

The responsibility of corporate sustainability: the case of digitalising sustainability information in a food supply network

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Abstract

Purpose – This study explores the use of digital tools to support the sharing of sustainability information in the transition towards sustainable supply chain management in food supply chains.

Design/methodology/approach – The qualitative study reports on a Swedish food supply network, consisting of interviews with retailers/restaurants, wholesalers, and farmers/processors. By applying the analytical lens of responsabilisation, the abductive study reveals the complexities and barriers in transitioning to a sustainable food industry with the help of digital tools.

Findings – The findings demonstrate that perceived responsibility for corporate sustainability was limited to the national legislative framework. This limitation is evidence of an evaded regime of responsabilisation across supply chain actors. Additionally, the use of digital tools to support sustainability information sharing was largely absent in strategic orientations. This selective or withheld sustainability information translated into a gatekeeping mechanism that potentially hinders collective efforts to achieve sustainability.

Practical implications – The findings indicate that Swedish food actors are currently in a waiting position regarding the use of digital tools to promote sustainability information sharing. More specifically, industry actors perceive the need for an updated regulatory sustainability framework that supports a faster, digitally supported transition towards a sustainable food industry. Policymakers should be more proactive to incentivise industry actors to develop and adopt digital tools promoting corporate sustainability.

Originality/value – Responding to the call for more research into the empirical reality of supply chain actors and their approaches towards digitalisation and sustainability, this study bridges the gap between conceptual studies and practice. Furthermore, this study refines the theory of responsabilisation by shedding light on the

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The study was conducted through a collaboration with Urban Deli and Nagoon.

Funding statement: This research was funded by the Swedish research council for sustainable development Formas [Award number: 2019–02274]

Ethical statement: The study received an ethics screening approval by the ethical review committee at Stockholm Environment Institute in April 2021.

Declaration of interest statement: The authors declare no conflict of interest.

Corrigendum: It has come to the attention of the publisher that the article Tina Sendlhofer, Fedra Vanhuysse; The responsibility of corporate sustainability: the case of digitalising sustainability information in a food supply network. *British Food Journal* 12 December 2025; 127 (13): 150–170. <https://doi.org/10.1108/BFJ-02-2024-0173> did not include Ebba Engström as an author. Our guidelines make it clear that anyone who made a significant contribution to the article must be included as an author. Ebba Engström has been added as an author of this article in both the published version and metadata.



underlying mechanisms of sharing sustainability information within a food supply network. It suggests that there exists an evaded regime of responsabilisation whereby governmental agencies are assigned the greatest responsibility to drive corporate sustainability, and, in the absence of such regulatory requirements, the sharing of sustainability information is limited.

Keywords Corporate sustainability, Food supply chain, Responsibilisation, Retailing, Sustainability information

Paper type Research paper

1. Introduction

The food industry accounts for 35% of global greenhouse gas emissions (Crippa *et al.*, 2021), necessitating a systemic shift towards sustainability (Willett *et al.*, 2019). While the literature has largely focused on sustainable food production and consumption, less attention has been given to food supply chains (FSCs) (Herrero *et al.*, 2020; Searchinger *et al.*, 2019; Trotter *et al.*, 2023). This is the case even though sustainable supply chain management (SSCM) has been identified as a key enabler for achieving systemic change in the food industry (Bursova *et al.*, 2018; Kendall and Spang, 2020).

Consumer-facing companies, such as European food retailers and restaurants (Kittipanya-ngam and Tan, 2020), face growing pressure to integrate environmental and social sustainability into their operations due to a rising consumer demand for sustainable products (Ehgartner, 2018). To address such demand, these companies are increasingly managing sustainability issues that arise beyond their immediate operations (Koberg and Longoni, 2019; Schrempf-Stirling *et al.*, 2016). Calls have gone out for research to be conducted to enhance understanding of supply chain relationships (Bastl *et al.*, 2012; Giunipero *et al.*, 2008; Kembro *et al.*, 2014) and multi-tier supply chain networks, whose complexities go well beyond buyer-supplier relationship dyads (Allenbacher and Berg, 2023; Jabbour *et al.*, 2019).

Managing social and environmental sustainability across the supply chain is a promising avenue to address the sustainability challenges of the food industry. In this article, we refer to this by using the term corporate sustainability (see Madanaguli *et al.*, 2022 for an overview), an approach that has been defined as “a character of perception of responsibility” to achieve sustainability (Basu and Palazzo, 2008, p. 130; see also Weder, 2012). Corporate sustainability is understood to be the result of the perceptions held both by the internal organisation and its external stakeholders (e.g. consumers, supply chain actors, public authorities) about related responsibilities. Companies are increasingly taking responsibility for corporate sustainability by assuming moral leadership (Levy and Scully, 2007) and performing tasks that were previously considered to be external to their mission (Shamir, 2008; Vogel, 2005). As a result, some companies have started to reorganise responsibility for corporate sustainability across supply chains. Such efforts align with the concept of *regime of responsabilisation* “[...] in which successive tiers of a product’s supply chain – from a dairy farmer to a bottle manufacturer – independently measure, report, and attempt to reduce their portion of the product’s carbon footprint” (Ormond, 2015, p. 427). Further, responsabilisation functions as an indicator for the industry’s moral and ethical standing (Early, 2002) because it captures actors’ awareness of their responsibilities, the responsibilities of others (Li and Zheng, 2012; Zhu, 2009), and an individual’s attempts in resolving sustainability issues (Oels, 2005; Soneryd and Ugglå, 2015).

The potential of digitalisation to enable SSCM transitions has garnered scholarly attention (Kittipanya-ngam and Tan, 2020; Nilsson Lewis *et al.*, 2023), reflecting a trend towards digitalised operations (Jackson *et al.*, 2021; Kraus *et al.*, 2019; Pinzaru *et al.*, 2019). Digitalisation can support sustainable transitions (Bouwman *et al.*, 2018; Queiroz *et al.*, 2019) by facilitating the generation of more transparent and complete sustainability-related information (Topp-Becker and Ellis, 2017) that is crucial for SSCM (Gharehgozli *et al.*, 2017). However, to achieve these aims, digital technologies must be fully utilised to transform traditional business models into digitalised, sustainable ones (Ceipek *et al.*, 2021; Correani *et al.*, 2020). Despite the expectations for digitalisation to usher in changes to help advance a

transition towards sustainability (Herrero *et al.*, 2020), few empirical studies have explored its potential to support sustainability in FSCs (Buyukozkan and Gocer, 2018).

This article therefore examines how digital tools support the sharing of information on sustainability in the transition towards achieving sustainability in supply chain management in food supply chains. It addresses the research questions: (1) How do (food) supply chain actors perceive their own and others' responsibility for corporate sustainability? (2) How are digital tools used to share sustainability information across the (food) supply chain? Drawing on the theory of responsabilisation (Shamir, 2008) and the literature on digitalisation in FSCs, we aim to shed light on the complexities faced when transitioning towards a sustainable food industry with the support of digital tools. We studied these issues in a food supply network catering to a Swedish retailer and restaurant (Urban Deli) leading in sustainability. We chose Sweden as a suitable empirical context due to the high demand for sustainability-related information from Swedish consumers (Diagourtas *et al.*, 2022).

To answer our research questions, we conducted semi-structured interviews (Wilkinson and Birmingham, 2003) with supply chain actors. Our abductive approach, based on a case study (Miles and Huberman, 1994), the qualitative methodology allowed us to explore the use of digital tools in transitioning towards a sustainable food industry.

Our findings indicate that the responsibility for corporate sustainability was perceived by actors to be limited, the purview of national legislative measures. This view gives rise to an "evaded regime of responsabilisation" – a term we use to define a situation in which supply chain actors assign the greatest responsibility for driving a corporate sustainable transition to governmental regulators. In addition, the use of digital tools to support sustainability information sharing was largely absent in strategic orientations. The practice of using carefully selected information and even withholding information on sustainability translated into a gatekeeping system that can hinder opportunities to achieve sustainability collectively.

This study contributes to the academic literature by enhancing understanding of how food supply actors perceive their responsibilities for corporate sustainability. As such, it addresses the call for more empirical research into supply chain actors' approaches towards digitalisation and sustainability (e.g. Kittipanya-ngam and Tan, 2020). The study thereby also helps fill the gap between conceptual studies and practice (Buyukozkan and Gocer, 2018). Furthermore, the study adds to theory by refining responsabilisation (Ormond, 2015; Shamir, 2008) and identifying an evaded regime of responsabilisation. The study also highlights the limited ways in which sustainability information is shared in a food supply network.

The remainder of this article is organised as follows: The next section discusses key insights from the corporate sustainability and responsabilisation literature and the role of digitalisation in supporting sustainability information sharing. The third section outlines the methodology, the fourth presents the case study findings, followed by a discussion and the concluding section highlights contributions, implications, limitations, and avenues for future research.

2. Literature review

2.1 *Responsibilising supply chain actors for corporate sustainability*

Consumer-facing organisations, such as retailers and restaurants, frequently assume corporate responsibility for sustainability to "win the hearts, minds, and wallets of consumers and society more broadly" (Ormond, 2015, p. 432). Corporate sustainability is a voluntary activity that integrates three principles (Bansal, 2005): environmental integrity, social equity, and economic prosperity. Corporate sustainability overlaps with related concepts, such as corporate social responsibility (CSR) (see Madanaguli *et al.*, 2022 for a detailed overview). The management of corporate sustainability beyond organisational boundaries has been discussed in the literature on SSCM (Chen and Kitsis, 2017; Khan *et al.*, 2021; Seuring and Gold, 2013). This literature shows that external pressures have the highest impact in driving corporate sustainability practices, along with other factors such as ethical motives, awareness, and integrated management systems (Wilhelm and Villena, 2021). Interestingly, studies in the

FSC context have demonstrated that corporate sustainability at the organisational level is often perceived as a responsibility that extends beyond legal requirements; by contrast corporate sustainability in the context of SSCM more generally addresses minimal legislative compliance (Lindgreen *et al.*, 2009; Lindgreen and Hingley, 2009).

At a system-level perspective, corporate sustainability calls for a conceptualisation that specifies “individual organizations cannot become sustainable: Individual organizations simply contribute to the large system in which sustainability may or may not be achieved” (Jennings and Zandbergen, 1995, p. 1023). This perspective resonates with findings of the SSCM literature indicating that sustainability along the entire supply chain can only be achieved through collaboration and direct involvement of all supply chain actors (Allenbacher and Berg, 2023). In our paper, we view corporate sustainability as “a character of perception of responsibility” (Basu and Palazzo, 2008, p. 130; see also Weder, 2012). Corporate sustainability arises from both the perceived responsibility of those within the internal organisation and perceived responsibility that external stakeholders ascribe to the corporation.

This system perspective echoes the view that commercial organisations are repositioning themselves in the sustainability discourse, moving from “being part of the problem” to “being part of the solution” (Prudham, 2009; Visser and Kymal, 2015). For example, one study shows that global retailers are increasingly creating the necessary frameworks (e.g. certification schemes) and infrastructure (e.g. digital tools) to bring other actors into their endeavour to deliver their corporate sustainability goals (Ormond, 2015). By so doing, these companies have redefined what they are themselves responsible for and framed what kind of responsibilities should be owned by other actors (*ibid.*). This reorganisation of responsibility originates from a consumption-based perspective on global goods that allocates responsibility to the owner of a product along the product life cycle (Lemborg and Sendlhofer, 2017; Ormond, 2015; Soneryd and Uggla, 2015).

Often, a reorganisation of responsibility is initiated by powerful actors, such as retailers, who have an economic leverage over their suppliers. The relative power allows retailers to potentially harvest economic surpluses from the reorganisation of responsibility because the costs will now need to be carried by the responsabilised actor. This process of reorganisation can be understood as a process of individualisation, which allows retailers to manage their responsibility for corporate sustainability from afar. However, such individualising of responsibility also brings risks.

First, potential economic benefits and costs can occur at distant points along the supply chain, instead of at their own organisation. Second, organisations have limited control over the sustainability work carried out by other actors because supply chain information is generally limited. Third, tracing of raw materials remains challenging for most products across industries (Ormond, 2015). There is also a risk that the responsabilised actors may cheat. That is, while actors are aware of their imposed responsibility for corporate sustainability, they may fail to live up to this ideal (Connolly and Prothero, 2008; Skill and Gyberg, 2010). Indeed, they may reorganise the responsabilisation process towards relying on the government to take the role of prescribing specific behaviour (Bickerstaff *et al.*, 2008).

Responsibility for corporate sustainability can be directed to the sites where the product is physically located during its life cycle, ranging from sourcing, manufacturing, transportation to consumption. When responsibilities shift in this way, companies can benefit by transferring the associated risks of falling short on their corporate sustainability goals to entities outside of their organisation, and by ensuring that the “greatest possible amount of control is left in the hands of those closest to the problems” (Lobel, 2004, p. 362).

While some retailers may choose an approach inspired by power by suppressing other actors economically (Soneryd and Uggla, 2015), some may take a collaborative approach by addressing responsibility for corporate sustainability more democratically, giving voice to the ones who are responsabilised (Barrientos, 2013; Hughes, 2001). Both approaches involve replacing governmental authority with voluntary measures (i.e. guidelines, principles, codes of conduct or standards) (Shamir, 2008). One main advantage of such instruments is that they

allow actors flexibility and dynamic adaptation options chosen according to their own needs (Shamir, 2008). Ways of governing responsibility can depend on various factors. These can include “visibility (what is revealed and what is concealed), technologies and practices (organizing principles and tools of governance), forms of knowledge that inform and arise from the practices used, and identities presupposed by the practices and technologies chosen” (Oels, 2005, p. 192).

In the supply chain context, Ormond (2015) has conceptualised the above mechanism as *regime of responsabilisation*: “[...] in which successive tiers of a product’s supply chain – from a dairy farmer to a bottle manufacturer – independently measure, report, and attempt to reduce their portion of the product’s carbon footprint” (p. 427). In other words, responsabilisation is a mechanism in which each actor along the product life cycle is assigned to resolve sustainability individually (Oels, 2005; Soneryd and Uggla, 2015).

A study by Wu and colleagues (2017) has concluded that responsibilities in the context of food safety and quality in Chinese FSCs need to be clearly defined to make substantial progress and improvements overall. This alludes to the concept of the “origin of responsibility” (Altshuler, 2012), which suggests that all actors in a supply chain are fully aware of their responsibilities, and clearly know the responsibility of others, and that only a shared effort of all actors involved will lead to improved outcomes (Li and Zheng, 2012; Zhu, 2009). Yet, self-regulated approaches have also been found insufficient to drive corporate sustainability (Stiglitz, 2010). Hence, this article asks: How do (food) supply chain actors perceive their own and others’ responsibility for corporate sustainability?

2.2 The role of digitalisation to support sustainability information sharing across supply chain actors

Digital tools are frequently discussed as one avenue (Khajavi and Holmström, 2015) to support the regime of responsabilisation, as they can aid the coordination and combination of consumer-oriented transparency and supply chain-oriented traceability for delivering reliable (sustainability) information (Dingwerth and Eichinger, 2010; Fung, 2013).

Ideally, digitalisation connects and optimises supply chains (Khajavi and Holmström, 2015) and increases the responsiveness towards legal changes and consumer needs (Kumar *et al.*, 2020; Verdouw *et al.*, 2016). Pressure from consumers for businesses to digitalise relevant data has grown both because they have more access to real-time information and because they have become more knowledgeable about sustainability (Song *et al.*, 2018). As a consequence, providing access to more transparent and complete sustainability-related information (Topp-Becker and Ellis, 2017) has become a central concern for actors across the supply chain (Gharehgozli *et al.*, 2017). Sharing sustainability information throughout FSCs can be challenging given their relatively longer length compared to most other industries (Feng *et al.*, 2017; Stranieri *et al.*, 2019). Nevertheless, the food industry particularly has symbolic importance in sharing sustainability information, because of the sector’s global impact (Cortese and Murdoch, 2020; Nosi *et al.*, 2020; Singh *et al.*, 2019) and its exposure to a constantly changing and sensitive context (Cantino *et al.*, 2019). In a recent bibliometric review, He and colleagues (2022) concluded that the comprehensive development of digitalising sustainability information for communication across food actors has become increasingly important.

Yet, recent studies have demonstrated that food supply chain actors still lack the digital tools and skills that are needed to acquire, process and share such information across actors (Kittipanya-ngam and Tan, 2020). This might be due to the investment needs in technology and/or the strategic orientation by companies (Correani *et al.*, 2020). Further, the general access to data (Nilsson Lewis *et al.*, 2023) is limited, underlying methodologies and measures are not standardised, and data are often imprecise (Wognum *et al.*, 2011). Moreover, it can be difficult for different actors to interpret and use information. This ties into the question of the scope of transparency, such as whether to include by-products, and how the length of each

supply chain should be defined. These considerations are relevant because supply chain traceability allows companies to minimise waste and helps them pursue and achieve ecological and economic sustainability (Fassam and Dani, 2017; Pappa *et al.*, 2018).

Even though achieving transparency across supply chain actors is a major challenge, there are best-practice examples of supply chains that approach transparency from an integrated perspective, incorporating information on feed suppliers, farmers, processing firms and retailers who share digital systems (Wognum *et al.*, 2011). Research suggests that the ideal practices share all information without delay or distortions (Beulens *et al.*, 2005). Only transparent and sufficiently visible data on sustainability issues involving all supply chain actors render a successful implementation (e.g. Allenbacher and Berg, 2023; Marshall *et al.*, 2019). This article seeks thus to answer: How are digital tools used to share sustainability information across the (food) supply chain?

3. Methodology

The study employs a case study research strategy, as outlined by Miles and Huberman (1994). This approach is used because both corporate sustainability and digitalisation are contemporary phenomena that are best understood within their real-life contexts, where control over events is limited. Additionally, sustainable supply chain management in food supply chains is a complex topic (Kembro *et al.*, 2014), necessitating a research approach that can capture the nuanced, context-specific idiosyncrasies inherent in these systems (Yin, 2009). The study is underpinned by qualitative data, collected through semi-structured interviews. This was deemed the most suitable method to gain insights from experts in this relatively under-researched area of digitalisation in sustainable supply chain management (Kittipanya-ngam and Tan, 2020).

3.1 Data collection

To examine the sharing of information on sustainability across supply chains, we selected Urban Deli, a Sweden-based retailer and restaurant, with an established sustainability profile. As of 2022, Urban Deli had 226 employees and around 23 million EUR in revenues (Allabolag, 2023). Founded in 2008, the company is owned by Axfood, “a leading food retail group in Sweden and the second largest player in the Swedish food retail market with a market share of over 20%” (Axfood, 2023). It operates from four locations in Stockholm. The meals it produces are also sold to certain supermarkets in Sweden. We considered Urban Deli’s supply network to be a suitable focus to study SSCM because the company aspires to be a local industry leader in offering solely sustainable products and services to consumers, indicating in its own materials that it “should be easy for consumers to make sustainable choices [. . .]” (Urban Deli, 2023). Urban Deli has indicated that it is seeking to drive collaborative development towards a new and sustainable food culture with a focus on sharing knowledge about it (Urban Deli, 2024). As part of this effort, it is a member of Karma, a food waste app that sells food close to its expiration date at a discount.

The company’s operating units are integrated, meaning that products sold at retail stores are also served in the restaurants. All supply chain actors thereby cater to all units at Urban Deli. Urban Deli has reported that it has established trusted relationships with its supply chain network of wholesalers and farmers/processors, working with many of them for many years. Accessibility restrictions have limited the scope of the supply chains to three actors in the network: retailer/restaurant (Urban Deli), first-tier suppliers (wholesaler) and second-tier suppliers (farmers/processors). Some second-tier suppliers were farmers (e.g. suppliers growing potatoes), while some second-tier suppliers were food processors (e.g. suppliers of processed meat).

We applied a non-probabilistic, non-random snowball sampling technique. This technique relies on the interviewer making initial contact with respondents (Robinson, 2014) and thereby locating actors relevant to the study population (Venter *et al.*, 2011). Snowball sampling is in line with the study’s purpose of shedding light on both sides of tier one and tier two of a food

retailer’s supply network (Selviaridis and Spring, 2022). Two broad product categories – protein and vegetables – were chosen to explore the use of digital tools to support sustainability information sharing. Covering two product categories increased the likelihood of shedding light on the idiosyncrasies of the studied context (Eisenhardt, 1989).

In total, we conducted fourteen interviews with eleven supply chain actors between February 2022 and May 2022. The eleven supply chain actors represented seven supply chains connected in one supply network (Table 1).

The semi-structured interview guide consisted of two sections: one about the past, current and planned use of digital tools in the company’s operations, targeting supply chain management and sustainability information; and the other about the perception of sustainability and the industry’s degree of transparency when sharing sustainability information. In line with the study’s abductive approach, the interview guide contained a list of topics, rather than specific, carefully worded questions. For example, the questions that were posed included the following: “What areas in sustainability has your company been focusing on?”, “How do you collect sustainability information?”, “How do you share sustainability information with other actors?” “How do you collect product specific sustainability information?”, “How do you use digital tools in your operations to collect sustainability information?” and “How do you use digital tools in your operations to share sustainability information?”.

A conversation-like interview method following an interpretivist approach was used to gain the understanding and perspectives of interviewees and to offer them opportunities to elaborate on issues that they found relevant to discuss (Wilkinson and Birmingham, 2003). Thus, participants were encouraged to bring up their thoughts, experiences, motives and perceptions on the subjects (Hudson and Ozanne, 1988), rather than to be subjected to a rigidly structured conversation. Conversation-like interviews were used in an effort to make it feel natural to react, reply and take slightly other routes when it was required (Liedtka, 1992).

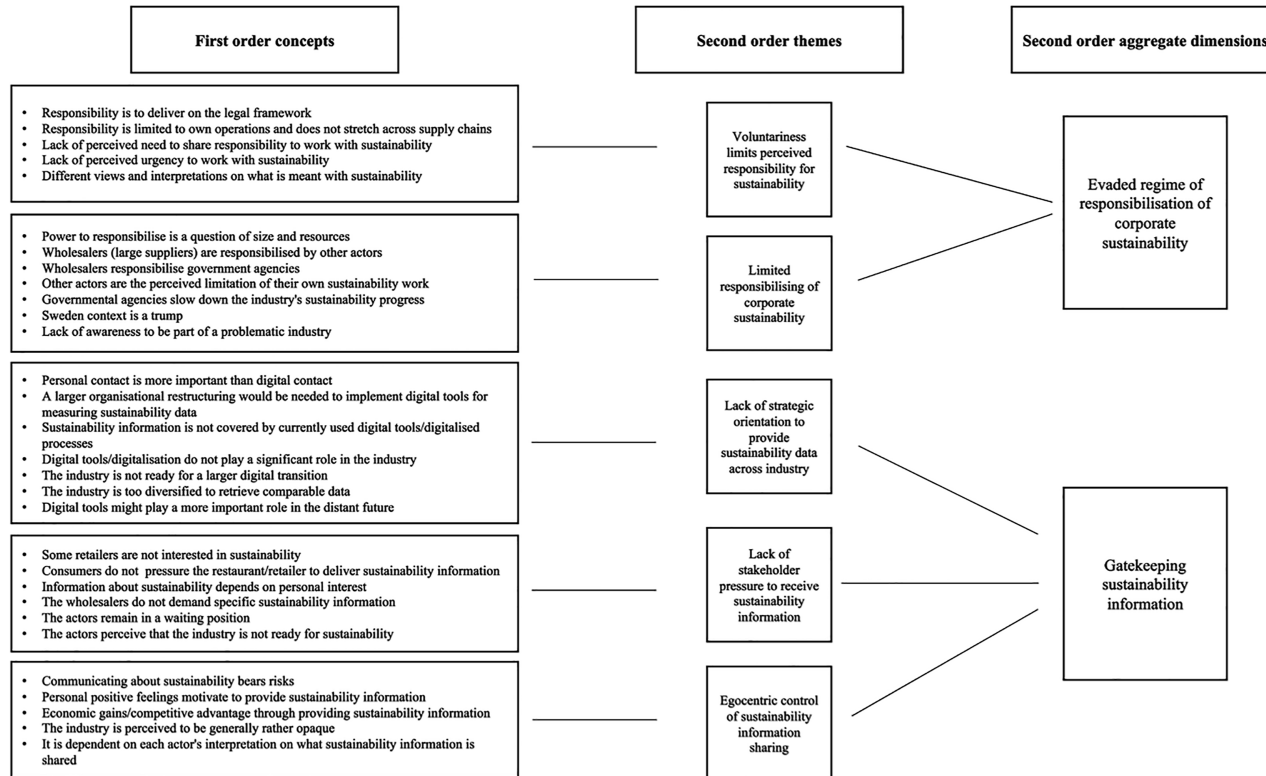
3.2 Data analysis

Interviews were recorded, transcribed verbatim and transcriptions were sent to interviewees to ensure the credibility of the data (Wahyuni, 2012). The transcripts were then used to abductively analyse the data in three steps. Throughout the entire analytical process, the authors have ensured intercoder reliability, typically a process in which two (or more) coders discuss the results of independent coding rounds (Given, 2008). An overview of the data structure is provided in Figure 1.

Table 1. Overview study participants

Company name/pseudonym	Role of company	Role of interviewee
Urban Deli	Retailer/restaurant	Respondent 1 Respondent 2 Respondent 3 Respondent 4
Proteins 1	Wholesaler	Environmental Sustainability Manager
Proteins 2	Wholesaler	Sustainability and Quality Manager
Vegetables 1	Wholesaler	Buyer
Vegetables 2	Wholesaler	Owner
Proteins 3	Farmer/processor	Owner
Proteins 4	Farmer/processor	Quality Manager
Proteins 5	Farmer/processor	Quality and Environment Director
Vegetables 3	Farmer/processor	Quality and Environment Manager
Vegetables 4	Farmer/processor	Owner
Vegetables 5	Farmer/processor	Quality and Food Safety Manager

Source(s): Authors’ own work



Source(s): Authors' own work

Figure 1. Coding framework

First, we open-coded line by line, resulting in over 90 first-order codes. We then discussed the results of the first round of coding and a strategy for more suitable codes (i.e. emergent topics) was developed. Then, these emergent topics were thematically clustered into 30 first-order concepts, reflecting the informants' interpretations (Wahyuni, 2012). At this stage, we sought to refine first-order concepts. For instance, though the inductive analysis brought forward issues of power and power allocation in sharing sustainability information across supply chains, we found the data to be anecdotal. Thus, we chose to further analyse the data set covering topics related to responsibilities and the use of digital tools. Examples of the first-order concept that "personal contact is more important than digital contact" are the following:

[...], but I believe that it is best if they [clients] can come by to the field in person. Like this, the client can get an impression and yes, the system that one is working with seems fair. – Vegetables 4, Owner

Then you would do it via FreshX (digital tool) if it does not concern anything specific. For example, like the *stenbitsrommen* (fish to extract roe), this one we would not order from FreshX. Because it could be likely that a coloured *stenbitsrommen* arrives that one would also buy at ICA (Swedish supermarket chain). So, we often choose to call for knowing what the product is, to be on the sure side. – Urban Deli, Respondent 1.

After revisiting the literature, the analytical lens of responsabilisation (Shamir, 2008) was applied to the data. The data points were compared through the lens of responsabilisation to build five interconnected, second-order themes. This process led to an improved understanding of the perception of responsibility when sharing sustainability information across Urban Deli's food supply network. Examples of the second-order theme are "voluntariness limits perceived responsibility for sustainability" are "lack of perceived urgency to work with sustainability" and "different views and interpretations on what is meant with sustainability."

The data were further aggregated through axial coding into two second-order aggregate dimensions. An example of building the aggregate dimension "gatekeeping sustainability information" are the three second-order themes "lack of strategic orientation to provide sustainability information", "lack of internal and perceived external interest in sustainability" and "egocentric control of sustainability information sharing."

4. Findings

4.1 Evaded regime of responsabilisation

4.1.1 *Voluntariness limits perceived responsibility for sustainability.* The prevailing perception that emerged was that actors considered responsibility for corporate sustainability to be limited, the purview of national legislative frameworks and regulations. Indeed, the fact that sharing sustainability information remains voluntary may limit the perceived responsibility to do so. One can thus interpret sustainability information sharing as a business opportunity that may or may not be pursued. This, in turn, can lead to a rather restricted and haphazard way of taking responsibility for driving progress in the industry.

Similarly, the premise that information sharing on sustainability issues is voluntary and means going beyond what is legally required seemed to have an impact on the perceived responsibility for corporate sustainability itself. While only a few actors perceived themselves to be responsible for improving environmental or social sustainability as part of corporate sustainability, most actors instead ascribed responsibility to other actors. This rather evaded regime of responsabilisation for corporate sustainability can be interpreted to impede the development and implementation of digital tools to support the sharing of sustainability information.

Interviewees indicated that the definition of what is perceived as corporate sustainability is at the discretion of each actor. A common agreement on sustainability measures was largely absent.

Well, it [sustainability] is about being able to reduce the resources we use when we produce. So that it becomes a more sustainable society that way. And a more durable product in the end. – Proteins 4, Quality Manager

I would say that this is the negative, that it is so fuzzy today with what is sustainable. Just that question and it can be something that no one really cares about. – Vegetables 3, Quality and Environment Manager

The lack of a shared definition was coupled with a lack of perceived urgency to work with sustainability. None of the interviewees mentioned that they were dissatisfied either with the speed of improvement in the industry or with the current state of their organisation or industry. This again accentuates that voluntariness limits perceived responsibility for sustainability.

4.1.2 Limited responsabilising of corporate sustainability. We interpret the limited responsabilising of corporate sustainability to induce an evaded regime of responsabilisation of corporate sustainability because interviewees clearly delineated their responsibilities while ascribing other actors with relatively greater responsibilities. Those that were perceived to have the greatest responsibilities are actors with power, large organisations and, foremost, governmental agencies.

But if you were to go out there, you would understand exactly what I mean, and then you would ask how you can run a business like this in Sweden. It is a shock. Then you put the question to the governmental agencies and say: “But if we are to take responsibility and we are to take responsibility for the future. How can you then not?” They do not dare go there [business actors], when they cannot bring the police with them, they never go there. That is how bad it is. They do not dare to go out and do their checks. The Swedish Agency for Agriculture barely goes out there and checks how everything is imported – it says Swedish on all products, regardless of whether they are vegetables or canned goods. [...] How far should I go with my work? Should I then try to pressure prices? It is a really grey area there. – Vegetables 2, Owner

And many probably wait as long as they can until there is a demand from the governmental agencies, before actually doing anything. – Proteins 3, Owner

Generally, none of the interviewees raised the need to assume greater responsibility themselves. Neither did they mention contributing to unsustainable practices in the industry. Rather, they perceived that their country of origin, Sweden, provided a narrative to escape pressures to improve corporate sustainability beyond measures legally or economically required.

The food companies today, they are a very small part of what actually happens in the world. I do not remember. Last time I checked, I think they accounted for 15% or something. And there it is, there is a lot to do depending on where in the sector you are, for example in cultivation, it is most of all that CO₂ is released. [...] Now we live in Sweden, we have pretty good rules here in Sweden. It is a little different when you come abroad. (Vegetables 3, Quality and Environment Manager).

No, but the only thing I would like to add is that you cannot just do it yourself. Everyone must go in the same direction, but then I am talking, as only in Sweden, the problem is that when we joined the EU, in Sweden we have the morale that we always want to do something and then we do it properly. But we have to rely on the EU wanting to do the same in other countries. That is what you want to arrive at. Why should it be good at home but crap elsewhere? It is that you have the same standard throughout the EU. And not just in talk, but by demanding. – Vegetables 2, Owner

4.2 Gatekeeping of information on sustainability

4.2.1 Lack of strategic orientation to provide sustainability data across industry. The increasing importance of corporate sustainability within the industry was confirmed by all interviewees; however, it was only Urban Deli who claimed to strategically integrate sustainable product procurement in the scope of SSCM. Even though Urban Deli has undergone several digitalisation efforts, these were rather limited to narrowly delimited areas in the organisation. The company did not pursue an integrated method to retrieve or share sustainability information systematically, either with or without digital tools. Furthermore, if sustainability information was available, it was not necessarily shared with other actors. A

competitive view on possessing sustainability information was evident. These findings were consistent across supply chain actors. Finally, the strategic orientation of an integrated digitalised supply chain management was not deemed relevant in today's industry but was expected to become crucial in the distant future.

I have tried here in over ten years to digitalise as much as possible. The market itself has not been ready for it. Still today. My entire customer base is not ready for it either. But I think that it is about [...] providing an alternative, new possibilities for customers. If you limit the alternatives for customers and customers want to adjust to that what they have been offered, so I think that we can change the culture. – Vegetables 2, Owner

This [digitalised sustainability information] will come. But it is nothing just now. I do not know exactly how it will look like. I know that we will work more towards sustainability reporting. But how it will look like, I do not know. – Proteins 1, Environmental Sustainability Manager

In addition to the fact that the industry was perceived as being in an embryotic stage to integrate digital tools, it was also regarded as too diversified to retrieve comparable sustainability information. In fact, interviewees gave accounts of personal contacts that outperformed digitalised communication. Digital tools were merely viewed as add-ons rather than as potential innovations or ways to fill gaps in operative procedures.

But this is also so to receive relevant data, like you can report about in a relevant way, is not very easy when you have croppers all over the world and do it on the same level. – Vegetables 5, Quality and Food Safety Manager

No, it does not say [sustainability information in FreshX]. We have to get in touch with the suppliers and find out in person. – Urban Deli, Respondent 4

4.2.2 Lack of stakeholder pressure to receive sustainability information. While the analysis of interviews revealed a clear lack of digitalisation, the interviewees did not consider this to be a major barrier to future business. In fact, interviewees frequently reported a general lack of both external stakeholder pressure and internal motivation to work with digitalised sustainability information. Interviewees attributed the absence of stakeholder pressure to a limited interest in sustainability across the industry.

They take their information from what we have done and then they produce minced meat with the meat. Then it says that it has come from us in their code. And which slaughterhouses it comes from and that they have grounded the minced meat then, and that is where their information comes from. They probably press for more [sustainability] information then. But it is not like we have any part in it in that way. Or we are asked about. – Proteins 4, Quality Manager

Not what I know about, I am from the kitchen. We do not get so many [sustainability] questions [...]. – Urban Deli, Respondent 3

The interviews revealed two sources contributing to the lack of internal motivation. First, the consumer-facing informants reported that providing sustainability information on menus would cannibalise the aesthetics of the menu design. Hence, sustainability information was not automatically put on menus. Second, sharing sustainability information with other actors appeared to be a decision made based on one's discretion and whether such information was considered crucial for economic success.

Now I do not want that it [sustainability information] is on the menu because it does not look aesthetically beautifully, [...]. – Urban Deli, Respondent 3

It [sustainability information] drives one to get better from a competitive perspective. – Vegetables 5, Quality and Food Safety Manager

4.2.3 Egocentric control of sharing sustainability information. An egocentric orientation of sharing sustainability information led to a situation in which supply chain actors exerted control over the transmitted environmental sustainability content. Two key reasons for this

surfaced in interviews. Interviewees noted that sharing sustainability information entails business risks. In addition, individual actors decided for themselves whether sustainability content would be shared with other actors, and, if so, which content would be shared. While the concerns on business risks reflect a conventional view on the purpose of sustainability for companies, the reliance on individual-level decision-making can be interpreted to partly stem from personal evaluations about sustainability information sharing.

Because it will be an extra cost and extra cost things, and increased environmental impact that should not become bigger, or what is it called, winning from something. Labels have become more expensive, and more materials are needed. Like the wholesalers have no use for it. If they do not do anything about it. – Proteins 4, Quality Manager

Yes, there is a difference between the suppliers and the customers. Definitely. As I have said before, we have customers who are very interested and we have customers who are totally uninterested, and we have certainly also the same spread among our suppliers. I would say that the large international food companies often have a sharp profile, [...], for example Unilever who all know. But then we also have small Swedish suppliers who are also dedicated to it [sustainability]. So, there is, even there is a big spread, dependent on size, dependent on where you are located. But we also know when we are out and source externally or outside Sweden's borders, that there are many suppliers who say that: "This we have no clue about. We are not interested in this. You up there in the North. What are you up to? You are very troublesome and have such high demands." So, there is all that. This is why it is so important for us to find suppliers who, [...] we can trust and who wants, at least work towards this direction, even if they have not gotten that far. So, there is a will. – Proteins 2, Sustainability and Quality Manager

The relevance of sharing sustainability information was also a subject of debate. This can be interpreted as an outcome of the absence of a formal agreement on what shared sustainability information should entail. Frequently, sustainability was discerned to be a broad concept in which actors perceived that they had the liberty to select their areas of relevance. It can be understood that this situation can lead to actors limiting themselves to those activities that promise (short-term) economic gains. This approach is unlikely to contribute to a systemic transition towards reducing and combatting unsustainable industry practices.

Well, it is really up to the entrepreneurs themselves if they want to profile themselves with it [sustainability]. – Proteins 4, Quality Manager

Yes, this would have been good if there would be an authority who did that. To force everyone to do it. But if this [sustainability] should be like this commercial, then it must be something that one can earn money from. Which is perhaps a bit more difficult if you only look at it as a cost factor and not something that you could win from. – Vegetables 3, Quality and Environment Manager

Finally, it can be interpreted that the conventional view of pursuing corporate sustainability can fuel a carefully managed sharing of sustainability information. Supply chain actors continue to perceive an opaqueness, which is why they may not perceive a need to push for this transparency. This situation may translate into carefully selected or even withheld sustainability information. Such asymmetric information flow can hinder the opportunity to achieve sustainability collectively. Gatekeeping sustainability information sheds light on one of the reasons why the current industry-wide transition into the digitalisation of sustainability is lagging.

5. Discussion

5.1 *Evaded regime of responsabilisation of corporate sustainability*

Corporate sustainability can be understood as the sum of an internal organisation's perception of responsibility and the perception of ascribed responsibilities by external stakeholders (Basu and Palazzo, 2008; Weder, 2012). In this study, voluntariness acts as both an opportunity and a limitation to improve corporate sustainability among supply chain actors (Lindgreen *et al.*,

2009; Lindgreen and Hingley, 2009). When both internal and external stakeholders' ascribed responsibility for corporate sustainability are not clearly discerned, then industry-wide progress can lag in reaching sustainability (Kivimaa *et al.*, 2021).

Indeed, while we observed some signs of a regime of responsabilisation (Oels, 2005), most respondents indicated that they had rescaled responsibility away from locations where products are physically situated during their life cycle. It was evident that actors generated sustainability information independently rather than collaboratively. This partially confirms that while supply chain actors are interlinked through their supply network, sustainability issues continue to be resolved individually (e.g. Oels, 2005; Soneryd and Ugglå, 2015).

Based on these insights, we propose a nuanced version of the regime of responsabilisation, which we call an *evaded regime of responsabilisation*. We use the term evaded regime of responsabilisation to define one in which most supply chain actors assign governmental agencies with the greatest responsibility to provide the industry with solutions for improved corporate sustainability. This contradicts both the theory that actors closest to the problems are expected to deliver sustainability solutions (Lobel, 2004) and the theory of the origin of responsibility, which assumes that all actors are fully aware of their responsibilities (Altshuler, 2012; Wilhelm and Villena, 2021). Indeed, in this study's specific context, by contrast, the actors farthest away from the problems were assigned to address the delivery of sustainability solutions. More specifically, supply chain actors ascribed governmental agencies with the responsibility to replace voluntary measures (cf. Lernborg and Sendlhofer, 2017; Shamir, 2008). Moving the greatest responsibility to governmental agencies is theorised as a technique to avoid risks from individualising responsibility for corporate sustainability (Ormond, 2015). Based on this reasoning, we formulate the following proposition capturing the redirecting of responsibility towards powerful actors:

Proposition 1. In an evaded regime of responsabilisation supply chain actors assign governmental agencies with the greatest responsibility to provide solutions for improved corporate sustainability.

The findings suggest that ascribing governmental agencies with the greatest responsibility for corporate sustainability allowed supply chain actors to remain in a waiting position both for assuming responsibility for sustainability themselves beyond any measures that were legally and economically, and for developing digital ways to sharing sustainability information. In line with this, supply chain actors showed a limited drive to innovate.

In light of the promise of digitalisation to accelerate sustainable transitions (Andersen *et al.*, 2021) and to bridge the negative consequences of responsabilisation (Khajavi and Holmström, 2015), this study raises concerns. In the study, relevant actors did not perceive digital tools as a viable way to improve sustainability information sharing (cf. Dingwerth and Eichinger, 2010; Fung, 2013). The lone exception arose when such sharing was considered to generate business opportunities, a finding that aligns with Ormond (2015). Thus, we articulate the following proposition:

Proposition 2. In an evaded regime of responsabilisation, supply chain actors have limited drive to innovate for corporate sustainability (e.g. to use digital tools).

5.2 Gatekeeping sustainability information

Sharing sustainability information in the food industry is particularly important due to its global impact (Cortese and Murdock, 2020; Nosi *et al.*, 2020; Singh *et al.*, 2019). In recent studies, it has been reported that food companies experience increasing consumer pressure to digitalise and provide real-time information about sustainability (Song *et al.*, 2018). It was therefore unexpected that the interviewees' reflections indicated that stakeholder pressure to provide sustainability information that they had experienced was rather weak (cf. Chen and Kitsis, 2017). Some interviewees even reported that stakeholders lacked interest in sustainability. As this study underscores, providing access to transparent and complete

sustainability-related information has not been a central concern for supply chain actors involved (cf. [Song et al., 2018](#); [Topp-Becker and Ellis, 2017](#)). This contrasts the claim by previous literature suggesting Sweden-based food companies are exposed to high stakeholder demands related to sustainability and digitalisation ([Diagourtas et al., 2022](#)). One explanation for the contrasting results of these studies may stem from the sensitive and constantly changing context of the food industry ([Cantino et al., 2019](#)).

The lack of stakeholder pressure may also relate to the lack of strategic orientation to provide sustainability information across the industry. It is theorised that when supply chain actors do not experience stakeholder pressure, it is increasingly unlikely that they strategically work with these topics. The rather ad hoc approach has been confirmed by other studies (e.g. [Kittipanya-ngam and Tan, 2020](#)) suggesting that the main hindrances towards the strategic orientation to provide sustainability information (digitally) include investment needs, general access, reliability and validity of data ([Nilsson Lewis et al., 2023](#); [Wognum et al., 2011](#)). These barriers surface despite the evidence that integrating shared digital systems across supply chain actors can benefit all actors ([Wognum et al., 2011](#)).

Finally, the observed egocentric control of sustainability information sharing may relate to the lack of both strategic orientation and stakeholder pressure. Despite having connections through the same supply chain network, the actors in this study neatly controlled the outgoing flow of sustainability information. The corporate sustainability narrative is deeply rooted in traditional economic motives, an observation that confirms previous studies (e.g. [Provasnek et al., 2017](#)). This study's analysis sheds light on fine-grained motivational factors as to why sustainability information was controlled from an egocentric perspective. It often depends on the individual (e.g. employee, owner) ([Sendlhofer, 2020](#)) to which degree she or he perceives a need or relevance to share sustainability-related information. In other words, it is at the discretion of the individual whether the company shares information ([Sendlhofer and Tolstoy, 2022](#)). This approach leads to a gatekeeping of sustainability information, reinforcing negative consequences such as opaqueness, disparities in the definition of corporate sustainability and deviations in data quality, reliability, and validity ([Ormond, 2015](#)). Building on this reasoning, we suggest the following proposition:

Proposition 3. The perceived lack of stakeholder pressure (strategic orientation, egocentric control) for providing sustainability information leads to an aversion to using digital tools and a gatekeeping of sustainability information.

Previous studies have predicted that the relatively long length of supply chains typical for the food industry makes sustainability information sharing more challenging ([Feng et al., 2017](#); [Stranieri et al., 2019](#)). However, the findings of this study suggest that the length of supply chains may not play a decisive role. Indeed, sharing of sustainability information proved challenging even though the supply chains that were the subject of our study were relatively short (i.e. local).

Finally, the differences in data and information across actors are theorised as contributors to the limitations of assessing corporate sustainability. Instead of working towards increased transparency with information viable for all supply chain actors ([Wognum et al., 2011](#)) to accelerate a transition towards a sustainable industry, the status quo prevails, indicating that the Swedish food industry is in its infancy in this regard.

6. Conclusions

This paper empirically examines the role of digitalisation in the sharing of sustainability information of supply chain actors. It analyses the content of interviews conducted with various actors in the Swedish food supply chain network and central organisation of a Swedish food retailer and restaurant with a reputation for being a leader in sustainability; as such it answers a call for more empirical studies in the field.

The study aimed to answer two research questions: (1) How do (food) supply chain actors perceive their own and others' responsibility for corporate sustainability? and (2) How are digital tools used to share sustainability information across a (food) food supply chain?

The findings show that the Swedish food industry is in a waiting position concerning the use of digital tools to support the sharing of sustainability information in supply chain management. Indeed, instead of using digital (or other) tools to share sustainability information, actors carefully managed or withheld information on sustainability, reflecting a gatekeeping of such information. Further, the findings suggest that, in the Swedish food supply network we examined, the regime of responsabilisation for corporate sustainability was evaded, with those interviewed indicating that such responsibility lies with national governance and its regulatory measures.

The study contributes theoretically to refining the theory of regime of responsabilisation (Ormond, 2015) by shedding light on the redirecting of responsibility towards governmental agencies for a transition towards a sustainable food industry. This indicates a growing importance of regulatory mechanisms (cf. Shamir, 2008). Finding that actors ascribed governmental agencies with the greatest responsibility to promote corporate sustainability can indicate a certain "helplessness" of actors, realising that a transition towards a sustainable food industry will not emanate from industry, but instead needs increased regulatory support. Almost all actors behaved as gatekeepers for sustainability information, and many of them said a stricter regulatory framework was preferred to proceed.

This study makes two empirical contributions. First, it contributes to filling the gap between conceptual studies and the empirical realities of sustainable supply chain management (Buyukozkan and Gocer, 2018) by probing the subject empirically with interviews with actors working in a food supply network. Second, the findings inform decision-making processes by delivering possible explanations for why the transition towards a sustainable food industry is progressing relatively slowly. The absence of a shared agreement on what counts as sustainable reinforces long-standing barriers: imprecise and incomplete data, an absence of needed data and data collection, and diverse and individualised decision-making to determine what to count and how to define sustainability.

This research has the potential to influence public policy by emphasising the need for and value of regulatory support to promote corporate sustainability and address barriers hindering progress towards a sustainable food industry.

This study was designed to explore the use of digital tools in sharing sustainability information in a Swedish food supply network. Thus, its generalisability is limited due to its focus on a single case study. Future studies should test the proposed concepts for generalisability on a larger sample, for example, by covering other retailers' supply networks in other countries. Similarly, we encourage future research to test the study's propositions for their generalisability. Finally, future research could investigate what role digital tools may play in sharing sustainability information when supply chain relationships are formed, rather than maintained.

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