

**SHIFTING THE CONTEXT: REVIEWS AND RESEARCH AGENDAS
FOR TRADITIONAL, REPUTATIONAL AND SOCIETAL SUPPLY CHAIN RISK**

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***Accepted for publication in
Supply Chain Management: An International Journal
18 September 2024 ***

<https://doi.org/10.1108/SCM-04-2024-0280>

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Abstract

Purpose: This study aims to shape the future trajectory of scholarly research on traditional, reputational and societal supply chain risks and their management.

Design/methodology/approach: The research employs a narrative literature review of the overview type. In order to control bias stemming from the subjectivity of our methodology, we synthesized the relevant literature transparently and established various safeguarding procedures.

Findings: The established research stream on traditional supply chain risk has generated a wealth of concepts that can potentially be transferred to the study of reputational and societal risks. The maturing research stream on reputational risks has mostly focused on risk manifestation, from the upstream perspective of the focal firm. The emerging scholarship on societal supply chain risks has anecdotally highlighted detrimental effects on contextual actors, such as society-at-large.

Research limitations/implications: The study shifts scholarly attention to the role of the context in the risk manifestation process—as a potential risk source for traditional supply chain risk, during the risk materialization for reputational supply chain risk and as the locus of the risk effect for societal supply chain risk.

Originality: This review is unique in that it fosters a holistic understanding of supply chain risk and underscores the increased importance of the context for it. The socio-economic, institutional and ecological contexts connect the three reviewed research streams. Detailed research agendas for each literature stream are developed, comprising 23 topical areas in total.

Keywords: Literature review; reputational supply chain risk; societal supply chain risk; supply chain sustainability risk; traditional (firm-related) supply chain risk

INTRODUCTION

Within the field of supply chain management (SCM), supply chain risk management (SCRM) represents an important topical domain, which has received rising attention and witnessed considerable development over the last decades. The field's dynamic evolution has resulted in numerous investigations and valuable literature reviews that synthesize research findings and examine key concepts (e.g., Ho et al., 2015; Fan & Stevenson, 2018; Pournader et al., 2020; Wicaksana et al., 2022). However, SCRM research, and thus most of these reviews, focus primarily on risks associated with the material flow which materialize in supply chain disruptions. We refer to research in this stream as 'traditional' supply chain risk, denoting a potential negative deviation from an assumed performance value that results in detrimental outcomes for the focal firm (Knight, 1921; Wagner & Bode, 2006). From a traditional SCRM perspective, these risks emerge from supply chain-immanent sources such as inaccurate demand forecasts or supplier failure, as well as from sources external to the supply chain (i.e., its context), such as natural disasters or terrorist attacks (Chopra & Sodhi, 2004; Tang, 2006a) that often lead to operational failure (Wagner & Bode, 2006).

For about a decade and a half, scholars have also begun examining another type of risk, namely 'reputational' supply chain risk. This risk emerges from unsustainable conditions in a focal firm's supply chain, materializes in adverse stakeholder reactions and causes reputational damage, often without an accompanying disruption (Hofmann et al., 2014). This relatively younger type of risk presents a first shift away from the material flow and supply-chain immanent risk sources towards a materialization in the supply chain context.

Lately, scholars have shifted the context in the consideration of supply chain risks even further. Studies anecdotally found evidence for supply chains which become part of broader

problems that do not necessarily have a direct negative impact on companies, but rather on the environment and society-at-large (e.g. Mukherjee and Sinha, 2018; Huang et al., 2021). Duensing et al. (2023) proposed to categorize these risks as ‘societal’ supply chain risk. Societal supply chain risk also acknowledges the importance of the context – like reputational risk – but differs in that it has detrimental effects on stakeholders other than focal firms and external to supply chains. For example, oversupply of drugs through North American supply chains can augment the opioid crisis (Skilton & Bernardes, 2022), mainly negatively effecting societies.

Based on the shared understanding that a supply chain’s context occupies a major role for supply chains and their management (Pagell & Wu, 2009; Wieland, 2021)—for traditional supply chain risk as a potential risk *source* (e.g., natural disasters), for reputational risk as the locus of risk *materialization* (e.g., adverse stakeholder reactions) and for societal risk as the risk *effect* (e.g., crossing of planetary boundaries)—we conduct a literature review on each stream. Our motivation in doing so is that the consideration of the supply chain context, which subsumes numerous dimensions such as the socioeconomic, institutional, linguistic and spatial (Montabon et al., 2016; Busse et al., 2016a; b) and integrates different levels of analysis such as the political-economic and the planetary (Wieland, 2021), hopefully facilitates important insights and implications for future SCRM research, which may have gone unnoticed in prior reviews. Moreover, reputational and societal supply chain risks have only received little attention in previous reviews on the broader concept of “supply chain risk” (e.g. Ho et al., 2015; Fan & Stevenson, 2018; Pournader et al., 2020). Those reviews either neglect the concept of reputation and sustainability altogether or just drop them. Rafi-Ul-Shan et al. (2018), for example, criticize that the concepts of risk and sustainability have been treated separately in the literature, however fail to develop a framework connecting them, apart from a descriptive overview. Cunha et al. (2019), on the other hand,

conduct a structured literature review on social issues that may trigger reputational risks (called “social risks”), yet rely strongly on Hofmann et al.’s (2014) concluding framework. On the contrary, Wicaksana et al. (2022, p. 7156) emphasize this shortcoming of not including “emerging and hidden risks, such as sustainability/reputational risks”. Their review even identifies “social risks”, i.e. “disruptions that prevent the establishment of honourable and equitable actions for supply chain parties (i.e. workers, partners) and society” (Wicaksana et al., 2022, p. 7162). However, this review remains largely bibliometric and descriptive and does not provide a comprehensive overview for future research on either social or reputational/sustainability risks. The closest to a review on reputational supply chain risk is von Berlepsch et al.’s (2024) recent review of the “importance of corporate reputation for sustainable supply chains”. However, this review has a narrow focus on “corporate reputation” and hence neglects the close interconnectedness between sustainable supply chain risks and reputational risks which this article specifically recognizes. Accordingly, a dedicated review of the three streams of traditional, reputational and societal supply chain risks is still amiss.

Our research not only synthesizes key findings and identifies multiple points of contention. Rather, as its main contribution, it provides detailed future research agendas tailored to traditional, reputational and societal supply chain risk. Thereby, this article provides guidance to SCRM scholars in their quest to conduct impactful research.

METHODOLOGY

This section provides the rationale behind the scope of the review and depicts our motivation for conducting a narrative review. Last, we elaborate on the employed procedures.

Scope of the Review Throughout the Different Streams

The observation that the critical role of supply chain context connects the streams of traditional,

reputational and societal supply chain risks—even though the roles that the context plays differ from one stream to another—motivated us to review them jointly, convinced that they can inform each other. For the firmly established literature stream on traditional supply chain risk, multiple literature reviews with highly valuable research implications are already available (e.g., Ho et al., 2015; Fan & Stevenson, 2018; Pournader et al., 2020; Wicaksana et al., 2022). Our rationale for still incorporating this stream is twofold. First, we conjecture that its insights have much to offer to the younger streams of reputational and societal supply chain risk. For example, the latter two could benefit from adoption or adaption of concepts such as vulnerability, robustness, agility and ultimately resilience (Holgado et al., 2024). Accordingly, it would not have been sensible or wise to ignore their achievements nor to repeat what previous reviews already accomplished.

Second, traditional SCRM research has mostly viewed the context in which supply chains are embedded only as a source from which some risks happen to emerge (e.g., Wagner & Bode, 2006). We argue that a more informed consideration of the interactions between supply chains and their context holds significant potential for future research on traditional risk. For example, some of the most pressing questions for supply chain management and the global economy overall relate to whether, and possibly to what extent, globalization and outsourcing should be reversed (Foerstl et al., 2016; Di Sano et al., 2023).

The maturing stream of reputational supply chain risks has evolved fast over the last ten to fifteen years (Petersen & Lemke, 2015). At this point, it comprises dozens of scholarly investigations, which we argue are now in need of being overviewed. We seek to highlight past milestones of the stream and suggest a trajectory for future research through our narrative review.

In contrast, the study of societal supply chain risks—mostly without the label—is still in its infancy, with only a handful of initial studies that we are aware of. While a review for such a

young concept is rather unconventional, we aim to kickstart an overdue conversation on what research on societal supply chain risk could entail when considered as a research stream that stands for itself. In summary, the different levels of maturity of the three streams under review set slightly different objectives and justify different approaches to our study, with shifting balances between reviews and research agendas (Figure 1).

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For each type of risk, our goal is first to review its *conceptualization*, i.e., to identify any ambiguities amongst extant definitions and to establish a common understanding of the respective concept for future research. To facilitate the handling of the respective type of risk in corporate practice, we also seek to review the research concerning its *management*. As we assume that the latter necessitates a thorough understanding of where the respective risks come from, we also review the literature for the respective risk *sources*. The tripartite structure of conceptualization, sources, and management proves effective for traditional and reputational supply chain risks, whereas research on the sources and subsequent management of societal risks is still largely lacking. Accordingly, the respective section leads directly from the conceptualization of societal risks to future research on them.

The Narrative Review Research Design

We chose a ‘narrative’ review of the overview type (Easterby-Smith et al., 2002; Green et al., 2006). Overviews a) typically aggregate much information in a single, relatively easy-to-read narrative, b) take broad perspectives often scrutinizing the historical evolution of the study of a topic, and c) consider theory and empirical context jointly (Green et al., 2006). Most *Academy of Management Annals* articles and publications in the annual review issue of the *Journal of*

Management employ narrative literature reviews of the overview type. These studies tend to be written by rather senior scholars and typically seek to provide new directions for a field. Supply chain management in contrast has witnessed a shift towards ‘structured’ (also called ‘systematic’) literature reviews (Seuring et al. 2021), whose rather mechanistic processes (Tranfield et al., 2003; Durach et al., 2017) provide an attractive impression of objectivity to readers. It is worth noting that, despite all the procedural prescriptions for conducting structured literature reviews, these types of reviews also necessitate that authors use their understanding of their field, experience, and creativity to come up with meaningful future research suggestions (Seuring et al., 2021). In both cases, profound understanding of the literature is pivotal towards further theory development (Weick, 1995). Consequently, the best criterion to evaluate such articles might be the extent to which the research agendas are interesting and useful for shaping the future development of the respective field.

In line with previous supply chain management research (e.g., Taticchi et al., 2015; Rejeb et al., 2021; Browning et al., 2023; Cole et al., 2023), we chose a narrative literature review for a multitude of reasons. First, the aforementioned different levels of maturity of the three streams to be reviewed require different approaches, a flexibility requirement that can best be met with a narrative review (Snyder, 2019). Moreover, the narrative literature review is particularly well-suited for addressing issues of a broader scope, identifying gaps in researchers’ knowledge and providing directions for future research (Collins & Fauser, 2005; Taticchi et al., 2015). We start from the observation that SCRM, which has generated vast amounts of valuable knowledge, has traditionally been very, if not overly, focused on the material flow domain, although the context of a supply chain plays a key role throughout the manifestation process via the risk emergence, materialization, and effect stage. This slightly critical assessment necessitates open-mindedness in

evaluating prior insights and conceiving pathways forward. The degrees of freedom inherent in narrative literature reviews are particularly suited to such a situation (Green et al., 2006). Moreover, the “sheer size of the existing literature” on traditional supply chain risks “prohibits a comprehensive, structured review” (Browning et al., 2023, p. 1842). Furthermore, for the research stream of societal risk, we also anticipate challenges in guaranteeing completeness if a structured literature review method was chosen. As the term “societal supply chain risk” was only recently coined by Duensing et al. (2023), studies that do not explicitly mention this term but nevertheless study similar phenomena could not be captured through search terms and would ultimately not be included in the sample (such as Gray et al., 2011; Mukherjee and Sinha, 2018, or Huang et al., 2021).

Employed procedures

We began this investigation with what we believe to have been a profound understanding of the literature on traditional supply chain risk and an intimate knowledge of the other two streams. Whereas we initiated our analysis of traditional risks with numerous dedicated literature reviews and the publications cited therein, we compiled a chronological overview of the studies of reputational risk that we were aware of as a start. For the study of societal risks, we commenced with the study of Duensing et al. (2023) and the research by Skilton & Bernardes (2022) cited therein. Subsequently, we intensively employed keyword searches and cross-referencing techniques (Denyer & Tranfield, 2009), resulting in approximately 280 studies that we intended to refer to within this article. Later, we had to remove many references again for word length restrictions. We thus believe to have generated a very comprehensive overview although, like most authors of narrative reviews (Green et al., 2006), we shy away from promising “completeness” of the discussed literature base.

While we relied on the flexibility available to researchers in a narrative review, we were also cognizant of the inherent dangers of the employed methodology. In particular, we were concerned that we might end up writing an opinion piece backed up with references instead of offering an objective view of the prior literature (Green et al., 2006). Further dangers comprise an overreliance on our own previous works and scholarly perspectives (Green et al., 2006). To avoid or at least mitigate these dangers and to foster rigor, we established several safeguarding procedures. While we decided upfront that we wanted to exploit the potential of narrative reviews to dedicate more attention to some publications than to others, we deliberately operationalized this criterion to prevent ourselves from subjectively “favoring” certain studies. Accordingly, we scrutinized where articles were published, how often they had been cited, how rigorous the methods appeared, and how convincing the theoretical arguments seemed before deciding on their prominence in our review. Moreover, we deliberately searched for contradictory findings and tried to make these transparent within our overview. As a general rule, one author reviewed the literature and the others acted as critical counterparts. We discussed and rewrote all sections numerous times until everyone agreed with them, to establish as unbiased an account as possible.

Despite these efforts for methodological rigor, the following review sections cannot represent an objective portrayal of the accumulated evidence. Rather, they should be viewed as the authors’ best subjective efforts aiming at objectivity. The associated research agendas represent the outcome of numerous discussions on the desirable evolution of the three research streams.

TRADITIONAL SUPPLY CHAIN RISK

Conceptualization of Traditional Supply Chain Risk

Scholarship surrounding traditional supply chain risk represents a well-established domain, with a large number of reviews and research agendas published over the last decades (e.g., Tang, 2006a;

Tang & Musa, 2011; Sodhi et al., 2012; Ho et al., 2015; Heckmann et al., 2015; Fan & Stevenson, 2018; Pournader et al., 2020; Wicaksana et al., 2022; Browning et al., 2023). Unlike other disciplines such as finance and broader management where the notion of risk captures both a potential upside (positive) and a potential downside (negative) deviation from an expected performance, thus inheriting all outcomes of an expected value (Markowitz, 1952; March & Shapira, 1987), the research field of SCM defines supply chain risk commonly “as the negative deviation from the expected value of a certain performance measure, resulting in negative consequences for the focal firm” (Wagner & Bode, 2006, p. 303).

Supply chain risk thus refers to possible future events with a measurable uncertainty that are characterized by their likelihood of occurrence and impact on a focal firm’s and potentially also on supply chain partners’ (Hendricks et al., 2009) performance objectives, including profit, operating income, return on sales, firm value, product quality, and customer satisfaction (Knight, 1921; Hendricks & Singhal, 2005a; Craighead et al., 2007; Tang & Musa, 2011; Heckmann et al., 2015). It can also impact stock price performance (Hendricks & Singhal, 2005b). In essence, supply chain risk spawns significant financial, operational, and relational costs, either for systematically managing the risk or for recovering from it (Blackhurst et al., 2005; Hendricks & Singhal, 2005b; Wagner & Bode, 2008; Ponomarov & Holcomb, 2009; Speier et al., 2011; Sodhi et al., 2012).

The SCRM research domain recognizes a link between supply chain risk and supply chain vulnerability (Christopher & Peck, 2004), although scholars employ different understandings of supply chain vulnerability as reviewed by Heckmann et al. (2015). In their definitions, scholars often refer to supply chain characteristics, supply chain exposure, and supply chain risk. While there have been efforts in specifying supply chain characteristics, for example as organizational

and functional conditions and practices (Barnes & Oloruntoba, 2005), certain supply chain characteristics (Wagner & Bode, 2006), such as an increased interconnectivity of the supply chain network (Kim et al., 2015) and a particular supply chain design (Wagner & Bode, 2006; Craighead et al., 2007; Bode et al., 2011; Bode & Wagner, 2015), the notion of supply chain exposure has received limited dedicated attention (e.g., Simchi-Levi et al., 2014; Heckmann et al., 2015).

Traditional Supply Chain Risk Sources

Traditional supply chain risks typically emerge from cross-organizational flows of materials, information and funds (i.e., from internal manufacturing, downstream or upstream partners) or from natural disasters and man-made catastrophes such as terrorism. Risks emerging from the supply-related flow are classified as, for example, operational, endogenous or micro-risks and the latter risks are synthesized as catastrophic, exogenous, or macro-risks (Wu et al., 2006; Wagner & Bode, 2008; Tang & Musa, 2011; Sodhi et al., 2012; Ho et al., 2015; Wicaksana, 2022). Such a classification into internal and external supply chain risks, albeit sometimes with different terms, is well established in the SCRM research domain (Jüttner et al., 2003; Wu et al., 2006; Tang, 2006a; Trkman & McCormack, 2009; Olson & Wu, 2010; Heckmann et al., 2015). Recently and in the aftermath of the COVID-19 pandemic, attention has also shifted towards systemic risk and disruptions, where multiple actors and industries are globally affected simultaneously (Browning et al., 2023; Shen & Sun, 2023; Lemke et al., 2024).

In the aftermath of recent trade disagreements and conflicts between nation-states, such as Brexit and the emerging US-China trade war (e.g., Sodhi & Tang, 2021; Roscoe et al., 2020, 2022), geopolitical supply chain risks have received increased scholarly attention (Roscoe et al., 2020; Moradlou et al., 2021; Bednarski et al., 2023; Browning et al., 2023). They have been “associated with wars, terrorist acts, and tensions between state actors that affect the normal and peaceful

course of international relations” (Caldara & Iacoviello, 2018, p. 2). Such risks often arise from the dependency on specific critical materials and components that are often not substitutable and the associated geographical availability of resources (Kraljic, 1983; Gemechu et al., 2015; Wiedmer et al., 2020). The healthcare sector has recently been identified as particularly vulnerable to drug shortages (Badreldin & Atallah, 2021; de Vries et al., 2021) in this context. Potential reasons for these shortages are direct issues, such as manufacturing and quality problems, poor outsourcing decisions, inventories, etc., but also quota systems and import/export regulations, which can be affected by “price, tendering and reimbursement policies” (de Vries et al., 2021, 1570).

Considering the features of a supply chain design that augment a firm’s vulnerability to supply chain risk, SCRM scholarship has referred to customer dependence (e.g., Hallikas et al., 2005), supplier dependence (e.g., Jüttner, 2005), supplier concentration (e.g., Tang, 2006b), single sourcing (e.g., Hendricks & Singhal, 2005b), density, complexity, and node criticality (Craighead et al., 2007), horizontal, vertical, and spatial complexity (Bode & Wagner, 2015), as well as global sourcing (e.g., Peck, 2006). Further, the level of vulnerability also depends on the sources of disturbance (i.e., direct vs. indirect sources) and categories of disturbance (i.e., quantitative and qualitative) (Svensson, 2000).

Managing Traditional Supply Chain Risk

The main objective of SCRM is to build capabilities to reduce vulnerability (e.g., Jüttner et al., 2003; Wieland & Wallenburg, 2012) and costs (Manuj & Mentzer, 2008b), control and reduce negative impacts (Ho et al., 2015), improve market position (Fan & Stevenson, 2018), assure profitability (Tang, 2006a) and stabilize business continuity (Goh et al., 2007). In this context, the SCRM discourse is concerned with the identification, assessment, management, and monitoring

of supply chain risk (Zsidisin et al., 2005; Tummala & Schoenherr, 2011; Fan & Stevenson, 2018) through the assimilation of appropriate strategies and tools into business activities (Manuj & Mentzer, 2008b; Wieland & Wallenburg, 2012; Norrman & Wieland, 2020).

To facilitate SCRM, the pertinent literature has developed classification schemes for identifying (e.g., Christopher et al., 2011; Louis & Pagell, 2019) and assessing risk (e.g., Jüttner et al., 2003), and has examined drivers impacting the probability or impact of risk (e.g., Wagner & Bode, 2006; Ritchie & Brindley, 2007). Further, scholars have outlined risk identification (e.g., Trkman & McCormack, 2009; Rao & Goldsby, 2009) and assessment approaches (e.g., Tsai et al., 2008; Knemeyer et al., 2009), risk monitoring systems (e.g., Tummala & Schoenherr, 2011), as well as various strategic and operational risk management actions (e.g., Tang, 2006a, 2006b; Manuj & Mentzer, 2008b; Tang & Musa, 2011), including avoidance, hedging and insurance, transferring, mitigation, and acceptance (e.g., Jüttner et al., 2003; Zsidisin & Ellram, 2003; Kleindorfer & Saad, 2005; Ritchie & Brindley, 2007). Such approaches aim to reduce the likelihood of occurrence, the adverse effect, or both (Sodhi et al., 2012; Zsidisin & Henke, 2019).

Whenever traditional supply chain risk materializes (e.g., through a supply chain disruption), the focal firm has to become aware of it (i.e., discovery process) and subsequently recover from it (i.e., recovery process) by implementing and constantly monitoring of appropriate mechanisms and techniques to mitigate the negative impacts (Blackhurst et al., 2005; MacDonald & Corsi, 2013). The latter, however, may necessitate the redesign of a supply chain, a circumstance that scholars have argued is unavoidable for an effective SCRM anyway (Blackhurst et al., 2005; Wagner & Bode, 2008; Colicchia & Strozzi, 2012). For example, to overcome the negative effects of supply chain risk, focal firms establish safeguards in the supply chain (i.e., buffering) or manage resource dependencies (i.e., bridging) (Bode et al., 2011).

A very recent variant of bridging refers to the phenomenon of friend-shoring, sometimes also referred to as ‘ally shoring’ (Kessler, 2022; Yellen, 2022). This concept refers to a relocation of supply chains to trusted countries or countries with aligned interests and favorable politics due to growing political tensions (Kessler, 2022; Yellen, 2022). By re-designing their supply chains, focal firms can adjust their dependence on supplier resources (Skilton, 2014) and thus mitigate or even avoid risk. Relocation strategies have recently been investigated in the context of Brexit (Roscoe et al., 2020; Moradlou et al., 2021), COVID-19 (van Hoek & Dobrzykowski, 2021) or other geopolitical tensions and wars (Bednarski et al., 2023; Srai et al., 2023), acknowledging the need of higher control over critical supply chains that deliver vulnerable goods (DBT, 2024). Especially shortages of drugs, blood or other pharmaceutical materials have severe repercussions so that the supply chains of these products have recently moved into focus, particularly during the COVID-19 pandemic (Badreldin & Atallah, 2021; de Vries et al., 2021). Management of these critical supply chains and sectors should therefore be a strategic and frequent exercise that applies a system view, including the cause-and-effect relationships among governmental interventions and their effects (de Vries et al., 2021). However, still “most shortages are managed reactively instead of proactively” (Ellis, 2020; de Vries et al., 2021, p. 1571).

The call towards more strategic sourcing in these areas is also well reflected through recent political initiatives, such as President Biden’s Executive Order 14017 (“Executive Order on America's Supply Chains”) that covers 6 key areas, namely “the defence industrial base; the public health and biological preparedness industrial base; the information and communications technology (ICT) industrial base; the energy sector industrial base; the transportation industrial base; and supply chains for agricultural commodities and food production” (The White House, 2021) or the European Union’s Critical Raw Materials Act (CRMA; regulation (2024/1252).

Further recent debates revolve around strategic approaches such as completely ‘decoupling’ from certain countries (i.e., cutting off business) or ‘de-risking’ from certain economies (i.e., diversifying procurement) in cases of political conflict (Alabi, 2023; Bloomberg, 2023). In that vein, SCRM and supply chain (design) strategies are perceived as a “two-sided coin” (Jüttner, 2005, p. 137).

Scholarship in the SCRM research domain proposes reactive strategies, denoting approaches to respond quickly to critical situations, proactive strategies, referring to means to withstand or altogether avoid adverse events, and a blend of both (Wieland & Wallenburg, 2012; Grötsch et al., 2013). Reacting ex post to disruptions necessitates a highly ‘agile’ supply chain (Hoek et al., 2001) that is able “to respond rapidly to unpredictable changes in demand or supply” (Christopher & Peck, 2004, p. 18) by adjusting operations (Gligor & Holcomp, 2012). Agile supply chain operations comprise, for example, the monitoring of evolving customer needs (Hallikas et al., 2004), postponing the configuration process (Swaminathan & Lee, 2003), and preparing business continuity (Norrman & Jansson, 2004). By proactively implementing precautionary measures, a supply chain becomes ‘robust’ due to its “ability to cope with errors during execution” (Christopher & Peck, 2004, p. 18), thereby maintaining functionality while resisting negative impacts (Tang, 2006b). In the pertinent literature, the terms ‘avoidance’ and ‘resistance’ are commonly used to characterize robustness, as robust supply chains can either withstand a disruption or implement measures to prevent it (Durach et al., 2015). This incorporates, for example, a multiple sourcing (Tang, 2006b) or more generally a back-up strategy (Azadegan et al., 2013).

Supply chains strategically employing both proactive and reactive strategies are referred to as ‘resilient’ (Melnyk et al., 2014); they are designed to be simultaneously agile and robust

(Wieland & Wallenburg, 2013). Resilient supply chains are less vulnerable to disruptions and more capable to deal with their occurrence, thereby reducing supply chain risk and its impact on a focal firm's performance (Sheffi & Rice, 2005; Ponomarov & Holcomb, 2009; Zsidisin & Wagner, 2010; Blackhurst et al., 2011, Pettit et al., 2010, 2013; Wieland & Wallenburg, 2013). While the concept of resilience is widely used in many disciplines (Heckmann et al., 2015), a so-called engineering resilience perspective has traditionally prevailed, describing the time required for a supply chain (system) to return to its original state, supposedly optimal state (Holling, 1996). This perspective has been challenged as scholars have recognized that systems should be able to transition to new, more desirable states (Christopher & Peck, 2004; Sheffi & Rice, 2005; Ponomarov & Holcomb, 2009; Novak et al., 2021; Sauer et al., 2022). Such an ecological resilience perspective, which has evolved into a social-ecological resilience perspective, defines supply chain resilience as “the capacity of a supply chain to persist, adapt, or transform in the face of change” (Wieland & Durach, 2021, p. 316). The ability of a social-ecological system to persist, adapt, and transform is particularly necessary as supply chains are embedded in a context of geopolitical and biodiversity crises (Wieland et al., 2023).

Resilience can be increased by organizational capabilities such as redundancy, flexibility and visibility (Christopher & Peck, 2004; Blackhurst et al., 2011; Pettit et al., 2010; 2013). The development of these capabilities in turn depends on the complexity of the supply chain, particularly the number of suppliers (Brandon-Jones et al., 2014), which either exacerbates the impact of a supply chain disruption or improves the recovery from it (Wiedmer et al., 2021). Other studies shed light on resilience capabilities after a disruption, including response efforts, recovery time, and costs (Christopher & Peck, 2004; Sheffi & Rice, 2005). These two different perspectives on resilience capabilities in the SCM literature are also referred to as pre- and post-disruption

resilience actions (Rose, 2004).

However, supply chains progressively feature ‘extreme conditions’ (Sodhi & Tang, 2021) because their environments feature ever more disorder, including economic crises, regulatory changes and political instability (van Hoek, 2020; Browning et al., 2023). In such a world of randomness, it becomes more likely that supply chains are likewise exposed to ‘black swan’ events, defined as unforeseeable and unique risks with a low probability of occurrence yet a high impact (Taleb, 2007; Akkermans & Van Wassenhove, 2018; Browning et al., 2023), and to ‘grey rhinos,’ which are characterized as high-probability, high-impact threats, yet mostly neglected by practitioners (Wucker, 2016). Because SCRM scholarship often neglects the interaction between risk sources and the context in which supply chains are embedded, it possibly underestimates both the probability and severity of supply chain disruptions (Fiksel et al., 2015; Montabon et al., 2016). Scholars have emphasized that SCRM needs alternative objectives beyond costs and profits for risks that rarely happen (Tang, 2006b; Simchi-Levi et al., 2014). In that vein, ‘antifragility’ (Taleb, 2012) is introduced to the research domain of SCM as an approach “to embrace the world of randomness.” Nikoogar et al. (2021, pp. 2-3) define an “antifragile supply chain (as) a living supply chain that can gain from disorder.” Unlike robustness and resilience, an antifragile supply chain would evolve and improve with unpredictable disorder (Nikoogar et al., 2021). Moreover, recent scholarship has called for integrative approaches to tackle systemic risks that transcend individual supply chains (Browning et al., 2023). Such perspectives favor a reconceptualization of resilience as capability to better prevent and manage systemwide disruptions instead of individual ones (Browning et al., 2023).

Future Research Agenda

Synthesizing from prior literature reviews, including Durach et al. (2015), Fan & Stevenson

(2018), and Pournader et al. (2020), to name a few, there are several avenues for future research in SCRM scholarship in empirically validating SCRM models and frameworks (Ho et al., 2015; Durach et al., 2015) and using of multi-method approaches (Pournader et al., 2020), especially beyond the first-tier level and from a ‘systems perspective’ (Wieland et al., 2023; Browning et al., 2023). We augment scholars’ calls for research in prior literature reviews by proposing four further avenues for future research that intent to clarify prior SCRM concepts and frameworks or to explore the interaction between supply chains and their contexts. Table 1 elaborates on each of them and highlights exemplary research questions.

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REPUTATIONAL SUPPLY CHAIN RISK

Conceptualization of Reputational Supply Chain Risk

The maturing research field of reputational supply chain risk has gained substantial traction, with numerous articles published in the last two decades (e.g., Jiang et al., 2009; Foerstl et al., 2010; Hofmann et al., 2014; Roehrich et al., 2014; Petersen & Lemke, 2015; Hajmohammad & Shevchenko, 2020; Dhingra & Krishnan, 2021; Kähkönen et al., 2023; Hajmohammad et al., 2024). While the corresponding literature likewise uses the term ‘supply chain sustainability risk’, ‘supplier sustainability risk’, or ‘sustainability-related supply chain risk’ (e.g., Foerstl et al., 2010; Hofmann et al., 2014; Hajmohammad & Vachon, 2016; Busse et al., 2016a; Busse et al., 2017a, b; Rafi-Ul-Shan et al., 2018; Kim et al., 2019; Ngo et al., 2024), these labels are imbued with different meanings across several studies. For instance, Christopher et al. (2011) and Giannakis & Papadopoulos (2016) refer to sustainability-related supply chain risks as negative *effects* that firms induce on the environment and society-at-large. In contrast, the prevailing understanding of supply chain sustainability risk is associated with the reputational damage to buying firms caused by

sustainability-related misconduct in their supply chains (e.g., Foerstl et al., 2010; Roehrich et al., 2014; Hajmohammad & Vachon, 2016; Canzaniello et al., 2017; Hajmohammad & Shevchenko, 2020), which *materializes* through delegitimizing stakeholder reactions (Hofmann et al., 2014). To avoid terminological confusion, we apply and propose for future research the notion of ‘reputational’ risk, a label that unambiguously points to the causal mechanism in play, to refer to practices in a focal firm’s supply chain that stakeholders may evaluate as unsustainable, leading to damage in a focal firm’s reputation (Petersen & Lemke, 2015).

Scholarship on reputational supply chain risk has highlighted the pivotal role of stakeholders in exerting pressure on focal firms to ensure supply chain sustainability (e.g., Foerstl et al., 2010; Reuter et al., 2010; Parmigiani et al., 2011; Hartmann & Moeller, 2014). From a stakeholder perspective, focal firms occupy a crucial position in enhancing sustainability standards in their supply chains, for example, by influencing supplier behavior (Parmigiani et al., 2011; Hofmann et al., 2014), selecting suppliers that prioritize sustainable practices (Klassen & Vereecke, 2012), or developing suppliers for sustainability (Busse et al., 2016b). When focal firms neglect or tolerate sustainability-related issues in their supply chains (e.g., in supplier selection), this behavior reflects (at least to some extent) the firm’s stance vis-à-vis these grievances (Hofmann et al., 2014). Consequently, stakeholders regard buying firms as ‘complicit’ (Mateska et al., 2023) for their suppliers’ behavior and delegitimize them for failing to address social, environmental, and ethical concerns in their supply chains (Hofmann et al., 2014).

Such delegitimization results in a so-called ‘chain liability effect’, a term initially coined by van Tulder et al. (2009), indicating that responsibility is not only attributed by the stakeholders to the directly culpable supplier, but also to the focal firm (Lemke & Petersen, 2013; Hartmann & Moeller, 2014; Hofmann et al., 2014; Hajmohammad & Vachon, 2016; Wilhelm et al., 2016a;

2016b; da Silva et al., 2020). In essence, unlike traditional supply chain risk, reputational supply chain risk does not necessarily disrupt the supply chain, but rather emerges as a result of stakeholders' assessments regarding the legitimacy of the focal firm, which depend on the following four-stage process: the stakeholder (i) becomes aware of a potentially negative sustainability-related condition or event in a firm's supply chain, ii) assesses the condition or event as undesirable, iii) attributes responsibility to the focal firm, and iv) deems harmful reactions to be appropriate (Hofmann et al., 2014). Importantly, focal firms are only considered legitimate if their supply chains comply with the sustainability requirements set forth by their own institutional context, typically the respective country, whereas compliance with the standards of the supplier's institutional context may not suffice (Busse et al., 2016a).

Prior research has emphasized that stakeholders particularly attribute responsibility to buying firms in cases of severe misconduct and situations when the firm has autonomy over decision-making or outcome (Parmigiani et al., 2011; Hartmann & Moeller, 2014; Hartmann et al., 2022). However, empirical findings are again inconsistent insofar as the severity of misconduct was not found as a driver of stock market losses for the buying firms in an analysis of nearly 1,700 events (Mateska et al., 2023).

The susceptibility of a focal firm to reputational supply chain risk is conditional upon factors such as the firm's size and visibility within the marketplace (Bowen, 2002; Parmigiani et al., 2011), its level of public attention (Grimm et al., 2016), the geographical location of its suppliers (Reuter et al., 2010), the salience of concerned stakeholders (Parmigiani et al., 2011), the specific industry context (Neef, 2004), the degree of importance attributed to the issue by consumers (Klassen & Vereecke, 2012), and the activist's hostility (Markman et al., 2016). In contrast, according to the findings of Hartmann and Moeller (2014), consumers do not consider

(primarily) the organizational distance from the supplier nor the firm size. Rather, responsibility attribution occurs when incidents are caused by suppliers as opposed to force majeure events, and when they are attributable to the firm rather than individual employees (Hartmann & Moeller, 2014).

The pertinent literature refers to various examples of detrimental stakeholder reactions, including adverse publicity, consumer boycotts, advocacy campaigns by activist groups, and strikes organized by labor unions (Busse et al., 2017b). In this context, focal firms are particularly concerned about the costs associated with the risk of adverse stakeholder reactions, including actual monetary costs and opportunity costs (Busse, 2016; Ngo et al., 2024), as well as litigation costs (Reuter et al., 2010). Specifying adverse stakeholder reactions, prior research found that sourcing from suppliers with unsustainable behavior poses a threat to focal firms as consumers tend to judge these controversial sourcing practices as unethical and may react by altering the consumption of the product (Bregman et al., 2015). Moreover, any group of stakeholders possesses “group-specific means of punishing the buying firm” (Busse et al., 2017b, p. 26).

Reputational loss leading to punishing stakeholder reactions may subsequently result in indirect effects such as lower revenues (Klassen & Vereecke, 2012) and ultimately decreased market value (Mateska et al., 2017; Kim et al., 2019; Cousins et al., 2020; Rogers et al., 2023). Measured across numerous events, it seems that the publication of news on sustainability transgressions in the sphere of the supplier leads to market value loss for the buying firm (Mateska et al., 2017; Kim et al., 2019; Kim & Wagner, 2021), with stock market reactions amplified by the influence potential of the media, the country-level sustainability risk of the supplier, and the industry-level sustainability risk of the buying firm (Mateska et al., 2023). However, the Rana Plaza factory collapse as one of the worst industrial disasters in history in terms of human lives

lost did not trigger a significant stock market reaction for the involved retailers, according to Jacobs & Singhal (2017).

Reputational Supply Chain Risk Sources

Reputational supply chain risk emerges from a wide range of social, ecological, economic, and ethical issues within a focal firm's supply chain (Christopher et al., 2011; Tummala & Schoenherr, 2011; Klassen & Vereecke, 2012; Hartmann & Moeller, 2014; Hofmann et al., 2014; Meixell & Luoma, 2015). These issues relate to one-time incidents as well as permanent states of undesirable sustainability-related conditions (Hofmann et al., 2014) in areas such as ecosystem impacts, pollution, waste, overuse of resources, greenhouse gas emissions, human rights, forced labor, working conditions, unethical behavior, corruption, non-compliance with laws, and toxic materials (Boiral et al., 2020; Kim & Wagner, 2021; Mateska et al., 2023). Following Ngo et al. (2024), a focal firm's performance is particularly affected by risks emanating from ecological and societal issues, in contradistinction to risks of an economic nature. However, issues around product/service quality, managerial performance or investment decisions can likewise impact reputation (Fombrun & Shanley, 1990; Petersen & Lemke, 2015). Conversely, Mateska et al. (2023) report event study results according to which social sustainability problems attract particularly much media attention, whereas governance risks (i.e., risks of an economic nature) lead to particularly strong stock market reactions for the buying firms.

Managing Reputational Supply Chain Risk

The most cited paper in sustainable supply chain management already emphasized in 2008 that supplier management focused on sustainability occurs to a large extent from the perspective of the involved risk (Seuring & Müller, 2008). To avoid adverse stakeholder reactions, focal firms must seek at least somewhat specific reputational risk management approaches (e.g., Foerstl et al., 2010;

Hajmohammad & Vachon, 2016; Canzaniello et al., 2017; Hajmohammad & Vachon, 2020; Kähkönen et al., 2023). The reason is that traditional supply chain risk management approaches, such as supply base diversification, tend to be ineffective or even counterproductive in light of the focal firm's risk of being delegitimized for non-compliance with sustainability requirements set by its institutional context (Hofmann et al., 2014; Petersen & Lemke, 2015; Dhingra & Krishnan, 2021).

Like traditional supply chain risk management, the discourse on reputational supply chain risk management is concerned with the identification, assessment, (response) management, and monitoring of risks to obtain and maintain legitimacy and improve operational performance (Foerstl et al., 2010; Lemke & Petersen, 2013; Petersen & Lemke, 2015). In terms of assessing reputational supply chain risk, scholars highlight that focal firms should also prioritize sustainability misconduct that is most likely to cause damage (Harland et al., 2003; Foerstl et al., 2010). Based on the four-stage process of how reputational supply chain risks materialize, Hofmann et al. (2014) however extend the aforementioned SCRM framework by emphasizing stakeholders' perspective in the risk management process. Subsequent research emphasized that firms should develop capabilities to identify changes in stakeholder requirements and adequately manages risks (e.g., Hallikas et al., 2020) to gain competitive advantages (Foerstl et al., 2010). Similarly, von Berlepsch et al. (2024) highlight the importance of managing stakeholder relationships due to stakeholders' impact on a firm's corporate reputation.

Scholars have identified various operational and strategic approaches for managing reputational supply chain risk, namely avoidance (i.e., eliminating practices that lead to risk exposure), control or risk mitigation (i.e., reducing the likelihood that an unsustainable event occurs or mitigating the severity of a potential reputational damage), transfer or risk sharing (i.e.,

pooling the risk through supplier cooperation or insurance), and retention or risk acceptance (i.e., accepting the risk of reputational damage, especially when the costs of countermeasures are higher than the costs of the potential reputational damage) (Lemke & Petersen, 2013; Giannakis & Papadopoulos, 2016; Hajmohammad & Vachon, 2016). For example, risk sharing contracts in the form of compensating the supplier's operational risk can be employed to influence the suppliers' strategies in achieving risk- and cost-reduction goals such that both reputational damage and traditional risk are mitigated (Dhingra & Krishnan, 2021).

The supply chain managers' choices surrounding these approaches are particularly influenced by their individual perceptions of the reputational supply chain risk and the dependency structure on suppliers (Meinlschmidt et al., 2018; Hajmohammad & Vachon, 2016; Hajmohammad et al., 2024). For example, when the perceived risk is particularly high, supply chain managers prefer avoidance and collaboration strategies (Hajmohammad et al., 2024). Further, in a multi-tier supply chain setting, mitigation practices such as direct collaboration with or monitoring of suppliers and indirect collaboration via stakeholders or monitoring via first-tier suppliers are considered appropriate (Meinlschmidt et al., 2018; Kähkönen et al., 2023). In this context, focal firms can either use their own resources (i.e., direct approach) or engage in relational and cooperative governance modes (i.e., indirect approach) (Meinlschmidt et al., 2018).

Together, these approaches apply diverse processes, mechanisms and tools, including (country-based) risk mapping, supplier monitoring, measuring supplier risks, supplier audits, exerting influence as first-tier suppliers' within multi-tier supply chains, supplier development, supplier selection, phase-out strategies, (multi-)stakeholder collaboration, product quality checks, ethical sourcing, supplier codes of conduct, scenario planning and simulation, automatic fault detection, and automatic recovery (Foerstl et al., 2010; Lemke & Petersen, 2013; Hofmann et al.,

2014; Petersen & Lemke, 2015; Giannakis & Papadopoulos, 2016; Wilhelm et al., 2016a; Wilhelm et al., 2016b; Meinlschmidt et al., 2018; Reinerth et al., 2018; Ngo et al., 2024). Scholars highlight transparency, sustainability, as well as security efforts to mitigate reputational supply chain risks (Gereffi et al., 2022; Phillips et al., 2022). A concept that strives to combine many of the aforementioned approaches is supply chain due diligence (OECD, 2016; Hofmann et al., 2018, Schleper et al., 2022). It comprises establishing effective corporate management systems; identifying and assessing risk in the supply chain; designing and implementing risk response strategies; carrying out independent third-party audits at identified points in the supply chain; and dedicated reporting (OECD, 2016).

In cases where the efforts surrounding these reputational risk management approaches fail, meaning that an unsustainable event occurs, recent research emphasizes the need for focal firms to adopt substantive responses, rather than ignoring the unsustainable event or simply clarifying the situation (Hartmann et al., 2022). In this line of reasoning, to recover consumer purchase intentions and buffer negative consumer reactions, the focal firm should employ proactive measures such as suspending contracts with the supplier that is responsible for the unsustainable event or implementing strategies for supplier monitoring or development (Hartmann et al., 2022). However, previous studies propose different response strategies. While Hartmann et al. (2022) find evidence that all three responses (i.e., suspension, monitoring, and development) are similarly effective in achieving recovery objectives, other scholars recommend prioritizing monitoring and development over suspension (e.g., Jiang, 2009; Bellamy et al., 2020; Villena & Dhanorkar, 2020), although more monitoring efforts do not necessarily lead to higher levels of supplier compliance (Boyd et al., 2007).

Future Research Agenda

The aforementioned notable scholarly advancements leave 14 promising avenues and opportunities for future research, in our view, that focus on managing reputational supply chain risk and acknowledge a supply chain’s environment. Table 2 provides overviews for all of them and depicts potential research questions.

----- Insert Table 2 Approximately Here -----

SOCIETAL SUPPLY CHAIN RISK

Conceptualization of Societal Supply Chain Risk

The nascent research stream of societal supply chain risk, defined as “hazards that emanate from or materialize within supply chains, which primarily affect actors in the supply chain context—and possibly even humanity in its entirety” (Duensing et al., 2023, p. 3), has received little scholarly attention to date. Previous studies from other disciplines have discussed discrete phenomena that can be subsumed under the notion of societal supply chain risk, such as threatened air quality caused by suppliers in the agricultural industry using artificial fertilizers and thereby overloading phosphorus cycles across supply chains (Whiteman et al., 2013), air contaminations caused by manufacturing plants that expose populations to the risk of health problems (Ratick & Osleeb, 2013), or people who lost their homes because producers had polluted local rivers (Fisher, 2021).

Within operations and SCM research, scholars have addressed societal supply chain risk by anecdotally examining operational and supply chain decisions and practices that have detrimental effects beyond supply chain actors. Examples comprise sourcing practices that fund militias and subsequently permeate the exploitation of children (Hofmann et al., 2018), opioid epidemics intensified by production and distribution procedures (Skilton & Bernardes, 2022), and offshore production that leads to low quality drugs and jeopardizes the healthcare of domestic

societies (Gray et al., 2011). Moreover, ‘carbon leakage’—in terms of supply chain restructuring and reallocation of carbon-intensive business processes to less regulated regions—renders regulations ineffective and potentially increases carbon emissions (Huang et al., 2021). Similarly, Mukherjee and Sinha (2018)’s study of medical device industries finds that adverse user reports can trigger managerial judgment bias in product recalls which may result in avoidable injuries, hospitalization, and deaths of patients. Finally, Duensing et al. (2023) highlight that biodiversity loss can be facilitated by an exploitation of legal supply chains to smuggle endangered species and protected wildlife.

While societal supply chain risk shifts the importance of context to the effect stage, unlike traditional or reputational supply chain risk, the above examples neither pose a risk of material flow disruptions (in contrast to e.g. Wicaksana et al.’s (2022) definition of “social risks”) nor of delegitimizing stakeholder reactions. Consider, for example, the illegal infiltration of global supply chains for the purpose of wildlife trafficking. Prior research indicates that these incidents do not threaten the swift and even material flow, and that the public does not hold supply chain members, such as logistics service providers, accountable for preventing such infiltration incidents (Duensing et al., 2023). Furthermore, the lack of risk exposure explains firms’ hesitance to implement countermeasures to prevent the exploitation of their supply chains for wildlife trafficking, as implementation would incur additional costs without related benefits at the firm level. However, given that illegal poaching and trade in endangered wildlife species impact biodiversity negatively (United Nations Office on Drugs and Crime, 2020), there is a need to create ‘carrot or stick’ solutions that encourage members of the supply chain to do more to prevent wildlife trafficking and protect biodiversity (Duensing et al., 2023).

Future Research Agenda

The literature stream on societal supply chain risk is still in its infancy, offering (at least) four distinct avenues for future research. We discuss each research opportunity within Table 3, together with illustrative research questions.

We imagine future discourses in the SCRM research domain to become significant in informing interested stakeholders outside of our field about issues that are not interesting to and remain unaddressed by practitioners, for example concerning the above mentioned ‘grey rhinos’ (Wucker, 2016). By doing so, SCRM scholarship can facilitate a process of moving away from myopic risk management approaches and of discussing obvious crises that tend to be ignored, or, metaphorically speaking, addressing the ‘elephant in the room.’

----- Insert Table 3 Approximately Here -----

ACADEMIC AND PRACTICAL IMPLICATIONS

This research shifts scholarly attention to the role of context in the risk manifestation process—as a potential risk source for traditional supply chain risk, during the risk materialization for reputational supply chain risk, and as the locus of the risk effect for societal supply chain risk. The socio-economic, institutional, and ecological context thus connects the three research streams as our review has shown. In view of the various complex and often cross-level interactions between supply chains and the multidimensional context in which they are embedded, and which nourishes them, detailed research agendas for each literature stream are made available for future research in SCRM (Tables 1-3). Thus, this study aims to shape the future trajectory of scholarly research on traditional, reputational, and societal supply chain risks and their respective management.

In practical terms, the study echoes sentiments from prior research (Hofmann et al., 2014; Duensing et al., 2023) that practicing supply chain managers should dedicate much more attention to the contexts in which their supply chains are embedded. The context of a supply chain can not

only give rise to traditional risks for a firm and its performance. Rather, the behavior of the firm itself also has an impact on the context and thus attracts the attention of interest groups such as consumers, NGOs and regulatory authorities. Certain SCM practices already pose reputational risks now, and others may do so in the future. Yet other practices may not only become illegitimate, but even illegal. Recent regulatory initiatives, such as the United States “Executive Order on America's Supply Chains” and the European Union’s CRMA (2024/1252) have highlighted the criticality of various sectors and supply chains for societies. With this in mind, sophisticated SCM in corporate practice certainly goes beyond evaluations of present-day legality and seeks to align itself proactively with ongoing and future societal needs.

LIMITATIONS

Upon critical reflection, the subjectivity of our methodology represents a limitation as it can lead to bias in both the selection and representation of relevant concepts, frameworks, and studies (Collins & Fauser, 2005; Dijkers, 2009; Byrne, 2016). In order to control such bias, we synthesized the relevant literature in a transparent manner by defining the scope and intent of this research in the methodology section (Pautasso, 2013; O’Connor & Sargeant, 2015) and by establishing various safeguarding procedures. For example, to enhance reliability, this research discussed contested findings within previous SCRM studies (Collins & Fauser, 2005; Grant & Booth, 2009) and sought to provide guidance without omitting deviating views and findings. Although we maintain that our topic profits from the broader scope and degrees of freedom of a narrative literature review (Collins & Fauser, 2005), authors who perceive the narrative literature review as such as a limitation can follow-up on this investigation with a structured review of the same topics.

CONCLUSION

SCRM is a prominent topical field within the realm of SCM scholarship, as indicated by the

numerous supply chain risk concepts that have been introduced and the valuable empirical results of prior studies in this domain. Our investigation contributes to the SCRM discourse, and specifically to a more holistic and comprehensive supply chain risk understanding, by synthesizing the literature pertaining to traditional, reputational, and societal supply chain risk, using a narrative review approach. Whereas traditional supply chain risk conceives of context as merely an operational source from which risks may emerge, the reputational and societal streams within SCRM shift the importance of context to the risk materialization and effect stages of risk manifestation. Our research built on these fundamental insights and offered an inventory of past milestones for each of these SCRM research streams. Accordingly, our article sought to provide guidance for future impactful scholarship, thereby elevating the critical role of context. The complex interaction between the material flow domain and the numerous dimensions as well as multiple levels of context should subsequently receive much more scholarly attention. To facilitate such research, we provided an in-depth research agenda, comprising 23 topical areas across the three streams of research with detailed suggestions for the study of 80 worthwhile research questions (Tables 1-3).

For instance, traditional supply chain risk research should consider the influence of factors and contexts on risk perception (Table 1 (2)). Apart from that, current real-world developments require a closer investigation around the topics of geopolitical contexts and their management, for example through decoupling, de-risking, friend-shoring and the creation of ad hoc and parallel supply chains, especially for critical goods (Table 1 (3)). Reputational supply chain risk scholarship should, for example, explore means of ex-ante prevention and management of these risks (Table 2 (1)) as well as dealing with these issues ex-post, for example through relationship repair (Table 2 (2)). One aspect that is becoming increasingly important in reputation management

is the spread of “fake news”, “deep fakes” etc. when artificial intelligence simplifies their creation and distribution and makes them more difficult to detect ((Table 2 (8)). Furthermore, we call for more research on “unacceptable contexts” in which firms and supply chains operate (Table 2 (11)) as well as a closer normative consideration of responsibility and its boundaries in our domain (Table 2 (12)). Lastly, as societal supply chain risk is still in its infancy, we stress the importance of empirical research on societal supply chain risk examples (Table 3 (1)) as well as their management (Table 3 (2)). There is still plenty of room for advancing knowledge on traditional, reputational, and societal supply chain risks and their management.

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TABLE 1
Future Research Agenda in Traditional SCRM Scholarship

Topical area	Elaboration	Example research questions
Traditional risk: (1) <i>Traditional supply chain risk management</i>	SCRM scholarship requires holistic approaches that include all four stages of the risk management process, cost-benefit analyses including a benchmark of different strategies (Fischl et al., 2014; Ho et al., 2015; Fan & Stevenson, 2018), adequate risk quantification measures (Aloini et al., 2012; Heckmann et al., 2015), and behavioral models to explore supply chain risk identification and assessment (Pournader et al., 2020). Scholars are also encouraged to deepen the understanding of supply chain resilience, specifically its robustness component, as there is a lack of research on the dark and bright sides of resilience (Pournader et al., 2020), the value of resilience and robustness (Colicchia & Strozzi, 2012), and the design of a robust supply chain (Tang & Musa, 2011).	<p>What are the costs and benefits of certain SCRM strategies, and why?</p> <p>Which measuring tools are promising to supply chain risk quantification?</p> <p>To what extent do behavioral models explain supply chain risk identification and assessment?</p> <p>What are the potential positive and negative impacts of supply chain resilience and supply chain robustness?</p>
Traditional risk: (2) <i>Risk perceptions</i>	Considering recent crises, including the COVID-19 pandemic and Russia's invasion of Ukraine, we encourage scholars to empirically examine supply chain managers' risk perception. Based on the understanding that supply chain managers' individual characteristics, such as the level of risk aversion or leadership style influence the decisions regarding the chosen risk management strategy (Hajmohammad & Vachon, 2016; Azadegan et al., 2021), risk perception clearly matters. Accordingly, we encourage future research to elaborate on behavioral economics (Tversky & Kahneman, 1992; Kahneman & Tversky, 2013) to empirically evaluate the adequacy of risk perceptions. As one extreme, such research could identify an overcautious behavior at the firm level and corresponding mimetic pressures in its competitive environment (DiMaggio & Powell, 1983). As the other extreme, such research could find that clearly visible threats tend to be ignored, as expressed with the recent metaphor of the	<p>To what extent do contextual circumstances such as crises shape supply chain managers' risk perceptions?</p> <p>How can objective measures of riskiness be developed, to compare against managerial risk perceptions?</p> <p>How well do managerial perceptions of risk and objective measures align?</p> <p>What are the potential downsides for a firm in cases of risk overcautiousness on the one</p>

	<p>‘grey rhino’ (Wucker, 2016). Other disciplines, such as environmental science and public health, have already recognized this avenue of research by investigating whether there is a change in the overall level of operational risk perception in the current post-COVID-19 era (Ewertowski & Butlewski, 2022).</p>	<p>hand, and ignorance of ‘grey rhinos,’ on the other hand?</p>
<p>Traditional risk: (3) <i>Decoupling, de-risking, “ad-hoc” supply chains</i></p>	<p>Crises like the COVID-19 pandemic and Russia’s invasion of Ukraine have also raised concerns among practitioners and scholars about whether modern supply chains are too intertwined with the global economy, such that the economic and political context in which supply chains operate impacts whole global trade flows, for example through “ripple effects” (e.g., Choe et al., 2020; Ivanov and Dolgui, 2020; 2021; Schleper et al., 2021; Fan et al., 2022). Importantly, while underlying political and economic forces in the context may still seem to be manageable from an individual firm-level perspective, these forces represent a major cluster or systemic risk for entire economies because of the interaction of multiple levels of analysis (Wieland, 2021; Browning et al., 2023). Future research should investigate to which extent firms can understand the risk-increasing interaction amongst multiple levels of analysis.</p> <p>The aforementioned crises set off a discourse questioning the design of global supply chains, especially for critical goods. Various studies consider the reshaping of global supply chains (Handfield et al., 2020; Roscoe et al., 2022), the development of “ad hoc” and parallel supply chains (Müller et al., 2023; Mouradlou et al., 2024), and de-coupling or de-risking global trade flows (Alabi, 2023; Bednarski et al., 2023; Bloomberg, 2023; Witt et al., 2023). Additionally, strategies such as friend-shoring, also known as ‘ally shoring’ (Kessler, 2022; Yellen, 2022), local sourcing and reshoring, (Ellram, 2013; Foerstl et al., 2016; van Hoek & Dobrzykowski, 2021; Handley, 2023), as well as near-shoring (Monaghan, 2023) came into focus and should be investigated more comprehensively.</p>	<p>Which firms and supply chains are most dependent on autocratic economies, and why?</p> <p>Which decoupling or derisking approaches are available to firms in a highly intertwined global economy? When should they implement which of these approaches for which sectors, and why?</p> <p>How can “ad hoc” supply chains be utilized in managing systemic risks and disruptions?</p> <p>To which extent are managers capable of understanding risk interaction and multiplication arising from commutated corporate behavior?</p> <p>How effective from the perspective of traditional supply chain performance metrics are supply chain designs and strategies based on friend-shoring, near-shoring etc., and for whom?</p>

<p>Traditional risk: (4) <i>Antifragile supply chains</i></p>	<p>Drawing particular attention to the environmental, political, institutional, and economic context in which material flow supply chains are embedded, we emphasize the need to develop an understanding of how to practically design antifragile supply chains (Nikookar et al., 2021). We argue that re-thinking the strategic design of supply chains is particularly important in line with recent and ever-changing contextual turbulence stemming from economic crises, regulatory changes, political instability, and biodiversity crises (Taleb, 2012; van Hoek, 2020; Sodhi & Tang, 2021; Wieland et al., 2023).</p>	<p>How can antifragile supply chains be designed? What can be learned from real-world implementation efforts of antifragile supply chains? How can antifragility be operationalized?</p>
<p>Traditional risk: (5) <i>Supply chain risk management framework</i></p>	<p>We emphasize the need to conceptualize a holistic SCRM framework that incorporates the entirety of hitherto distinct concepts surrounding the risk and disruption management processes and strategies, thereby also considering the recovery phase (Ho et al., 2015). The SCRM scholarship still lacks a consistent definition of the concept of supply chain exposure, which is possibly one reason why scholars often use vulnerability and exposure interchangeably. We recommend that the ambiguity surrounding the central concepts of vulnerability and exposure should be addressed, maybe even by a dedicated review just of the concepts and their utilization to date. Authors using either concept should offer precise definitions and ensure logical consistency within future studies. Our own ‘meta-review’ has shown that none of the previous literature reviews and conceptual frameworks synthesized the interdependencies between SCRM and disruption management-related processes (e.g., from risk identification over risk management to disruption recovery) and associated strategic, tactical, and operational approaches (e.g., resilience, insurance, and mitigation). This omission is surprising, especially because prior research has already highlighted the value of holistic management frameworks and system views (de Vries et al., 2021; Browning et al., 2023). Examples include business continuity management and its integration into supply chain activities, which improves the containment of operational damage (Azadegan et al., 2020). In the same vein, we encourage</p>	<p>How can a holistic framework integrate distinct SCRM and supply chain disruption management concepts? How should supply chain exposure be defined, and what is the difference between exposure and vulnerability? How can SCRM better understand cause and effect relationships from a systemic perspective?</p>

scholars to address these shortcomings and conceptualize a holistic SCRM framework.

TABLE 2
Future Research Agenda in Reputational SCRM Scholarship

Topical area	Elaboration	Example research questions
<p>Reputational risk: (1) <i>Reputational supply chain risk management</i></p>	<p>While the corresponding literature on reputational supply chain risk to date accurately depicts how focal firms potentially perceive and manage reputational risk, we argue that much more empirical research is needed to understand focal firms' behavior in relation to reputational supply chain risk. Although it seems conceivable that most sustainable SCM activities are implemented by focal firms to mitigate reputational supply chain risk, especially since external pressure from stakeholder groups is a key driver for firms to implement sustainable SCM (Seuring & Müller, 2008), the relation between reputational risk and SCM activities has not been thoroughly examined yet. Prior research already emphasized the need to shed light on how to manage and minimize reputational supply chain risk (Dhingra & Krishnan, 2021). With a few notable exceptions (e.g., Foerstl et al., 2010; Reinerth et al., 2018), the corresponding literature on reputational supply chain risk management is largely lacking empirical evidence. We thus call for more, especially empirical, research on how focal firms do manage reputational supply chain risk in practice. Such inquiries can set the ground for evaluating the effectiveness of operational and strategic reputational risk management strategies and tools. Research in this direction should also seek to shed light on whether firms that actively pursue sustainable SCM practices such as supplier development receive some level of protection against delegitimization.</p>	<p>How do focal firms manage reputational supply chain risks in practice?</p> <p>Under which circumstances are which reputational SCRM strategies most effective?</p> <p>To what degree do sustainable supply chain management processes and instruments protect against delegitimization, and why?</p>
<p>Reputational risk: (2) <i>Relationship repair</i></p>	<p>Although research on reputational supply chain risk has proposed several risk management strategies and tools, there is a lack of knowledge in the pertinent literature, with the notable exception of Hartmann et al. (2022), on how focal firms can rebuild their reputation and repair their relationships with their stakeholders after suffering adverse stakeholder reactions. For example, Benoit et al. (2018) find that rectifying strategies (e.g., through collaboration) are more affective in repairing trust than refuting strategies. For that reason, we call for more research that</p>	<p>What approaches are available for firms to rebuild their reputation?</p> <p>How can firms repair their relationships with certain stakeholder groups?</p>

	empirically examines relationship repair in the context of reputational supply chain risk.	
Reputational risk: (3) <i>Reputational risk management tools</i>	Concepts related to traditional supply chain risk management, in particular vulnerability, exposure, agility, robustness and resilience, have scarcely been adopted within or adapted to the reputational risk management literature. Parmigiani et al.'s (2011) study represents a notable exception. Their investigation introduces the concept of 'stakeholder exposure,' which is determined by a focal firm's ability to influence its supply chain partners and its accountability to its stakeholders; however, the concept has not been widely employed thereafter. In view of the widespread impact of the traditional SCRM concepts and tools, we conjecture that future research in the field of reputational supply chain risk should explore the extent to which focal firms subliminally or consciously employ such concepts to identify and manage reputational supply chain risk. Moreover, the effectiveness of extant software tools to facilitate such processes warrants investigation, and new tools could be designed—for example with the help of artificial intelligence.	<p>To what extent do firms employ concepts related to traditional supply chain risk management to identify and manage reputational risks?</p> <p>How effective are off-the-shelf software solutions for reputational risk management?</p> <p>In which way and to which extent can artificial intelligence facilitate the identification, assessment, management, and monitoring of reputational supply chain risk?</p>
Reputational risk: (4) <i>Managing institutional complexity</i>	In line with the aforementioned call for context-specific empirical research, the literature on reputational supply chain risk lacks knowledge concerning the strategies employed by focal firms to manage institutional complexity (Greenwood et al., 2011) arising from a plurality of institutional logics (Thornton et al., 2012), and contested (sustainability) values. On one end of the contestation spectrum, there exists, for example, a quasi-consensus on the significance of eliminating ozone-depleting greenhouse gases (United Nations, 1989), thereby rendering any firm misconduct that undermines this objective as a potential source of reputational risk. In the middle of the contestation spectrum, the cultural traditions surrounding bribery vary substantially across different regions—for example, most Western societies perceive bribery as illegitimate, while it is rather established elsewhere (Busse et al., 2016). At the other end of the contestation spectrum, certain values are fully contested across distinct institutional contexts. For example, Western societies mostly protect and	<p>For which issues do conflicts amongst institutional logics and stakeholder values occur, and why?</p> <p>To which extent are adverse stakeholder reactions triggered by contested sustainability values within disparate institutional logics?</p> <p>How do firms manage conflicting values in institutional complexity to mitigate the risk of reputational damage?</p>

advocate for societal diversity, equity and inclusion (European Commission, 2021a), while only one Asian country has legalized same-sex marriages, and the Indian government, along with many Islamic societies, remain heavily opposed to the LGBTQ+ community (Sangal, 2023).

Thus, we argue that empirical research is needed to understand the emergence of reputational (or even traditional) supply chain risk stemming from contested sustainability values within distinct institutional contexts (e.g., whether stakeholders accuse focal firms of engaging in sexual discrimination at subsidiary locations in the Global South). More broadly, we call for research on how firms engaged in global supply chains (and transnational corporations, by the way) effectively manage conflicting values and stakeholder ambiguity, that is, a situation where numerous stakeholders, often with disparate demands, goals and opinions, interpret the same situation differently (Hall & Vredenburg, 2003).

Reputational risk: (5)
Institutional distance

Scholarship on reputational supply chain risk has recognized the influence of institutional distance on supply chains and has examined why stakeholders withdraw legitimacy from focal firms in paradoxical situations, that is, when both the focal firm and the supplier comply with stakeholder requirements within their own legitimacy contexts, yet ‘legitimate’ behavior is understood differently in both contexts (Busse et al., 2016). However, reputational supply chain risks may also manifest when suppliers and focal firms operate within the same institutional contexts (Busse et al., 2016). For example, despite national legislation (e.g., the Modern Slavery Act 2015), modern slavery is a persistent issue in the United Kingdom, as evidenced by the exploitation of several workers on farms, recycling centers, and poultry factories, some of whom are employed by second-tier suppliers to major supermarkets, including the United Kingdom’s largest retailer, Tesco (The Guardian, 2019; The Times, 2019). Another example relates to a Finnish supermarket that faced negative publicity due to unsustainable working and living conditions of tomato producers in Italy (Oxfam, 2019). Against that background, we call

To which extent does institutional distance amongst the locations within a supply chain augment risk, relative to institutionally proximate contexts?

How can institutional complexity within a supply network be measured? What role does it play for the level of reputational risk that the involved firms face?

To what degree do reputational supply chain risks manifest in national or even regional supply chains within the same institutional context, and why?

	for empirical research to examine the manifestation of reputational supply chain risk in national or even regional supply chains.	
Reputational risk: (6) <i>Context-specific research on stakeholder reactions</i>	<p>Sustainability represents a broad umbrella concept (Hirsch & Levin, 1999) under which scholars subsume various issues ranging from labor rights violations (Klassen & Vereecke, 2012) to water contamination (Hartmann & Moeller, 2014). Adopting the argument that more context-specific research facilitates more accurate theoretical insights and predictions (Busse & Mollenkopf, 2017), we call for investigations on specific issues and juxtapositions of distinct issues in the field of reputational supply chain risk. Such research could begin either with the firm trying to avoid reputational problems, repairing its reputation and its stakeholder relationships post-transgression, or set out with the stakeholders noticing the issue (or not, since it is not on their radar) and evaluating its severity to make up their mind whether they should act. In particular, we encourage SCRM scholars to empirically examine whether different sustainability issues (e.g., environmental vs. social sustainability) trigger the same magnitude of adverse stakeholder reactions, building on Mateska et al.'s (2023) and Rogers et al.'s (2023) initial insights, or whether there are even differences in the manifestation mechanisms.</p> <p>As an example of issue-specific sustainable SCRM research, consider biodiversity loss, which is augmented through global trade (Quarshie et al., 2018). Biodiversity loss represents one of the most severe global risks (Duensing et al., 2023), yet most firms are not engaged in or committed to protecting biodiversity (Zoological Society of London 2022; World Economic Forum, 2023). Initial empirical SCRM research found that threats to biodiversity do not attract public attention to such an extent that consequently firms would face negative stakeholder reactions for their inability to protect biodiversity.</p>	<p>Are there any substantively important differences in the manifestation of reputational risks amongst different distinct sustainability issues? If so, why?</p> <p>How likely do social (ethical), ecological, and economic (governance) issues attract stakeholders' attention, and why?</p> <p>How harsh are adverse stakeholder reactions for different sustainability issues, and why?</p>
Reputational risk: (7) <i>Communication of symbolic</i>	In the context of institutional requirements for sustainability commitments such as new legislation (e.g., the European Directive on Corporate Sustainability Due Diligence 2022), we call for empirical research on the emergence of reputational supply chain risk arising specifically from a	How proactively do (buying) firms report sustainability concerns in their supply chains?

<p><i>sustainability practices</i></p>	<p>(focal) firm’s communication surrounding symbolic (e.g., Blome et al., 2017; Pizzetti et al., 2021) or factually incorrect sustainability practices. While most firms disclose sustainability-related efforts in their annual reports, Sodhi & Tang (2019) question the benefits of such information, as it mostly serves to inform stakeholders about compliance with reporting norms, rather than demonstrating a focal firm’s substantive behavior. For example, AIDA Cruises, an Italian cruise ship operator based in Germany, discloses in its annual report a reduction in CO2 emissions per passenger through the use of liquefied natural gas (LNG) and promotes ‘green cruising’. However, a documentary broadcasted on German public television recently accused the cruise ship operator of greenwashing as the total amount of CO2 emissions has increased in recent years (ZDF, 2023). While two of their ships are equipped with a dual-fuel technology to use LNG, AIDA Cruises uses cheaper marine gasoil, and the cruise ship operator keeps silent in its annual report about the damaging effects of LNG, such as methane, on the environment.</p>	<p>To which extent does proactive reporting of i) supply chain sustainability problems and ii) sustainable supply chain management practices protect firms from adverse stakeholder reactions, or does it trigger them?</p> <p>Do firms face adverse stakeholder reactions for purely symbolic sustainability practices?</p>
<p>Reputational risk: (8) <i>Fake news</i></p>	<p>Distinct from our aforementioned call for research centered around the communication of symbolic (or factually incorrect) sustainability practices, we also encourage scholars to examine the concept of ‘fake news’ in the sense of disinformation about supposed firm misconduct. While scholars have acknowledged fake news in the context of supply chain disruptions (e.g., Chatterjee et al., 2023; Petratos & Faccia, 2023), fake news may similarly represent a source of reputational supply chain risk. This seems imaginable given Mateska et al.’s (2023) theoretical conjecture that the sheer publication of news on supply chain sustainability transgressions already determines their negative stock price impact for the buying firm to such an effect that the actual severity of the incident does not matter. In that vein, research is needed to scrutinize the degree of authenticity inherent in past stakeholder allegations of firm misconduct. The fast fashion retailer Boohoo.com, for example, has commissioned an independent investigation on prior allegations in newspaper reports about unsustainable supplier practices (Levitt, 2020). The role of the media is certainly crucial for shaping stakeholders’ perceptions of firm misconduct</p>	<p>In prior publications on supply chain sustainability transgressions, were there any claims of firm misconduct that proved to be wrong? What could explain such fake news?</p> <p>How do firms recover from fake news related to their sustainability practices?</p> <p>Do stakeholders evaluate the truthfulness, completeness, or framing of i) buying firm’s supply chain sustainability communication and ii) reports on supposed transgressions? If so, how?</p>

within global supply chains (Yu et al., 2008). Media information is aggregated by data science providers such as the Swiss company RepRisk, granting them substantive influence on the perception of reputational supply chain risk by other stakeholders. Media with higher influence potential manage to provide news that are more impactful on the buying firm's stock price (Mateska et al., 2023).

Overall, we suggest examining the extent to which the attribution of accountability to the focal firm is appropriate, and to conceptualize strategies for practitioners on how to recover from fake news. This is particularly important if fake and supposed fake news become as relevant in the realm of global supply chains as they have become in public discourses.

Reputational risk: (9)
Stakeholders' decision-making process on reputational supply chain risks

While scholars in the domain of reputational supply chain risk have acknowledged the key role of stakeholders in the manifestation process, the literature still lacks an understanding of how individual stakeholders such as NGOs, the media, and shareholders assess potential misconduct and how they choose the firms to attribute responsibility for misconduct in the supply chain. For example, Pournader et al. (2020) raised the question of whether stakeholders perceive the misconduct of wage theft to be more severe than deforestation. According to Freeman (1984) and Clarkson (1995), the concerns expressed by secondary stakeholders, such as advocacy groups and NGOs, are often subjective and hence difficult to predict. For example, although several firms, including Microsoft, Nokia, and Sony, contract with the electronics manufacturer Foxconn, Apple perceived relatively more public attention for Foxconn's sustainability misconduct than the other firms (e.g., The Guardian, 2014; The Washington Post, 2019). Drawing on prior research insights that indicate the media's consideration of an incident's marketability (Barnett, 2014) and the subsequent impact of publications on firm value (Mateska et al., 2023; Rogers et al., 2023), we encourage scholars to conduct more research that focuses on the media as an intermediate stakeholder in the manifestation process.

How precisely do stakeholders assess and decide on potential firm misconduct? How do they choose amongst the multitude of transgression issues which to follow-up on?

Do different groups of stakeholders differ in their information processing and decision-making? Which roles do information multipliers such as the media play therein?

Why do certain firms attract comparably more stakeholder scrutiny than others, above and beyond the effects explained by their size, reputation, and overall visibility? How do stakeholders choose the actors to criticize?

	<p>With respect to the objects of stakeholder scrutiny, more research is called for to examine whether non-commercial organizations (e.g., humanitarian, government, military supply chains) also face adverse stakeholder reactions (Shaheen et al., 2021; Mateska et al., 2023). Elaborating on Duensing et al.'s (2023) observation that logistics service providers such as port operators and shipping companies do not suffer reputational risks from wildlife trafficking, we extend Mateska et al.'s (2023) call to also include the commercial support actors who are involved in supply chains without owning the products therein (Carter et al., 2015).</p>	<p>Which stakeholders engage in more collaborative, which in more punitive action to mitigate supply chain sustainability risks? How do stakeholders choose between the available options?</p>
<p>Reputational risk: (10) <i>Reputational risks in the downstream supply chain</i></p>	<p>We encourage scholars to examine reputational supply chain risk emerging not just from upstream supply chain echelons, but also from downstream stages such as a firm's direct customers. Much of the research surrounding reputational supply chain risk sources has focused on issues within the upstream supply chain of focal firms, with a particular emphasis on suppliers and sub-suppliers (e.g., Hofmann et al., 2014; Foerstl et al., 2018; Meinlschmidt et al., 2018). However, firms often lack visibility and knowledge in both the upstream (i.e., suppliers) and downstream (i.e., customers) directions of the supply chain (Carter et al., 2015, Busse et al., 2017b). While the literature on reputational supply chain risk has considered consumers' ethical judgments and reactions to sustainability issues (e.g., Bregman et al., 2015; Kim et al., 2019) for what is happening upstream in the supply chain, scholars have neglected to investigate a focal firm's co-responsibility for customers' downstream sustainability misconduct. For example, when the state of Nebraska planned the execution of a prisoner with an illegally purchased drug that was produced only by the pharmaceutical firm Fresenius Kabi, the firm took the state to court in an unsuccessful attempt to prevent the execution, arguing that "Nebraska's use of its drugs would damage its reputation and business relationships" (The Seattle Times, 2018). Similarly, the Western firm Haas Automation was just recently accused of continuing to supply machines to customers in Russia because this enables manufacturing for the Russian army (The Guardian, 2023).</p>	<p>To what extent should firms be held accountable for unsustainable practices of their customers on ethical grounds?</p> <p>Which products and customer behaviors attract reputation risk, and why?</p>

Reputational risk: (11) *Supply chain operations in unacceptable contexts*

Firms such as Raiffeisen Bank International, Metro, Unilever, and well-known luxury brands have recently suffered negative publicity for not considering an “ethical voluntary exit” (Dixon, 2023) yet maintaining business with Russia despite Russia’s invasion of Ukraine and its humanitarian costs (e.g., Krantz, 2023; Pratley, 2023; The Guardian, 2023). However, the existent reputational supply chain risk literature has thus far failed to investigate reputational risk arising from a connection with the context as such (e.g., the country in which focal firms operate), rather than individual firms and their business practices. We suggest investigating the extent to which supply chain operations in, for example, a context that is widely perceived to be unacceptable such as a certain pariah state, trigger stakeholders to withdraw legitimacy from focal firms. This suggestion is rooted in recent real-world developments. For example, a recently established “Moral Rating Agency” intends to measure firms’ involvement with Russia and subsequently aims to exert pressure on firms to terminate their business with Russia (Dixon, 2023). Similarly, because the Swedish brand ‘Absolut Vodka’ did not consider an ethical voluntary exit, widespread calls for a consumer boycott of this firm emerged to force them to stop exporting to Russia (The Guardian, 2023). Conversely, because of the Kremlin’s new rules on divestments, firms such as Philip Morris appeal to shareholders that a divestment will result in a loss of more than \$2 billion in assets (Rasche, 2023). Philip Morris refuses an ethical voluntary exit, attempting to persuade its shareholders of the financial downsides. What this does to its reputation remains to be seen.

To what extent do stakeholders withdraw legitimacy from firms because of their co-responsibility for undertaking operations in an unacceptable context?

Which features render a regional and/or institutional context as unacceptable as such?

Which firms are most likely to withdraw from regional and/or institutional context portrayed as illegitimate?

Reputational risk: (12) *Moral theory of co-responsibility*

We encourage scholars to analyze the extent of ‘complicity’ (Mateska et al., 2023) or co-responsibility for sustainability misconduct in supply chains. While most of the literature posits a focal firm’s (moral) accountability for misconduct in their supply chains, some studies question the idea of ‘boundaryless responsibility’ (Amaeshi et al., 2008) and emphasize the need to discuss the “limits of upstreaming (and downstreaming) responsibility” (Scherer & Palazzo, 2011, p. 919). For example, in 2015, four Pakistani surviving dependents sued the focal (buyer) firm KiK for its failure to implement fire safety measures in a

Which features of the firm, its supply chain, or its products generate co-responsibility for supply chain sustainability issues?

What are the limits of a firm’s co-responsibility for supply chain sustainability issues, and why?

	<p>textile factory operated by a supplier in Pakistan. Blocked fire exits led to more than 250 deaths in a fire at this factory. Although the lawsuit was dismissed by a district court in Germany in 2019 due to a statute of limitations, the human rights organization ECCHR argues that transnational firms are responsible for the working conditions in their suppliers' factories (ECCHR, 2023). However, it is important to acknowledge that firms often face information deficits concerning the sustainability-related conditions in their supply chains, which in themselves are already difficult to remedy (Busse et al., 2017a; Foerstl et al., 2018). Moreover, the extent of the "often taken-for-granted-assumption that firms should be accountable for the practices of their suppliers by espousing the moral [...] underpinnings of the concept of responsibility" (Amaeshi et al., 2008, p. 223) may be limited. For example, should a phone manufacturer be held accountable for accidents caused by drivers using their phones (Parmigiani et al., 2011)? It might be also valuable to generate empirical insights into a focal firm's accountability for non-sustainability-related problems. In essence, we call for research to develop an interdisciplinary theory of co-responsibility and to empirically contrast real-world cases of responsibility attribution.</p>	<p>To what extent should firms be held accountable for non-sustainability-related problems?</p>
<p>Reputational risk: (13) <i>Non-sustainability-related reputational risk</i></p>	<p>To date, most reputational SCRM research focuses on sustainability-related supply chain practices that lead to adverse stakeholder reactions and subsequent negative reputational effects for the focal firm. However, we encourage scholars to extend this discourse by examining non-sustainability-related examples discussed in the public domain that can be regarded as reputational in nature. For example, the U.S. car manufacturer Tesla is in the process of recalling over 50,000 vehicles due to an issue where the vehicle controller fails to detect low brake fluid (Reuters, 2023). This is an example where a company's reputation can be tarnished without the context being fully integrated into the risk manifestation process.</p>	<p>Which non-sustainability-related issues could trigger adverse stakeholder reactions, and why? To what extent does the magnitude of a firm's reputational damage vary between non-sustainability-related and sustainability-related issues, and why?</p>
<p>Reputational risk: (14) <i>Sustainable</i></p>	<p>Lastly, despite all the valuable lessons learned about improving supply chain sustainability over the past two decades, scholars have started questioning the effectiveness of reputational supply chain risk</p>	<p>How effective are reputational supply chain risk management</p>

supply chain design

management in rooting out unsustainable behavior (Pagell & Shevchenko, 2014; Gold & Schleper, 2017). One reason for the rather marginal success of reputational risk management practices may be a Western-centric and instrumental perspective on many of these topics (Gold & Schleper, 2017). For example, the issue of modern slavery has primarily been investigated from a Western, focal firm perspective (Fridell, 2022), which does not consider the costs to the actual victims and the environment (LeBaron & Lister, 2022). Unfortunately, recent research has shown that due diligence costs are currently borne by the upstream supply chain, that is, for example, in the context of modern slavery, by smelters and small-scale miners in the Democratic Republic of Congo (Schleper et al., 2022). Assuming that firms most commonly tend to address those incidents that are most likely to cause reputational risks (Foerstl et al., 2010), rather than going beyond that risk-perspective scope, we urge scholars to conduct a critical evaluation of the utility of reputational risk management measures, not only for the individual firm but also for the entire supply chain sustainability.

Further, we advocate for research that delves into the question of how to design sustainable supply chains strategically and proactively, particularly when social and environmental sustainability are integral design criteria. To the best of our knowledge, most of the research has focused on improving sustainability within a focal firm's supply chain by implementing practices that are "additive, corrective, and ultimately symbolic measures" (Busse et al., 2017a, p. 90), such as supplier development, supplier selection, and supplier codes of conduct. However, there is scarce research investigating supply chain design for sustainability (Bals & Tate, 2018). Such research would have to anticipate reputational supply chain risk and foreseeable supply chain unsustainability by choosing, for example, local sourcing over global sourcing. This shortcoming needs to be addressed to provide valuable insights into how firms can reach 'true sustainability' (Pagell & Shevchenko, 2014; Gold & Schleper, 2017).

approaches in rooting out unsustainable behavior?

How can a supply chain be strategically and proactively designed for sustainability?

TABLE 3
Future Research Agenda in Societal SCRM Scholarship

Topical area	Elaboration	Example research questions
Societal risk: (1) <i>Empirical research on societal supply chain risk examples</i>	<p>We posit that societal supply chain risk can originate from a variety of sources, such as second-round effects of supply chain disturbances, including supply chain disruptions due to natural disasters that destroy agricultural land and cause difficulty in restoring cropland (Goldbaum & Ur-Rehman, 2022), as well as supply chain accidents caused by suppliers that result in environmental pollution (BBC, 2010). Further, cluster risk, emerging at the macro level from the multitude of individual supply chain practices, may represent a potential source for societal supply chain risks. For example, if multiple firms source products from a particular country, either for economic reasons (e.g., low-cost country sourcing) or because there are no alternative suppliers, a halt in the production of, for example, antibiotics, antihypertensives, and antivirals, poses a threat to society-at-large (Choe et al., 2020). This is especially true for maintaining critical supply chains, which involve the continuous flow of products that are essential to the public, such as healthcare or pharmaceutical supply chains. Related examples in our extended typology refer to Ukrainian agricultural products (The Guardian, 2022), Chinese medical products (Choe et al., 2020), and, admittedly rather indirectly, (Russian) power supply (European Commission, 2021b).</p> <p>In line with previous research, supply chain infiltration, illustrated by the exploitation of supply chains for wildlife trafficking purposes, may facilitate biodiversity loss and thus poses a risk to the environment (Duensing et al., 2023). As an even more widespread source societal supply chain risks can originate from all the externalities that are caused by supply chain practices, for example, by an industrial pollution that causes health problems and forces people to relocate</p>	<p>How do specific societal supply chain risk phenomena emerge and materialize?</p> <p>What are recent instances of societal supply chain risks that have emerged from or manifested in supply chains in the past, and what can we learn from them?</p> <p>How can societal supply chain risks be systematically identified and detected early?</p> <p>Which examples of societal supply chain risk simultaneously incorporate a component of reputational supply chain risk?</p> <p>How do societal supply chain risk phenomena affect societies at large and the environment, and how are they perceived?</p>

(Brown, 1979; U.S. Environmental Protection Agency, 1979; Fisher, 2021).

Lastly, we argue that geopolitical dependencies can cause societal supply chain risk. For example, given that many European production sites relied on (mainly Russian) natural gas and oil imports, Russia was threatening the EU with reduced supply in retaliation for the massive sanctions imposed on it for its invasion of Ukraine. The threat of disruption to external power supplies not only posed serious threats to production, but also put European policymakers in the awkward position of having to choose between their outrage at the Russian invasion and their need for vital goods from Russia (Eddy, 2022).

Despite the need to empirically examine the above examples of societal supply chain risk, we encourage scholars to identify other phenomena where supply chain operations contribute to or facilitate negative impacts on the societal, environmental, political, institutional, and economic context in which supply chains are embedded (Pagell & Shevchenko, 2014; Busse et al., 2016; Montabon et al., 2016). We argue that knowledge of numerous societal supply chain risk types helps practitioners identify them and to offer subsequent guidance to develop effective means to mitigate them.

We recognize that the above list of potential sources of societal risk is, first, certainly interdependent and overlapping and, second, certainly incomplete. However, these caveats only highlight the importance of the general point we are trying to make, which is that more (empirical) research in the aforementioned areas should be done from an SCRM perspective to help understand societal risks emerging from or manifesting within the supply chain.

Societal risk: (2)
*Societal supply
chain risk
management*

Prior research has already emphasized the urgent need for scholars to examine how supply chains can be managed for sustainability “as the window for making meaningful change before irreparable harm is closing” (Gualandris et al., 2023, p. 3). This call can be understood as a petition to engage not only in descriptive and explanatory scholarship

Who can manage societal supply chain risk phenomena how, in light of the current lack of accountability and clear

of extant unsustainability, but also as a call for acting by designing novel solutions in terms of ex-ante prevention and ex-post mitigation measures. We posit four potential sources of supply chain societal risks (i.e., disturbances, supply chain infiltration, externalities, and geopolitical dependencies) and suggest that research generates recommendations on how to get firms to engage in societal supply chain risk mitigation.

There is a growing tendency to hold firms accountable for their supply chain practices such that their ‘social license to operate’ (Esty & Porter, 1998, p. 42) is compromised when supply chain operations cause harm to the environment. To mitigate potential negative repercussions for firms and share the risk of societal and environmental damage, we suggest the adoption of traditional SCRM strategies and concepts from financial economics. Specifically, we argue that firms can effectively manage societal supply chain risk in the form of supply chain *disturbances* that threaten the environment or society through financial risk instruments such as insurance (e.g., Staccione et al., 2019)—for example, when inadequate lab tests at a supplier subsequently cause environmental damage (BBC, 2010; Vaccaro & Machado, 2011). In that vein, research is needed that itemizes potentially insurable issues to help practitioners manage the practices potentially contributing to societal supply chain risk. The pricing for such insurance also appears as a challenging future research topic.

With respect to *supply chain infiltration* phenomena, scholars have investigated examples of undesirable activities in global supply chains surrounding modern slavery (Gold et al., 2015), conflict minerals (Hofmann et al., 2018), and counterfeiting (Ghamat et al., 2021). These phenomena have in common that an “unauthorized actor succeeds in inserting (illegal) products into a legitimate supply chain” (D’Amato & Papadimitriou, 2013, p. 988). For counterfeit products, the exploitation of legitimate supply chains does not only expose consumers to the risk of health and safety issues (U.S. Immigration and Customs Enforcement, 2022). It may simultaneously jeopardize the

responsibilities in corporate practice?

What are novel solutions for ex-ante preventing societal supply chain risks and what are ex-post mitigation measures?

How can firms be incentivized to engage in mitigating societal supply chain risk?

What kind of societal supply chain risk phenomena can be managed through financial risk instruments such as insurance? And how can such an insurance be priced?

Who can manage the risks associated with supply chain infiltration incidents how? Are there differences amongst distinct infiltration incidents? If so, how do they influence the management of these risks?

To what extent can supply chain infiltration incidents be managed by rewarding firms for voluntary action or increasing their (reputational) costs for inaction?

Which externalities have caused negative stakeholder reactions in the past? What inferences can be drawn from such examples for a

reputation of the original equipment manufacturers, as the counterfeiting of fake products often occurs in industries with high brand awareness, such as the fashion industry (Grossman & Shapiro, 1988; D’Amato et al., 2019). While supply chain infiltration has previously been acknowledged by scholars (D’Amato & Papadimitriou, 2013; D’Amato et al., 2019), including most recently in the sustainable SCM discourse (Duensing et al., 2023), research on how to manage supply chain infiltration incidents (e.g., rewarding firms for their commitment to countermeasures or increasing costs through the implementation of new laws and regulations) is still lacking. This omission is surprising given that illegitimate trade routes are exploited for many types of illegality such as fraud, human trafficking, and smuggling (Pullman et al., 2024). Further, we support the call to investigate the similarities and differences amongst different types of supply chain infiltrations in global supply chains to inform stakeholders such as policymakers and practitioners about appropriate mitigating strategies (Pullman et al., 2024).

Today’s supply chains are increasingly associated with *externalities*, which are recognized by economists as “economic, social and/or environmental impacts arising from the activities of an entity that are borne by others, at least in the short term” (Unerman et al., 2018, p. 497). Scholars have raised awareness for supply chain practices that cause unintended consequences (Matos et al., 2020), and have, for example, examined mechanisms to motivate firms to produce sustainable products (Ding et al., 2015), outlined the relevance of shared responsibility for product recovery to improve environmental and economic performance (Jacobs & Subramanian, 2011), and assessed the impact of reduced externalities on economic performance (Huiping et al., 2016). However, firms rarely report on social and/or environmental consequences, primarily because there are no immediate financial effects (Unerman et al., 2018).

Even if the negative effects may not directly harm individual firms and their supply networks, we argue that SCRM research must take

firm’s accountability for unintended consequences?

What measures can ensure a firm’s accountability for unintended consequences?

How can societal problems such as geopolitical dependencies arising from concurrent individual level supply chain decisions can be overcome?

What are the long-term consequences of de-risking and decoupling strategies, and why?

How can firms be sensitized for geopolitical dependencies arising from commutated collective behavior? How can fallback options to protect Western economies be developed within a liberal economic order?

To which extent does the severity of a societal supply chain risk translate into severity of a derivative reputational supply chain risk? How does it influence the perception of the underlying risky issue?

externalities into account. The main reason is their societal impact, whose accumulation over both supply chains and time we can no longer ignore. Moreover, there is a second reason even from a short- to medium-term managerial perspective, namely that externalities can trigger a reputational supply chain risk component, in addition to the societal one. Once stakeholders become aware of detrimental environmental or social consequences and begin to hold a firm accountable, they may decide to boycott related products or engage in negative word-of-mouth (Hofmann et al., 2014; 2018; Amatulli et al., 2020; Hartmann et al., 2022). According to economics, not only law and regulations but also (external) stakeholder actions facilitate an internalization of externalities (Natural Capital Protocol, 2016; Unerman et al., 2018; Staccione et al., 2019). Given societies' increased awareness of externalities and governments' efforts to facilitate sustainable SCM with regulations (e.g., Dodd-Frank Act, 2010; United Kingdom Modern Slavery Act, 2015; European Directive on Corporate Sustainability Due Diligence, 2022), we encourage SCRM scholars to design measures that ensure a firm's accountability for unintended consequences (Matos et al., 2020) of its supply chain operations to society.

With respect to *geopolitical dependencies*, we challenge the myopic risk management perspective of firms that focus primarily on their short-term economic performance irrespective of their contributions to geopolitical risk, arguing and believing that their firm's individual dependence on countries like China is manageable. However, mimetic pressures for isomorphism not only result in commutated collective behavior of firms, but also imply that this behavior is taken for granted (DiMaggio & Powell, 1983), letting the firms and their lobbyists defend it in public. The absence of alternative suppliers leads to collective dependency with potentially severe societal repercussions if these supply chains are disrupted (Bednarski et al., 2023). For example, if a Chinese invasion of Taiwan were to occur, foreseeable Western sanctions on China would disrupt many global supply chains sourcing

from that region (e.g., the textile, semiconductor, and medical sectors), with far-reaching consequences for the global economy and society (Telling et al., 2023).

Applying recommended risk management approaches such as ‘decoupling’ our economies, that is, not doing business with certain countries, or ‘de-risking’ by diversifying the supply base (e.g., Bloomberg, 2023), is costly, especially in strategic industries such as semiconductors and batteries. Moreover, these strategies may simultaneously limit opportunities (e.g., foreign investments), and possibly also result in opposite effects (e.g., product shortages via an unsustainable focus on domestic production) (Alabi, 2023; Bloomberg, 2023). For example, while firms such as Samsung strive to reduce their dependency on China by choosing a ‘China plus one’ strategy (i.e., they establish at least one additional, non-Chinese manufacturing base, for example in Vietnam), such de-risking strategies may fail as the components and raw materials for the manufacturing process of phones still come from China and thus leave Vietnamese suppliers still dependent on China (Crabtree, 2023). Hence, we emphasize the need to examine geopolitical dependencies from the lens of societal supply chain risk and encourage SCRM scholars to investigate how societal (i.e., macro-level) problems such as geopolitical dependencies arising from concurrent individual (i.e., micro) level supply chain decisions can be overcome. Future SCRM scholarship might be able to inform policy at the level of product-specific supply chain networks whether and to which extent, for example, sourcing from Vietnam does truly de-risk the dependency on China.

Societal risk: (3)
Adoption and adaptation of traditional SCRM approaches

Considering the lessons learned through traditional SCRM scholarship, we call for research investigating the adoption and adaptation of traditional supply chain risk management concepts and approaches to societal supply chain risk phenomena. For example, is dual or multiple sourcing even conceivable for conflict minerals, agricultural products, or solar panels? Similarly, SCRM scholars should explore whether traditional supply chain concepts such as resilience are applicable

Are traditional SCRM concepts (e.g, the notion of resilience) applicable to societal supply chain risk phenomena? If so, how?

	<p>within the realm of societal supply chain risk. If so, subsequent investigations should investigate how to design supply chains that are resilient to environmental and social harm. In a similar vein, there is a scholarly opportunity to assess the extent to which different supply chain designs vary in their vulnerability to societal supply chain risk.</p>	<p>To what extent do different supply chain designs vary in their vulnerability to societal supply chain risks?</p>
<p>Societal risk: (4) <i>Interdisciplinary knowledge for risk management tools and strategies</i></p>	<p>Lastly, we encourage SCRM scholarship to develop unique societal supply chain risk management tools and strategies. In this context, SCRM research can draw on interdisciplinary knowledge, and, vice versa, inform other, non-SCM-related disciplines. For example, we anticipate interesting interfaces with criminology (e.g., understanding criminal behavior and thus mitigating the risk of infiltration incidents), finance (e.g., financially insuring supply chain disturbances and thus sharing the risk of supply shortages), political science (e.g., concerning the effectiveness of de-risking geopolitical dependencies), psychology (e.g. studying inertia and myopia in relation to risk prioritization), and economics (e.g., internalizing externalities and thus avoiding the risk of lawsuits or reputational damage).</p>	<p>Which insights from other disciplines (e.g., criminology, finance, political science, psychology, and economics) can inform SCRM in its pursuit to develop effective tools for managing societal supply chain risks?</p> <p>Which insights does SCRM have to offer to other disciplines that are also concerned with societal supply chain risks?</p> <p>Ultimately, which tools are effective in managing societal supply chain risks, and why?</p>

FIGURE 1
Research Process

