Seuring and Müller, 2008). SSCM can be defined as *the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e. economic, environmental and social, into account, which are derived from customer and stakeholder requirements* (Seuring and Müller, 2008, p. 1700). In pursuit of targeted enhancements in sustainability performance, conceptual studies have explored key SSCM elements and the influential factors in supply chain relationships (Beske and Seuring, 2014; Koeborg and Longoni, 2019; Tachizawa and Wong, 2014). For instance, Koeborg and Longoni (2019) highlight that the structural arrangements and linkages of supply chain actors and governance mechanisms are essential components of SSCM for achieving sustainable outcomes in global supply chains. Comprehensive SSCM considers sustainability aspects at all stages of the supply chain, from raw material supplies up to the distribution of goods to consumers. In this vein, Beske and Seuring (2014) provide a basis for selecting practices of continuity, collaboration, risk management and proactivity in the interests of facilitating sustainability performance.

In parallel with these developments in the SSCM research stream, the legal due diligence process has also undergone developments (Smit *et al.*, 2020). The concept of "due diligence" was laid out by the United Nations Guiding Principles on Business and Human Rights to provide a global standard for the role of companies in respecting human rights (United Nations, 2011). However, since voluntary engagement by companies was limited, legislators converted these standards into binding laws. Primarily, regulations in the USA (California Transparency Supply Chain Act, 2010, Dodd-Frank Act 2010, Section 1502), the UK (Modern Slavery Act, 2015) and Australia (Modern Slavery Act, 2018) focused on the disclosure of supply chain sustainability to enhance transparency (Smit *et al.*, 2020). The latest regulations, such as the Corporate Duty of Vigilance Law 2017 of France, the Child Labor Due Diligence Law 2019 of The Netherlands, the Transparency Act 2021 of Norway and the GSCDDA (Marques *et al.*, 2021; Smit *et al.*, 2020) have raised the bar, mandating companies to implement comprehensive management systems to address social and environmental impacts. However, there are notable differences between these regulations in terms of both their strictness and terminology. For instance, the UK's Modern Slavery Act merely mandates the disclosure of forced labor, without imposing an obligation to undertake specific measures to counteract it. In contrast, the abovementioned French law necessitates large companies to implement monitoring plans to actively address violations throughout the upstream supply chain. Similarly, the aforementioned Norwegian and Dutch laws focus on risk management regarding human and labor rights (e.g. child labor), including appropriate preventive and remedial measures to prevent and minimize violations.

The GSCDDA extends the scope of former due diligence laws with environmental aspects within the supply chain, along with a wide range of due diligence requirements (Krajewski et al., 2021). Companies with more than 1,000 employees must analyze human rights and environmental violations; take adequate preventive and remedial measures, including sustainable procurement strategies; establish a policy statement; set up complaint mechanisms; and report on this. As these obligations apply to the upstream supply chain, the GSCDDA indirectly affects German companies' suppliers. Suppliers should expect an increased need for information, disclosure and collaboration contributions in their dealings with German companies. The literature on due diligence laws in supply chains is nascent. Studies have revealed modern slavery challenges in the supply chain, such as a lack of indicators for the detection of slavery (Gold et al., 2015; New, 2015; Hofmann et al., 2018; Brandenburg et al., 2024) examined due diligence in the supply chain from the companies' perspective and found potential barriers to and enablers of its implementation (e.g. financial effects, market structures, legal gaps). The current study complements these findings by adopting a stakeholder perspective and thereby establishing a link to theoretical SSCM developments and institutional and stakeholder theory.

## 2.2 Institutional theory and stakeholder theory as conceptual foundation

Institutional theory explores how external pressures compel organizations to adopt specific practices (Lai et al., 2006). Moreover, such pressures drive organizations to progressively adjust their behaviors to enhance their legitimacy (DiMaggio and Powell, 1983). Institutional theory states that organizations with similar institutional pressures implement similar strategies or logic to gain legitimacy. However, institutional theory is limited in its ability to establish a comprehensive theoretical foundation for categorizing stakeholders and elucidating how stakeholders impact specific practices or strategies (Kostova et al., 2008). Stakeholder theory offers both a theoretical foundation and mechanisms for explaining or categorizing stakeholders based on their levels of influence (Freeman, 1984). The central tenet of stakeholder theory is that the sustained viability of a company hinges on the backing of its stakeholders. Therefore, a fundamental responsibility of a company's management is to respond to stakeholders' needs and expectations while balancing their divergent interests (Freeman, 1984).

Both theories are intertwined with SSCM and encompass aspects of sustainability performance across various levels that incentivize companies to shape their supply chain operations. For instance, research has explored the influence of supply chain stakeholder pressures on the adoption of social and environmental SSCM practices and the considerations of stakeholders in business sustainability efforts within supply chains (Maas et al., 2018; Svensson et al., 2018; Vidal et al., 2023). In the SSCM context, stakeholder groups can be subdivided within the supply chain (i.e. primary stakeholders) and beyond the supply chain (i.e. secondary stakeholders) (Meixell and Luoma, 2015). Primary stakeholders are those deemed indispensable for the sustenance of the business entity or who have contractual arrangements with the company (e.g.

customers, suppliers, employees). Secondary stakeholders encompass social and political entities pivotal in bolstering the company's legitimacy and garnering acceptance for its endeavors. These include communities, governments, nongovernmental organizations (NGOs), media and trade associations (Meixell and Luoma, 2015). However, previous studies have mainly focused on primary stakeholders' interests, neglecting considerations beyond their confines, and few studies have taken a comprehensive perspective that incorporates public data (e.g. Vidal et al., 2023). Moreover, there is less evidence regarding stakeholder inconsistencies and information asymmetries between primary and secondary stakeholders, complicating the implementation of SSCM practices (Kulkarni, 2000; Sarkis et al., 2011). Lastly, studies of due diligence regulations that use the lenses of institutional and stakeholder theory are even more scarce in the literature (see Marques et al., 2021 as an example). Applying these theories allows to elucidate how legislation influences stakeholder expectations on sustainable activities in supply chain management.

## 2.3 Theoretical framework

To address the RQs (Section 1), we rely on institutional and stakeholder theory (Section 2.2). Figure 1 illustrates the theoretical framework for analyzing the impact of the GSCDDA on SSCM using a stakeholder perspective, augmented by an institutional perspective.

Based on the regulatory pressure of the GSCDDA, our study analyzes affected stakeholder groups, their anticipated SSCM challenges and opportunities resulting from the pressure and how these expectations intersect with and diverge from the theoretical SSCM developments. Hence, we follow the rationale of institutional theory, which explains how laws drive decisions regarding SSCM activities using the pressure–response–outcome notion (Maas et al., 2018). Stakeholder theory allows to categorize affected stakeholder groups and their expectations. We adapted the framework by considering stakeholders' expectations from a two-sided perspective, examining them from a negative standpoint (challenges) and a positive standpoint (opportunities) to uncover polarizing perspectives regarding SSCM. The challenges and opportunities were inductively abstracted and then analyzed from an SSCM angle (e.g. how they relate to SSCM practices, strategies and supply chain governance). By comparing the SSCM challenges and opportunities with the theoretical SSCM development, we obtained various insights, including into how the practical discourse aligns with the theoretical development.

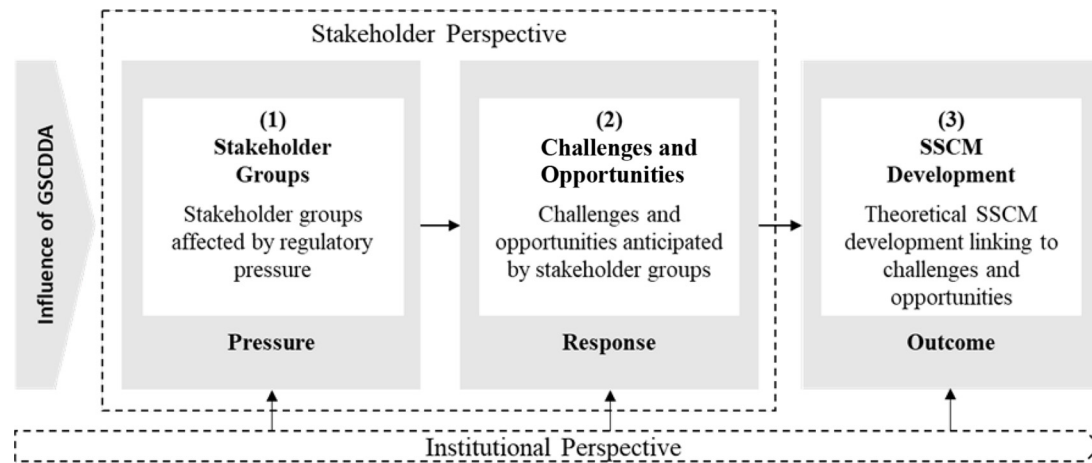
## 3. Research methodology

### 3.1 Data collection

The first step was to generate a data set of the GSCDDA discourse from X. This social media platform was chosen as the data source because it facilitates a large variety of stakeholders to discuss a range of topics (Chae, 2015), including supply chain issues (DuPuis et al., 2022). The choice to use X data was reinforced by the various previous studies that have successfully used X data to examine different aspects of supply chain management (SCM) and sustainability, including discussions



Figure 1 Theoretical framework



Source: Authors' own work

between industry experts, risk management, crisis management, stakeholder interactions and supply chain transparency (e.g. Chae, 2015; Sharma et al., 2020). Furthermore, X posts are stored on the site, making this a particularly naturalistic and nonintrusive approach to investigating stakeholder expectations (Kozinets, 2002). Overall, these points suggest that X enabled inferring a predominantly unbiased GSCDDA discourse that included various relevant stakeholders. Moreover, X is one of Germany's most used social media platforms (Bitkom, 2023), increasing the likelihood of providing a comprehensive data set, given that the GSCDDA is a German law. We selected this law because it is one of the most comprehensive and controversial due diligence laws thus far (Grabosch et al., 2021; Krajewski et al., 2021), rendering it a suitable case for the investigation of regulatory pressures through due diligence laws.

We adapted the approach from Ridhwan et al. (2021) to collect public X posts using a Python script. Four search parameters were applied to increase the gathered posts' relevance and suitability. First, we focused on German-language posts, as the GSCDDA primarily affects German stakeholders. A preliminary analysis revealed that most posts discussing the GSCDDA were written in German. Second, we only considered posts from no earlier than June 11, 2021 (i.e. the day the GSCDDA was passed). Third, to enable the subsequent data analysis step, we only considered posts from which (a) the post's content as well as (b) the associated user's username and (c) number of followers could be collected. Fourth, to increase the odds of the gathered posts being related to the GSCDDA discourse, only posts including one or more of the following keywords were considered: "lieferkettensorgfaltspflichtengesetz," "lks," "lieferkettengesetz," "sorgfaltspflichtengesetz," "german supply chain act," "german due diligence act," "german supply chain law" or "german due diligence law." We included the English terms as a preliminary analysis revealed that using them was common in German-language posts. Overall, this activity yielded a total of 5,490 posts. The last collection date was November 30, 2022. Thus, our data set covered approximately 1.5 years of the German GSCDDA discourse on X.

### 3.2 Data cleansing

This step was crucial, as X posts tend to be unstructured and "noisy" (Murshed et al., 2021). This problem cannot be counteracted via search parameters alone, yet it threatens rigor if ignored. In this step, we relied on the exclusion criteria approach commonly applied in qualitative research (Vom Brocke et al., 2015) and defined four criteria. First, we excluded 35 duplicate posts resembling redundant information. Second, we removed 1,535 posts that were of fewer than 140 characters, as we applied tool-based sentiment analysis in the data analysis step, which performs better with longer posts with sufficient context (Hassan et al., 2013). Moreover, removing the shorter posts counteracted the presence of spam posts in our data set, as these are usually shorter than legitimate posts (Chakraborty et al., 2012). The average length before the removal was 183 characters; after the removal, it was 216. Third, we removed 2,535 posts with neutral sentiments. We did so as our goal was to infer SSCM challenges and opportunities, whose associated posts usually encompass negative or positive sentiments, respectively. A comprehensive preliminary sentiment analysis corroborated this assumption. The applied sentiment analysis is described in more detail in Section 3.3. Fourth, we removed 1,279 posts that were unrelated to the GSCDDA discourse, despite meeting the search parameters. For instance, we removed all posts addressing other due diligence laws and residual spam posts. After the data cleansing step, 556 qualitative and relevant posts remained. Similar studies indicated that this is a reasonable amount of data to reach theoretical saturation (Saunders et al., 2018) in qualitative X analysis (Sleigh et al., 2021). An additional researcher knowledgeable in due diligence laws in general and in the GSCDDA specifically conducted an intercoder check of all 5,490 posts to validate the exclusion and retention process. This check yielded a Krippendorff's  $\alpha$  of 0.92, indicating good reliability, exceeding the standard threshold of 0.80 (Shelley and Krippendorff, 2004).

### 3.3 Data classification and synthesis

We classified each post into the dimensions of "SSCM stakeholder group" and "SSCM challenge or opportunity." For

the group classification, we relied on deductive coding (Braun and Clarke, 2006) and studied each post's associated profile to classify the post into the most suitable group (i.e. "Companies," "Governments," "NGOs," "Communities," "Media," "Trade Associations" and "Others" [e.g. trade unions, practical experts and scientific institutes] [Meixell and Luoma, 2015]). The researcher conducting this task had GSCDDA expertise, both scholarly and practical. For instance, the profile from the Mechanical Engineering Industry Association (i.e. @VDMA) was classified into the "Trade Associations" group. To increase rigor, the posts' SSCM stakeholder classifications were cross-validated by the additional researcher mentioned in Section 3.2. The additional researcher scrutinized the SSCM stakeholder classification of each of the 556 posts, and the encountered divergences between the two researchers were discussed and cleared so that each post could be clearly classified into an SSCM stakeholder group. To gain a more profound overview, we further classified the stakeholder groups based on their visibility, namely how many users their posts reached on average. We assessed each group's visibility by calculating its average number of followers (Schötleter et al., 2022).

For the classification of challenges and opportunities, we used a Python 3.8.6 script and a RoBERTa-based sentiment model (Liao et al., 2021). Such models enable state-of-the-art sentiment analyses based on machine learning (Liao et al., 2021). We used a model trained on 124 million posts from January 2018 to December 2021 (Loureiro et al., 2022). As the model was trained on English-language posts, we relied on validated procedures from related studies and applied machine translation to translate the posts from German to English beforehand (Kohn et al., 2023). The posts were then provided to the model, which inferred the sentiments (i.e. negative, neutral or positive). Neutral sentiment posts were excluded as per exclusion criterion 3. The negative and positive sentiment posts were used to infer SSCM challenges and opportunities via inductive coding (Braun and Clarke, 2006). First, conceptually similar posts with positive and negative sentiments were grouped by the same researcher who conducted the stakeholder classification. The researcher then abstracted the grouped posts into distinct SSCM challenges and opportunities. For instance, the following two negative sentiment posts were grouped together and abstracted into the challenge "Untrustworthy Certifications": "*After two years, buying a T-shirt with the Green Button textile label does not guarantee that people in the supply chain were paid decently & child labor was excluded. This needs to change. #SupplyChainLaw. #ConsumerVoice*" (@vzbv, Consumer Advice Center). "*So, they [the certification entities] are commissioned by companies that they are supposed to independently audit? Commissioned and paid! #Dieanstalt [a German political satire show] highlights the absurdity of certification mechanisms & once again shows the weaknesses of the Supply Chain Law. Worth watching!*" (@ECCHR, European Center for Constitutional and Human Rights). This step was also cross-validated using the same approach and additional researcher as for the stakeholder classification. Finally, we adapted the concept matrix approach of Webster and Watson (2002) to illustrate the post classifications in a classification table (Figure 2).

We then used the posts, their classifications and our classification matrix to synthesize the posts to gain deeper

qualitative insights into the derived SSCM challenges and opportunities. We augmented this synthesis with relevant literature. This enabled us to juxtapose the GSCDDA discourse with theoretical SSCM developments (Table 1). Overall, the abovementioned methodology ensured the quality of the research by meeting common trustworthiness criteria for validity (e.g. using established qualitative approaches; Vom Brocke et al., 2015) and reliability (e.g. applying established interrater checks (Shelley and Krippendorff, 2004; Seuring and Gold, 2012).

## 4. Results

### 4.1 Classification results

Figure 2 shows the classification results. The columns display the SSCM stakeholder groups; the rows, the SSCM challenges and opportunities; and the cells, how the 556 posts were classified across these dimensions. Moreover, Figure 2 illustrates the most-followed stakeholders per group.

Concerning the SSCM challenges and opportunities classification, we abstracted nine challenges and four opportunities. These are further explained in Section 4.2. This distribution reflects the controversial nature of the GSCDDA (Grabosch et al., 2021). The stakeholder group classification revealed that the 556 posts were posted by 408 users, divided into seven groups. The most active group was "Communities," with 162 posts from 137 users. The least active was "Trade Associations," with 23 posts from 16 users. Despite the "Communities" group being the most active, it was the least visible based on its average follower count. Thus, while the group was actively discussing the GSCDDA, it is likely that its opinions were being received by fewer users compared to the other groups. Conversely, we found that the "Governments" group had the most followers, on average, indicating that many users were exposed to their opinions.

### 4.2 Synthesis results

The synthesis of challenges and opportunities (Table 1) allows a comparison with the current theoretical SSCM development. The first column displays the classified SSCM challenges and opportunities, followed by the summarized discourse. The SSCM challenges and opportunities result from stakeholder groups' expectations on SSCM stemming from the GSCDDA. Representative stakeholder groups are assigned to each challenge and opportunity. The theoretical SSCM development related to the respective challenges and opportunities is then provided. For deeper insights, exemplary posts corresponding to the inferred challenges and opportunities can be found in Table 2 in the Appendix.

#### 4.2.1 Challenges

The challenges presented in Table 1 are elaborated on in greater detail as follows:

- **Legal flaws:** Despite the GSCDDA being a comprehensive due diligence regulation, doubts remain about its effectiveness due to legal flaws (C1 in Table 1). The discourse participants mentioned that the law does not include climate protection regulations or references to civil and criminal liability claims. Furthermore, many participants criticized the law for imposing more lenient regulations on indirect suppliers, despite the most

Figure 2 Classification table

		SSCM Stakeholder Groups <sup>1</sup>							$\frac{\sum(X \text{ Posts per C/O})}{\sum X \text{ Posts Total: 556}}$
		Companies	Governments	NGOs	Communities	Media	Trade Associations	Others	
Challenges (C)	(C1) Legal flaws	1	13	20	30	13	0	4	81
	(C2) Bypassing responsibility	1	2	1	12	3	2	2	23
	(C3) Insufficient sustainability awareness	1	18	25	33	11	0	5	93
	(C4) Competitive disadvantages	0	3	1	6	3	1	2	16
	(C5) High bureaucracy and costs	4	3	0	17	13	13	6	56
	(C6) Regulation uncertainty	1	0	4	3	1	0	2	11
	(C7) Uncertain areas and sectors	1	8	20	20	6	0	5	60
	(C8) Operationalization	2	2	2	3	3	1	4	17
	(C9) Untrustworthy certifications	0	1	2	2	0	0	1	6
Opportunities (O)	(O1) Obligatory responsibility	4	39	35	25	8	3	6	120
	(O2) Improved sustainability conditions	0	15	16	5	3	0	5	44
	(O3) Increased transparency	3	2	2	4	2	1	1	15
	(O4) Advanced traceability	2	1	2	2	3	2	2	14
$\sum(X \text{ Posts per Group}) (\sum X \text{ Posts Total: 556})$		20	107	130	162	69	23	45	
$\sum(\text{Users per Group}) (\sum \text{Users Total: 408})$		14	73	72	137	57	16	39	
$\bar{x}(\text{Followers per Group}) (\bar{x} \text{ Followers Total: 19,048})$		2,334	60,820	14,889	1,719	44,893	4,646	4,038	

<sup>1</sup> Most followed stakeholders per group based on follower count (handle, stakeholder description, follower count):  
**Companies:** @VAUDE\_sport, outdoor equipment vendor, 9,682; @dzbank, German's second-largest financial institute, 7,701  
**Governments:** @AuswaertigesAmt, Ministry of Foreign Affairs, 875,244; @c\_lindner, Federal Minister of Finance, 637,167  
**NGOs:** @WWF\_Deutschland, environmental aid organization, 488,865; @bund\_net, environmental aid organization, 154,459  
**Media:** @faznet, widely circulated German newspaper, 775,226; @berlinerzeitung, German newspaper, 299,217  
**Trade Associations:** @VDMAonline, mechanical engineering association, 16,519; @MIT\_bund, established trade association, 9,238  
**Others:** @erik\_flegge, potical consultant and public author, 51,571; @IGMetall, mechanical engineering trade union, 18,719  
 Note: We do not list stakeholders from the "Communities" group due to privacy reasons as this group consisted of private figures.

Source: Authors' own work

significant risks related to the extraction of raw materials extending beyond direct suppliers. Moreover, the law only applies to a limited group of companies. The literature discusses the weaknesses of due diligence regulations in relation to paradoxes. From a theoretical viewpoint, it is apparent that there are certain overlaps between the legal flaws of the GSCDDA and those determined in previous due diligence law implementations. For instance, insufficient penalties and mechanisms to prosecute human rights violations in-depth lead to gaps in effectiveness (Delalieux and Moquet, 2020; New, 2015). This literature also refers to conflicts with existing legal systems and economic pressures.

- Bypassing responsibility: In the GSCDDA discourse, it is repeatedly mentioned that the transfer of responsibility for

human rights to companies resembles bypassing of responsibility (C2) by governments. The proper role of the concerned governments is circumvented, which could steer companies away from countries affected by human rights issues. However, this does not solve the core problem of disrespect for human rights. Conversely, it might threaten the development opportunities of the affected countries. The effects on companies of the transfer of responsibility along the supply chains are only sporadically discussed in the literature (e.g. New, 2015). This withdrawal of companies tends to lead to regressive rather than progressive shifts in human rights violations, as shown by coronavirus pandemic studies (Cole and Shirholami, 2021).

Table 1 Synthesis table

Challenge / Opportunity (Expectations)	Practical GSCDDA discourse	Representative Stakeholder Groups	Theoretical SSCM development	References
<b>C1</b> Legal flaws	The lack of legal regulations, in particular the lacking inclusion of climate protection, civil and criminal liability claims, and stricter regulations for indirect suppliers and companies with fewer than 1,000 employees all raise doubts about the effectiveness of the law for SSCM	NGOs (@Umwelthilfe, Environmental aid), Governments (@SusanneHennig)	SSCM literature discusses due diligence regulations in the context of paradoxes that can lead to insufficient implementation of supply chain practices	New (2015), Delalieux and Moquet (2020)
<b>C2</b> Bypassing responsibility	With the GSCDDA, the origins of human rights violations in the respective countries will not be addressed. Instead, responsibility for the matter will be shifted to private companies. This could threaten the affected countries' development opportunities and deprive them of their responsibility for protecting human rights	Trade associations (@BVE_online, Federation of German Food and Drink Industries), Governments (@c_lindner)	The effects on companies of responsibility transfer are not widely discussed in the literature. Studies have shown that withdrawal from affected countries tends to lead to regressive rather than progressive shifts in human rights violations, as shown by studies on the coronavirus pandemic	Cole and Shirgholami, (2021), New (2015)
<b>C3</b> Insufficient sustainability awareness	Civil society demands awareness of fair-trade conditions and an intrinsic approach to respecting human rights in procurement. The dominant focus of companies is pricing – and not the accompanying human rights conditions or environmental consequences	NGOs (@Cl_Romero), Media (@RND_de, Editorial Network Germany)	The SSCM literature examines the effects of corporate social responsibility and ethical behavior on SSCM. Sustainable awareness is mainly driven by external social pressure and can succeed through top management commitment and employees' personal values	Gunawardena et al. (2018), Yun et al. (2019)
<b>C4</b> Competitive disadvantages	The autonomy of affected companies can be restricted when suppliers will no longer be selected on the basis of individual preference. This can promote an imbalance in competition and, thus, economic disadvantages	Media (@phoenix_de), Trade Associations (@Gesamtmittel, Employer's Association of Metal and Electrical Industry)	Competitive disadvantages are not comprehensively discussed in the literature	–
<b>C5</b> High bureaucracy and costs	Bureaucracy and associated costs are mentioned as an excessive burden and a notable obstacle to the fulfillment of obligations, potentially leading to a loss of profitability. Force majeure, minimum wage regulations, and price fluctuations can also weaken companies	Others (@iwd_de, German Economic Institute), Companies (@SHerold_DELO)	Studies have found that supply chain governance (including contractual, relational, and transactional aspects) can positively affect financial supply chain performance. This indicates that GSCDDA implementation may have positive financial effects in the long term	Dolci et al. (2017)
<b>C6</b> Regulation uncertainty	Vague legal regulations contribute to ambiguity, obstructing adequate implementation of the SSCM. Due to the abstract terms, it is difficult to identify the limits of latitude for action. The risk of penalties increases if the due diligence obligations are not implemented appropriately	Media (@Europe_Table), Companies (@WBBayern, Bavarian Business Advisory Council)	Lack of regulation and guidance from the authorities is a notable challenge that affects SSCM. Sustainability regulations and compliance drive specific SSCM behavior but are considered confusing, and not all policies are coextensive	Menon and Ravi (2021), Grosvold et al. (2014)

(continued)



Table 1

Challenge / Opportunity (Expectations)	Practical GSCDDA discourse	Representative Stakeholder Groups	Theoretical SSCM development	References
<b>C7</b> Uncertain areas and sectors	The textile, agriculture, mining, and finance sectors are mentioned as indicators of human rights violations. China is regarded as an uncertain area as it has a near-monopoly on rare earth metals and special legal regulations, which complicates the GSCDDA implementation	Media (@Europe_Table), Governments (@anna_cavazzini)	Few studies on SSCM risk management have addressed the use of area and sector indicators to analyze social risks in global supply chains. Studies of due diligence regulations have verified that risk areas and sectors need to be considered when evaluating suppliers, as required by the Modern Slavery Act	Xu et al. (2019), Esoimeme (2020)
<b>C8</b> Operationalization	Limited data collection possibilities, notable time spent, and the concealment of information by business partners are mentioned as challenges for the operationalization of due diligence obligations. Moreover, lack of knowledge and an inability to influence indirect suppliers hinders progress	NGOs (@hrw, Human Rights Watch), Trade associations (@VDMOnline, Mechanical Engineering Industry Association)	Studies have highlighted challenges in gathering qualified information, monitoring, and knowledge retrieval. The lack of power to activate and enforce sustainability requirements on suppliers beyond the first tier is profoundly discussed, confirming the difficulty of exerting influence in this way	Boström et al. (2015), Gruchmann (2022), Ahmed and Shafiq (2022)
<b>C9</b> Untrustworthy certifications	Certifications vary in quality and can be unreliable in terms of ensuring the exclusion of wage dumping and human rights violations. Independent verification of certification bodies cannot be guaranteed	Governments (@vzbv, Consumer Advice Center), NGOs (@ECCHR, European Center for Constitutional and Human Rights)	The limitations of the certification process include its internal and external origins, such as the influence of the purchasers and corruption by local managers. Therefore, alternative certification systems that involve vulnerable stakeholders and are built on trust are examined	Delalieux and Moquet (2020), Liu (2023)
<b>O1</b> Obligatory responsibility	The GSCDDA is regarded as a milestone in the progress toward respect for human rights in the global context. It sets a model for future due diligence legislation, such as the planned European due diligence legislation, which has clear parallels	Governments (@AuswaertigesAmt, Ministry of Foreign Affairs), NGOs (@GfBV, Society for Threatened Peoples)	Legal obligations are frequently discussed as a driver of sustainability in SCM. Studies indicate that obligatory responsibility for the private sector depends significantly on the government's catalyst role	Siddiqui et al. (2020)
<b>O2</b> Improved sustainability conditions	The law is expected to notably improve human rights and environmental conditions. The discourse emphasizes the prevention of global forced and child labor, remedies for occupational health and safety deficiencies, the protection of indigenous populations, and the integration of environmental standards	Governments (@BMZ_Bund, Federal Ministry of Development), NGOs (@Misereor, @RessourceDeutschland)	Several studies have examined the positive effect of SSCM practices on sustainability performance, for instance, through responsible purchasing and the care of social welfare. The literature indicates that traditional practices may be insufficient for managing human rights issues	Kumar and Goswami (2019), Stevenson and Cole (2018)
<b>O3</b> Increased transparency	Disclosing corporate activities and the associated transparency can prevent spreading misleading or supposedly sustainable activities. Additionally, it fosters consumer trust in products and services	Companies (@bechtle_de), Trade Associations (@bnw_ev, Federal Association for Sustainable Business)	The literature affirms that transparency is crucial for achieving SSCM. However, studies assume that disclosure requirements do not necessarily improve transparency if only a few details are provided and lack variation	Flynn (2019), Garcia-Torres et al. (2021), Rogerson et al. (2020)

(continued)



Table 1

Challenge / Opportunity (Expectations)	Practical GSCDDA discourse	Representative Stakeholder Groups	Theoretical SSCM development	References
04 Advanced traceability	The GSCDDA incentivizes efficient tracing and tracking systems for supply chain information. Alternative sourcing strategies and technological innovations facilitate the traceability of supplier information, such as risk identification	Others (@KPMG_DE), Media (@wisskomm_de, Science Communication)	Various approaches for successfully tracing sustainability aspects in supply chains are provided. The integration of technological systems is emphasized, along with the need for a holistic approach, including collaboration and reducing process duration	<a href="#">Garcia-Torres et al. (2019)</a> , <a href="#">Nandi et al. (2020)</a>

Source: Authors' own work

Table 2 Exemplary X post per challenge or opportunity

Challenge / Opportunity (Expectations)	Stakeholder group	Exemplary X post
C1 Legal flaws	NGOs	<i>Today, the final reading on the Supply Chain Due Diligence Act in the Federal Parliament: Watered-down law falls short of expectations and disappoints in terms of environmental and climate protection. We demand a damage and environmentally-related general clause starting from 250 employees. (@Umwelthilfe, Environmental Aid)</i>
C2 Bypassing responsibility	Governments	<i>The Supply Chain Due Diligence Act, which drove it, is unfortunately not a gain in social and ecological responsibility. Its bureaucracy will prompt companies to restrict procurement abroad at the cost of losing development opportunities there. (@c_lindner)</i>
C3 Insufficient sustainability awareness	Media	<i>The development organization Oxfam concludes that German supermarkets and discounters are increasingly enriching themselves at the expense of plantation workers. The imbalance has intensified during the pandemic and the Supply Chain Due Diligence Act. (@RND_de, Editorial Network Germany)</i>
C4 Competitive disadvantages	Others (Practical Experts)	<i>Many companies fear for their competitiveness due to the Supply Chain Due Diligence Act. They are hardly concerned about fines but rather about exclusion by business partners. #supplychains #humanrights (@bakermckenzie)</i>
C5 High bureaucracy And costs	Companies	<i>We in medium-sized businesses feel the impact of this ambitious agenda through excessive bureaucracy, such as the Supply Chain Act. Less paperwork for a future-oriented location in Germany! #AllForTheFuture. (@SHEROLD_DELO)</i>
C6 Regulation uncertainty	Trade Associations	<i>The Supply Chain Due Diligence Act is poorly crafted. Unclear legal terms pose significant litigation risks for companies. They must already prepare for this. (@WBBayern, Bavarian Business Advisory Council)</i>
C7 Uncertain areas and sectors	Media	<i>Negotiations are ongoing regarding the EU Due Diligence Directive, while the German Supply Chain Due Diligence Act has been effective since 2023. It becomes particularly delicate for companies dependent on solar modules, electronic components, or cotton from Xinjiang. (@Europe_Table)</i>
C8 Operationalization	Others (Practical Experts)	<i>Implementing the Supply Chain Due Diligence Act in German companies is underway, but there is still a need for improvement in risk management. Time constraints (81%) and data processing (75%) are the main challenges. (@CONIAS_Risk)</i>
C9 Untrustworthy certifications	Governments	<i>After two years, buying a T-shirt with the Green Button textile label does not guarantee that people in the supply chain are paid decently and that child labor is excluded. This needs to change. #SupplyChainLaw. #ConsumerVoice (@vzbv, Consumer Advice Center)</i>
O1 Obligatory responsibility	NGOs	<i>We are far from reaching the goal, but as of today, we are at the starting line. The Supply Chain Due Diligence Act signifies a paradigm shift. Instead of relying on voluntariness, we are now building our future on corporate due diligence! (@KLJBde, Catholic Rural Youth Movement of Germany)</i>
O2 Improved sustainability conditions	Governments	<i>Children belong in schools—not in mines, textile factories, or toiling in fields! That is why it is so important and commendable to advocate for the Supply Chain Due Diligence Act. This strengthens children's rights and human rights worldwide! (@spdde, Social Democratic Party of Germany)</i>
O3 Increased transparency	Companies	<i>The Federal Parliament passed the Supply Chain Due Diligence Act last Friday with a clear goal: to bring more transparency into the supply chains of products and ultimately ensure the protection of human rights. (@bechtle_de)</i>
O4 Advanced traceability	Media	<i>However, with the implementation of the new German Supply Chain Act, larger enterprises or conglomerates of multiple firms may soon find it advantageous to have production and processing facilities located in close proximity to their operational sites. (@wisskomm_de, Science Communication Forum)</i>

Source: Authors' own work

- Insufficient sustainability awareness: The stakeholder groups argued that the predominant focus of companies is financial return and not the accompanying human rights conditions and environmental consequences during production, leading to insufficient sustainability awareness (C3). Additionally, the groups demand

sensitivity to fair-trade conditions and an intrinsic approach to respecting human rights, especially in resource sourcing. The theory shows that personal values and management commitment profoundly affect (ethical) corporate behavior (Yun et al., 2019) and therefore sustainability performance in supply chains. Both theory

(Gunawardena *et al.*, 2018) and practice show that NGOs, governments and communities, in particular, demand sustainable behavior, and actions in s area can impact a company's reputation.

- **Competitive disadvantages:** The GSCDDA demands that German companies remove harmful elements from their supply chains, which can lead to competitive disadvantages (C4). German companies are obliged to take remedial action to resolve human rights violations in their supply chains. If such actions cannot be implemented, these companies are required to consider terminating their business relationships with the associated partners. Consequently, companies from countries without such legal regulations can exploit this absence and procure more inexpensively than companies with such laws. Furthermore, the autonomy of the companies affected by the GSCDDA may be restricted, as suppliers will no longer be selected based on individual preference. This interferes with the freedom of contract and corporate freedom in the economy. In the literature, competitive disadvantages and associated consequences are not explicitly examined in relation to SSCM but can be understood as an economic risk of SCM in a broader sense. Nevertheless, this interference is an essential challenge, as it can lead to an imbalance of competition and, thus, economic disadvantages.
- **High bureaucracy and costs:** The GSCDDA discourse participants mentioned the high levels of bureaucracy and associated costs (C5) as an excessive burden, which may lead to a loss of profitability. It is argued that the influences of force majeure (e.g. pandemics), minimum wage regulations and price fluctuations are already weakening companies. In this context, comprehensive legal regulations such as the GSCDDA can overburden companies and result in overregulation. Dolci *et al.* (2017) indicate that supply chain governance (i.e. structure and functioning that support corporate supply chain activities) can positively impact operational and financial supply chain performance. Although the study uses a nongeneralizable approach, indications are given that supply chain governance can also be considered as a potential.
- **Regulation uncertainty:** The uncertainty of the regulations (C6) contributes to ambiguity, hindering the reasonable implementation of the GSCDDA. Due to the use of abstract terms, it remains difficult for companies to identify the limits of the latitude for action extended to them for compliance with their due diligence obligations appropriately. For instance, some mentioned that it is ambiguous as to how exactly companies must intervene when indirect supplier misconduct occurs. The literature suggests that a lack of regulation and guidance from authorities poses a notable challenge for SSCM operations (Menon and Ravi, 2021). There is a consensus that this challenge must be tackled with tighter regulations and proper guidance (Gros vold *et al.*, 2014).
- **Uncertain areas and sectors:** Uncertain geographical areas and business sectors (C7) are essential aspects to consider in risk management when reviewing business relationships in terms of their human rights conditions. The textile, agriculture, mining and financial industries are considered

uncertain business sectors in the GSCDDA discourse and related sources (e.g. Adelphi Consult GmbH, 2020). In addition, cocoa, coffee, tobacco, mica, metals and cobalt are seen as uncertain resources in these sectors. The discourse revealed that business relations with China were regarded as uncertain because China has a near-monopoly on rare earth metals, and the Chinese Anti-Foreign Sanctions Law was enacted recently, which may lead to sanctions on companies implementing the GSCDDA. Studies have shown that uncertain areas and sectors must be considered when evaluating suppliers (Xu *et al.*, 2019), which is already the norm in other due diligence legislations, such as the UK Modern Slavery Act (Esoimeme, 2020). However, SSCM theory has not sufficiently addressed the integration of area and sector risk indicators for the identification of human rights and environmental violations, hindering the development of a suitable risk management concept.

- **Operationalization:** The GSCDDA discourse mentioned the difficulty of operationalizing (C8) the law, as companies' knowledge and ability to obtain information from relevant sources and to influence indirect suppliers can be severely limited. The participants, *inter alia*, mentioned limited possibilities for data collection, a significant amount of time spent on coordination and the concealment of information by business partners as relevant criteria. These issues are particularly notable when mapping supplier data (up to tier n), which is the foundation for further risk analysis. In the literature, the challenges of sourcing qualified information, monitoring and knowledge retrieval are discussed in the context of supply chain governance (Boström *et al.*, 2015). Studies have found that the lack of power to activate and enforce sustainability requirements on indirect suppliers especially renders operationalization difficult (Ahmed and Shafiq, 2022; Gruchmann, 2022), which coincides with the practical discourse. Gruchmann (2022) indicates that intermediaries substantially limit a focal firm's power and reveals different nonmediated forms as a solution.
- **Untrustworthy certifications:** Untrustworthy certifications (C9) were mentioned in the GSCDDA discourse. Certifications can serve as risk mitigators when validating a supplier's conformity concerning the appropriate treatment of its employees and the environment through certification procedures (e.g. certification from the Rain Forest Alliance). However, the participants stated that certifications vary substantially in their trustworthiness and that the effectiveness, independence and integrity of certification bodies are frequently not ensured. The literature suggests that the barriers of the certification process are both of internal (i.e. how internal audit and certification processes operate) and external origin (i.e. the environment in which auditors and certifiers operate) (Delalieux and Moquet, 2020). More inclusive quality features and certification systems that involve disadvantaged stakeholders and are built on trust could be derived as a solution (e.g. Liu, 2023).

#### 4.2.2 Opportunities

The opportunities presented in Table 1 are elaborated on in greater detail as follows:

- **Obligatory responsibility:** In the discourse, obligatory responsibility (O1 in Table 1) was discussed as an essential driver of human rights development in supply chains. This is particularly evident for the obligations resulting from the GSCDDA as a far-reaching law that sets a model for future due diligence legislations (Grabosch et al., 2021). For instance, the planned European Corporate Sustainability Due Diligence Directive partly builds upon the GSCDDA. The theoretical discourse strongly agrees that binding regulations are central to sustainability responsibility, enabling governments to take on catalyst roles (Siddiqui et al., 2020).
- **Improved sustainability conditions:** With the law's introduction, improved sustainability conditions (O2) are expected. Specifically, the GSCDDA discourse emphasized the prevention of global forced and child labor, occupational health deficiencies, wage dumping and hazardous chemical use. The protection of indigenous populations due to the prohibition of land grabbing was also highlighted in the discourse. The literature verifies a significant relationship between improving social and environmental conditions in the supply chain and SSCM practices (Kumar and Goswami, 2019). However, it also indicates that traditional practices are insufficient to address human rights violations due to their hidden criminal nature (Gold et al., 2015; Stevenson and Cole, 2018). Hence, there have been proposals to avoid the use of unauthorized subcontracting and reduce the use of third-party labor agencies (Stevenson and Cole, 2018).
- **Increased transparency:** With the GSCDDA, companies must report to the competent authority whether they (and their suppliers) are meeting the required human rights and environmental obligations and publicly confess (German Parliament, 2021). It is argued in the GSCDDA discourse that, by mandating the disclosure of company activities, the law promotes increased transparency (O3) and builds consumer trust in products and services. Thus, greenwashing can also be counteracted. Although transparency is crucial for achieving SSCM (Flynn, 2019; Garcia-Torres et al., 2021), disclosure requirements cannot provide sufficient transparency if they are superficial and lack variations for specific cases (Rogerson et al., 2020). Evidence and independence of action are necessary to enhance credibility (Rogerson et al., 2020).
- **Advanced traceability:** Due to the scope of the information needed to meet due diligence obligations and the complexity of obtaining it (e.g. suppliers going beyond tier 1, charts of raw material extraction areas), advanced traceability (O4) systems and strategies are demanded by affected companies. The GSCDDA encourages innovation and digital solutions to optimize the traceability of supplier information along the supply chain so that risk analyses can be more targeted. Furthermore, alternative designs for relocating production and processing in the supply chain were mentioned in the GSCDDA discourse. While the GSCDDA discourse focused more on individual traceability strategies such as insourcing or blockchain technology, the literature pursues a holistic approach, including factors such as quality compliance, process improvement, flexibility, cost

reduction and process duration shortening (Garcia-Torres et al., 2019; Nandi et al., 2020).

#### 4.2.3 Conflicting challenges and opportunities

A persistent concern among the scholars focused on stakeholder theory is dependency imbalances between parties (e.g. between companies and stakeholders) that propagate information asymmetries (Kulkarni, 2000). Information asymmetries can have various origins, such as a lack of knowledge about processes or physical and social distance among supply chain partners (Sarkis et al., 2011; Simpson et al., 2007). Furthermore, it is important to consider the controversy around multiple logics, such as sustainability and financial logic (also referred to as “market logic”). Sustainability logic aims to balance environmental, social and economic sustainability, while the focus of financial logic is profitability and is only concerned with sustainability if the latter can lead to greater sales or reduced costs (Sayed et al., 2017). This circumstance is predominantly discussed in institutional theory, which asserts that balancing different institutional pressures is accompanied by conflicting rationales (D'Souza et al., 2022; Sayed et al., 2017; Vidal et al., 2023). Nevertheless, the balancing of divergent logics also plays a crucial role in navigating the pressure stemming from GSCDDA and stakeholder groups' expectations. Interrelating the identified challenges and opportunities of the diverse stakeholder groups allows us to delineate contradictory and competing stakeholder expectations and diverging logics.

Our findings highlight two major contrasts at a higher level. First, key SSCM mechanisms, such as transparency and traceability, are significantly constrained by legal, operational and dependency-related challenges, contributing to information asymmetry (Sarkis et al., 2011). For instance, the traceability of supply chain data (O4) is hindered by obstacles arising from supplier information concealment and a lack of knowledge of processes (C8), limited enforcement in risk-prone areas and sectors (C7) and questionable certification systems due to deficiencies in quality and trust (C9). Case in point: the “Companies” stakeholder group advocates “[...] the creation of transparency through comprehensive due diligence” (@covestro, Covestro AG). However, the “NGOs” stakeholder group contends that “[...] It becomes very complicated when you have production facilities in regions where it cannot be clarified whether forced labor is employed” (@hrw, Human Rights Watch), and the “Media” group states that “[...] many companies lack the necessary data to assess whether partners comply with the requirements of the Supply Chain Due Diligence Act” (@LogistikWatch).

Second, improved sustainability conditions (O2) and increased obligatory responsibility (O1) come into conflict with competitive, cultural and economic pressures. Our findings suggest that increased costs and bureaucracy (C5), interference with free competition (C4), the circumvention of cultural and societal norms in (developing) countries (C2) and a lack of sustainability awareness among top management in companies (C3), for example, come into competition with efforts to implement SSCM practices. For instance, a post from the “Governments” stakeholder group reinforced the relevance of the GSCDDA: “Human rights apply worldwide. This includes fair working conditions and wages as well as environmental protection



[...]” (@BMAS\_Bund, German Federal Ministry of Labor and Social Affairs). The “Trade associations” group revealed a conflict in this area, arguing that “[...] *the autonomy of the industrial middle class, which relies on exports, is jeopardized regardless of all current crises*” (@verbaende, German Associations Forum). Acting upon the challenges and opportunities can yield negative effects (e.g. declining business relationships, particularly with developing countries). The results illustrate that implementing the GSCDDA following a sustainability logic collides with the financial logic of some stakeholder groups.

## 5. Discussion

### 5.1 Theoretical implications

Our research builds upon previous studies on stakeholder interests in SSCM by investigating the polarizing expectations of stakeholder groups, with a particular focus beyond the supply chain (Meixell and Luoma, 2015; Svensson et al., 2018; Vidal et al., 2023). Moreover, it is a first paper to do so in a specific case of due diligence regulations. The findings affirm that, in addition to conventionally analyzed upstream or downstream stakeholders, market stakeholders (i.e. trade associations and others) and societal stakeholders (i.e. governments, NGOs, communities) are highly relevant to be considered in a company’s SSCM (Svensson et al., 2018). They possess specialized expertise in the field of sustainability and legal due diligence (e.g. NGOs as representatives of affected individuals, lawyers, service providers and certifications agencies allocated to the stakeholder group “others”), can exert a significant influence on the public due to their reach (e.g. media, governments), or reflect the societal acceptance of SSCM practices driven by due diligence laws (e.g. communities). Our findings also demonstrate that the multiplicity of diverse stakeholder expectations and their inherent incongruities amplify information asymmetry and diverging logic.

Various challenges and opportunities are addressed in the SSCM literature. However, there are discernible research gaps that need attention. Recommendations regarding some of the inferred challenges already exist in the literature, such as for the challenge of untrustworthy certifications (C9) (e.g. Liu, 2023) and insufficient sustainability performance (C3) (e.g. Yun et al., 2019). However, particular attention should be directed toward addressing issues related to operationalization (C8). Both the practical GSCDDA discourse and the theoretical SSCM development reveal that substantial obstacles in information processing, such as a lack of expertise, limited influence on suppliers and insufficient data access, exist and impede successful SSCM implementation. This circumstance notably impacts the quality of the implementation measures and the management of information asymmetries. It primarily occurs in relationships with indirect suppliers (tier 2 to n), as no direct access or influence such as contractual obligations, exist.

Furthermore, it is necessary to explore the effectiveness of due diligence laws by evaluating whether the inferred challenges and opportunities have materialized. Strikingly, some studies indicate a reverse effect of the original motivation of the due diligence laws. This has been induced, inter alia, by cultural, legal or economic structures such as economic competition and private property (Delalieux and Moquet, 2020). Our findings substantiate these observations by providing evidence regarding the gap between sustainability

logic and financial logic and uncovering imbalances in the implementation of SSCM practices. Moreover, a profound understanding of the failures and successes of sustainable actions in the multitier supply chain is needed (New, 2015), which could be achieved by “bottom-up” studies. For instance, the literature refers to existing research gaps regarding the consideration of individuals directly affected by human rights violations (Carter et al., 2019). Thus, the literature could be further enriched by considering vulnerable stakeholders working on-premises in future studies to provide valuable insights into worker dependencies and additional challenges.

### 5.2 Practical implications

Companies will face the challenge of preventing human rights violations by their indirect suppliers, especially when their influence on those suppliers is severely limited. For instance, rare earth materials and metals are only available in specific areas and adequate substitute supplies cannot be arranged (i.e. single sourcing). Thus, the traceability of the global supply chain (O4) under the inclusion of uncertain areas and sectors (C7) in the risk management of suppliers plays a crucial role. To determine uncertain areas and sectors, international country scorings (e.g. Global Rights Index) and product risk lists (e.g. list of goods produced by child labor or forced labor) that consider human rights obligations can be used (Buttke et al., 2022). Furthermore, collaborations with national and international initiatives and networks, for example, can uncover indirect suppliers (tier 2 to n) and social and environmental risks in the supply chain (Garcia-Torres et al., 2021). In addition, complaints of human rights violations could be addressed jointly (e.g. common complaint procedure), and the influence on risky suppliers and enforcement of remedial measures could be increased collectively. The findings suggest that the GSCDDA is creating new markets and pushes innovation regarding technological solutions for supplier data mapping and risk analysis (O4). Since companies often lack the means to check and control complex supply chains, it is critical for them to integrate digital systems for sustainability assessments and AI-supported media research systems (e.g. Prewave or Ecovadis).

From a political perspective, individual national binding laws cannot single-handedly resolve global social and environmental problems (C2). However, the GSCDDA is an initial step toward more stringent supply chain regulation (O1) and a “trial model” to observe whether the desired goals can be achieved. Knowledge of the challenges and opportunities outlined here could contribute to addressing the points of conflict and adjusting due diligence obligations, such as the European Corporate Sustainability Due Diligence Directive. For instance, target-oriented support could be provided (e.g. guidelines from the relevant authority) (mitigating C6), reliefs could be offered (e.g. bureaucracy reduction programs) (mitigating C5) and the needs of vulnerable individuals for whom long-term solutions may be necessary could be identified (mitigating C2).

### 5.3 Limitations and future research

First, we captured the GSCDDA discourse for a specific period. Future research could enhance our analysis by incorporating more recent posts. Moreover, we collected data solely from X. To increase generalizability, future research could assess our findings through additional social media platforms and other sources of

qualitative data in general. Furthermore, future research could assess our findings through alternative analyses [e.g. topic modeling (Schmiedel et al., 2019)] to infer expectations or via cross-analysis to examine stakeholder inconsistencies. Additionally, it may be interesting to interview SSCM stakeholders directly and explore whether interview findings differ from ours. For instance, one could explore whether interview settings increase social desirability biases compared to discourses naturally happening on X. Conversely, while interviews may be more likely to elicit social desirability biases toward the interviewers, X content may be subjected to its own biases. For instance, in this study, some users of the “Media” stakeholder group might have shared polarizing posts to attract attention. This study partly mitigated such biases by incorporating a large variety of stakeholders per group. For example, the media group contained posts from both conservative and liberal outlets. In this vein, using X posts enabled us to consider the various relevant stakeholder groups mentioned in the literature (Meixell and Luoma, 2015) and thus counteract omission bias, which may be harder to achieve in interview settings. From a network perspective, our findings have limitations in elucidating the power dynamics between stakeholders or between companies and their stakeholders. To overcome this limitation, stakeholder-agency theory could be applied to isolate the power differentials between parties (Hill and Jones, 1992).

## 6. Conclusion

To answer the RQs (Section 1), we established a theoretical framework using a stakeholder lens to classify and synthesize the GSCDDA discourse on X. Institutional and stakeholder theory guided our examination concerning how the regulatory pressure emanating from the GSCDDA shapes the inherent interests of stakeholders. By doing so, involved stakeholder groups and anticipated challenges and opportunities of the GSCDDA were identified, interrelations between these components were drawn, and a comparison with the theoretical SSCM development was provided. The hereby gathered results are presented in Figure 2 and Table 1 and described in this paper. Since corporate due diligence regulations are developed globally at national and supranational levels, it is becoming increasingly important for companies to integrate stakeholder groups’ interests into their SSCM practices to ensure their effectiveness and gain legitimacy under the terms of these regulations. In this context, our study offers the following key contributions. First, it furnishes essential empirical evidence of the importance of integrating secondary stakeholder groups’ interests when considering due diligence in SSCM and which specific interests need to be addressed. Moreover, indications of the conflicts between the challenges and opportunities were discussed, suggesting stakeholder inconsistencies and divergent logic. Second, it links the parallel concepts of legal due diligence and theoretical SSCM, revealing the intersecting subject areas and discernible research gaps. Lastly, it offers a methodological framework to classify and synthesize public data on SSCM through the dimensions of participants, sentiments and topics, facilitating the integration of social media approaches into institutional and stakeholder theory. In practical terms, a sound knowledge of SSCM challenges and

opportunities will allow early precautions to be taken, SSCM practices to be adapted and predictions of future designs of SSCM to be revealed. As the forthcoming European Corporate Sustainability Due Diligence Directive has substantial overlap with the GSCDDA, we can already use our findings for the benefit of theoretical and practical learning on SSCM.

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## **Appendix**

**Table 2** provides exemplary X posts corresponding to inferred challenges and opportunities. The first column details the challenges and opportunities. The further columns display exemplary posts describing challenges and opportunities from different stakeholder groups.

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