

Sustainability in the supply chain – understanding suppliers' resource allocation for sustainability issues

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Abstract

Purpose – As corporate sustainability is systemic, it cannot be achieved without effective involvement of suppliers. This study aims to examine the drivers of supplier companies' resource allocation to a sustainability issue that affects customer companies and society at large.

Design/methodology/approach – Supplier companies' resource allocation for a sustainability issue is explained from variables at the levels of the institutional, supply chain and internal environments of a supplier company. The framework is tested with a moderated regression model on 102 supplier companies in animal-based supply chains, focussing on their resource allocation for farm animal welfare.

Findings – The findings show that supply chain factors have the strongest influence on suppliers' resource allocation, including a strong effect of investment specificity and a U-shaped effect of chain integration. Also, significant effects from institutional variables, namely, the pressure on consumer companies, and an inverted U-shaped effect of sustainability competition are found. The innovativeness, referring to the internal environment of supplier companies, appears as another important factor for the allocation of resources to animal welfare, as a sustainability issue.

Research limitations/implications – The results have implications for consumer market companies to deal with sustainability issues that require involvement of their suppliers, for supplier companies to increase their competitive positions and strengthen their relationships within the supply chain, and for policymakers seeking solutions for sustainability issues in the market domain.

Originality/value – While existing literature focusses mostly on the corporate sustainability of highly visible and large consumer companies, to the best of the authors' knowledge, this study is the first to examine the drivers of supplier companies' resource allocation for a sustainability issue, namely, animal welfare. It provides insights on what drives supplier companies, usually operating outside the spotlight, to become part of a sustainability transition.

Keywords Resource allocation, Corporate sustainability, Supply chain companies, Sustainability issues, Agribusiness supply chains

Paper type Research paper

1. Introduction

Companies operating in consumer markets (hereafter B2C companies) are increasingly exposed to external pressures from environmental organisations and activists, NGOs, employees and consumers, pressurising them to integrate sustainability issues as part of their corporate sustainability agenda (Sayed *et al.*, 2017). Supplier companies instead rarely experience external pressures as directly as B2C companies because they are less visible to end-customers (Foerstl *et al.*, 2015). Situated in the supply chains of B2C companies, they include among other traders, producers of components and ingredients, and wholesalers. As they operate in business-to-business markets, they rarely have leading brands, nor do they have direct contact with end-customers.

It is this group of companies that we still know very little about when it comes to their contribution to sustainability transitions. Accordingly, the greater part of the existing literature on corporate social responsibility and corporate

sustainability addresses the roles of B2C companies (Nidumolu *et al.*, 2009; Lozano, 2015; Sayed *et al.*, 2017), ignoring how supplier companies deal with sustainability issues in the downstream of the supply chain (Foerstl *et al.*, 2015). More recently, however, the attention for supplier companies in corporate sustainability is rising (Villena and Gioia, 2020). Fan *et al.* (2021) show that behind the corporate sustainability achievements of B2C companies, suppliers can be a driver of B2C companies' successes in terms of sales and customer satisfaction. Villena *et al.* (2021) draw on stakeholder and relationship theories to delve deeper in the mechanisms behind such effects in a specific case study.

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Received 2 August 2022
Revised 9 November 2022
12 December 2022
13 January 2023
20 February 2023
24 February 2023
Accepted 27 February 2023

The current issue and full text archive of this journal is available on Emerald Insight at: <https://www.emerald.com/insight/1359-8546.htm>



Supply Chain Management: An International Journal
28/7 (2023) 28–42
Emerald Publishing Limited [ISSN 1359-8546]
[DOI 10.1108/SCM-08-2022-0305]

In this study, we continue this emerging line of research by taking a quantitative approach to explain suppliers' resource allocation to a specific sustainability issue. Specifically, we answer the questions, which factors in the institutional environment, supply chain environment and internal environment of the company drive supplier companies resource allocation for a sustainability issue and to what extent these factors relatively contribute to the resource allocation. Suppliers resource allocation to address sustainability issues is essential to align in the supply chain system with the sustainability ambitious of B2C companies. By looking at a specific sustainability issue, we can narrow down the targeted allocation of resources and thus prevent compensatory behaviour (where providers contribute to problems that are easy to solve). In this way, they compensate for other issues that they do not invest in, even though they would be more important to solve. Specifically, we study the welfare of farm animals (AW) as a sustainability issue, because associated sectors such as meat, dairy and fish production involve many supply chain actors that are invisible to consumers. Moreover, in the context of the Netherlands, the largest exporter of animal products in the EU (CBS, 2022), the sustainability issue of AW seems to be particularly relevant, as animal-based supply chains are often efficient and "locked-in", so that any change related to AW can have serious consequences for the operations of suppliers within the supply chain. Furthermore, AW is a highly emotionalised issue, making it potentially "explosive" for the reputation of B2C companies. As such, animal-based supply chains provide an interesting and conservative context to test the framework for resource allocation in relation to sustainability issues in supplier companies.

Our study makes several contributions to the existing literature. *Firstly*, by extending previous research on sustainable supply chain management (Paulraj, 2011; Foerstl et al., 2015; Lozano, 2015; Montabon et al., 2016), our model treats resource allocation as a function of multiple factors at three organisational levels of the company environment: institutional (North, 1990), supply chain (Williamson, 2000) and internal (Barney, 1995) and lays the foundation for a theory on resource allocation of supplier companies for sustainability issues that B2C companies are confronted with. By drawing on theories from, among others, strategic management, supply chain management, marketing and transaction cost economics, it also responds to recent calls from supply chain scholars for interdisciplinary theoretical approaches to develop supply chain-specific theory (Abbasi and Nilsson, 2012; Flynn et al., 2020; Carter et al., 2021). *Secondly*, the study connects the emerging literature on sustainable supply chain management, with the wider literature on sustainable transitions (Geels, 2020; Köhler et al., 2019). From the perspective of this literature, supply chains are an essential part of the regimes, the level at which sustainable transitions may occur. A deeper understanding of the factors that drive suppliers' resource allocations for sustainability issues implies insights in how policymakers can encourage industry to transform. It is this policy level that the literature on sustainability transitions is most concerned with (Köhler et al., 2019). *Thirdly*, by testing the framework empirically in animal-based supply chains in the Netherlands, this study shows the relative strength of the identified drivers, providing directions on how supply chains

can become part of the sustainability transition. In doing so, the study provides new insights to the question which "buttons" procurement managers and policymakers should press to get sustainable solutions developed in chains and market systems affected by persisting sustainability issues.

The remainder of the article is as follows: The conceptual orientation section serves as the foundation for the theoretically developed model. The model is described in the following section, providing an explanation of the drivers of resource allocation for sustainability issues. We then present the methodological approach and the validation procedures used to control the data collected. The research results are displayed in the result section before the findings are discussed in the discussion section. The article ends with providing theoretical and practical implications.

2. Conceptual orientation

The future markets for sustainable products and service may potentially grow as big as \$12tn a year, as early as 2030 (Sheth and Parvatiyar, 2021). Not surprisingly, sustainability has therefore been proposed as an important complement to the areas in which companies may find relative competitive advantages in their supply chains (Paulraj, 2011), like cost efficiency, quality, delivery, flexibility and innovation (Krause et al., 2001; Pullman et al., 2009). As on average more than half of the products' value propositions come from materials and components sourced from suppliers (Paulraj, 2011), sustainability is expected to affect all levels of the supply chain. As such, sustainability (issues) can only be realised if embedded holistically, throughout the entire supply chain (Preuss, 2005).

A sustainability issue is a subject matter that affects the well-being of the society or the environment (Kuhlman and Farrington, 2010). Sustainability issues typically affect the interests of stakeholders that do not have a formal bond with the company but that do experience or stand up for the negative direct or indirect consequences of the company's activities. Stakeholder literature refers to these stakeholders as secondary, because unlike primary stakeholders they have no formal bond with the company, like investors, customers or employees do (Godfrey et al., 2009; Laplume et al., 2008). The category includes among others non-governmental organisations, community activists advocacy groups and/or religious associations (Clarkson, 2016). They often take explicitly position in a societal debate related to a sustainability issue, by communicating their views to the public, using advocacy advertising, (social) media attention or other activities (Keim and Zeithaml, 1986; Hartmann, 2021). B2C companies have therefore been found to be affected by institutional or societal pressures emanating from secondary stakeholders in the institutional environment (Clarkson, 2016).

Maybe because of the less prominent position within the supply chain, companies that are located within in the supply chain have received less research attention on how they are affected by sustainability issues than their highly visible B2C counterparts. Because sustainability issues are typically systemic in that they cannot be assigned to a single company but are shared by an entire sector or market system (Glover et al., 2014), they also have implications for supplier companies (Sayed et al., 2017). B2C companies may, for example, put

pressure on their suppliers to urge a change to sustainable sources or practices (Foerstl *et al.*, 2015). Suppliers can in turn pass on these demands to their own suppliers, so that the new sustainability norms spill over to the entire supply chain, resulting in an allocation of resources to meet the new sustainability norms. These effects usually depend on the level of integration of the supply chain, influencing both the relationships and dependencies of supplier companies to their customer company counterparts (Palmatier *et al.*, 2006).

With the fast-growing market for sustainable products and services, supplier companies may also proactively develop solutions for sustainability issues. As such, sustainability issues may open the door to the market for innovative companies that aim to strengthen their supply chain position (Deng *et al.*, 2020). As such, supplier companies may not only be confronted with sustainability issues through explicated demands of B2C companies that ripple through supply chains but also by competitors that offer sustainable solutions proactively (Du *et al.*, 2007). Such companies may have obtained the knowledge and capabilities to offer sustainable solutions. They may also have established partnerships with secondary stakeholders that can legitimatise their solutions for the eye of the public (Ingenbleek and Dentoni, 2016). For B2C companies that experience public pressure, these can be attractive ready-at-hand solutions.

The extent to which supplier companies are capable of innovating in sustainable ways depends also on their internal environment, in particular the level of innovativeness that is rooted in its resources and organisational culture (Narver *et al.*, 2004). The existing literature refers to a supplier company's innovativeness as practices related to new product developments as well as alliances for fostering innovation, design and process innovation (Azadegan and Dooley, 2010; Kim and Chai, 2017). As such, it represents the degree to which companies are able and strategically motivated to develop new solutions for customers, including sustainability solutions for downstream B2C companies.

In summary, sustainability issues will affect supplier companies in three environments. Following institutional literature, we distinguish the institutional environment of the supplier company from the task environment (Grewal and Dharwadkar, 2002). The institutional environment matters because it includes the pressures that supplier companies face from downstream B2C companies and because it may generate sustainability competition in their market environment

(cf. Sayed *et al.*, 2017). The task environment refers to the market-level decisions that managers need to make on a daily basis (Grewal and Dharwadkar, 2002) and is further specified into the supply chain and the internal environment of a supplier company (Walker and Jones, 2012). The explanatory variables used in our study are, therefore, assigned to three different environments affecting managerial resource allocation decisions (Figure 1).

3. Drivers of resource allocation for sustainability issues

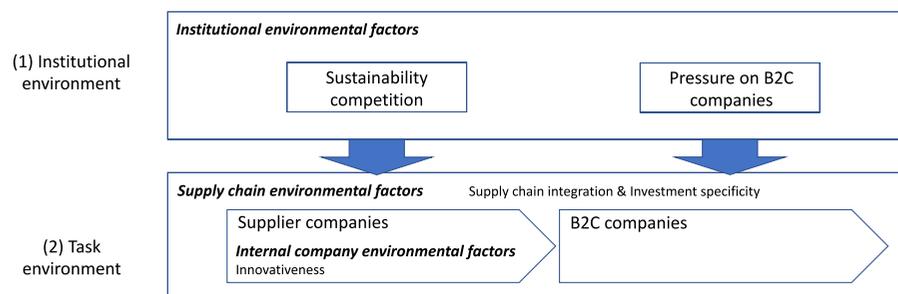
The research hypotheses of this article are shown in Figure 2. The dependent variable is labelled resource allocation by a supplier company for a sustainability issue, and formally defined as the allocation of financial and human resources (e.g. management time), that are allocated to relief a specific sustainability issue that the company affects through its activities and processes. Consistent with other studies, resource allocation is conceptualised as broader than financial resources only (Frels *et al.*, 2003; Reinartz *et al.*, 2005). This may include activities like the search for sustainable sources of supply, keeping these supplies separate from other product flows, training employees and suppliers, assessing consequences for delivery, flexibility and costs (Ciliberti *et al.*, 2008).

As mentioned before, the resource allocation for a sustainability issue of supplier companies is expected to be influenced by factors from three different environments, namely, the *institutional* (North, 1990), *supply chain* (Williamson, 2000) and *internal* (Barney, 1995) environment. We discuss these in subsequent order, formulating our hypotheses (Figure 2).

3.1 Institutional environmental factors

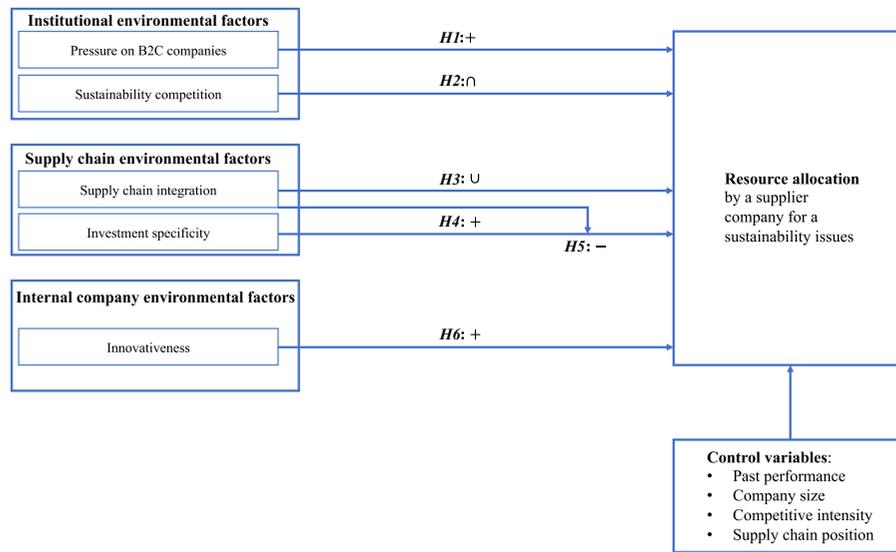
Pressure on B2C companies is the pressure that secondary stakeholders put on B2C companies in the downstream marketing channel of a focal supplier company. Secondary stakeholders intend to change social norms concerning what they deem appropriate, thereby placing the sustainability issue on the agenda of public and/or private companies that can allocate resources to address the issue. The development of social-media platforms/channels has reduced information asymmetry within consumer markets, making it much easier for secondary stakeholders to obtain and share information on the

Figure 1 Conceptual orientation



Source: Developed and designed by the authors

Figure 2 Conceptual model



Source: Developed and designed by the authors

origins and production conditions of sustainable products (Bergh *et al.*, 2019). This information can be used to exert pressure on companies by drawing a relationship between societally relevant sustainability issues and specific companies in their agenda-setting activities (Eesley and Lenox, 2006; Bergh *et al.*, 2019). Examples include social-media campaigns, boycotts, protest campaigns and civil lawsuits. These activities can penetrate a company's task environment by imposing costs (e.g. legal fees, public relations expenses). More importantly, however, they influence primary stakeholders who have the power to remove resources from a company when legitimacy is questioned (Maignan and Ferrell, 2004; Freeman *et al.*, 2008). For example, in a study within the retail context, Handelman and Arnold (1999) demonstrate that there is a minimum acceptable level of marketing actions with a social dimension, below which the effectiveness of a company's economically oriented actions is hindered. Likewise, consumer studies on corporate social responsibility showed that a negative impact on sustainability issues may lead to repercussions in terms of buying behaviour (Sen and Bhattacharya, 2001; Burke *et al.*, 2018).

The impact of the actions of secondary stakeholders towards B2C companies might therefore ripple down through supply chains to less-visible companies within business markets. In response to pressure from secondary stakeholders, a B2C company may start demanding socially responsible practices from its suppliers. Once these demands have been made explicit, supplier companies acting within the supply chain will be forced to respond to them (Ingenbleek and Immink, 2010; Kotler, 2011). Alternatively, supplier companies may anticipate such demands and innovate in sustainable practices before B2C companies explicitly express a need for their services (Narver *et al.*, 2004). Either way, the pressure is likely to affect the extent to which a supplier company allocates resources for sustainable issues. Our first hypothesis is therefore as follows:

H1. A supplier company's resource allocation for a sustainability issue increases with the extent of *pressure on B2C companies regarding the sustainability issue*, as perceived by the supplier company.

A supplier company will not necessarily encounter relevant sustainability issues through its relationships with B2C companies. It might also be confronted with *sustainability competition* within its own market domain. Following the work of Du *et al.* (2007) on competition based on social responsibility, we define *sustainability competition* as the extent to which a supplier company is confronted with competitors that explicitly position themselves as "sustainable". Such competitors are likely to be the first to respond to sustainability issues (Du *et al.*, 2007). Examples could include companies that produce organic foods, environmental tourism, "green" energy and sustainable investment banking. Regarding *sustainability competition*, supplier companies are likely to respond in one of two ways concerning their resource allocations for a sustainability issue.

Firstly, mainstream marketing and industrial economics suggest that competition is a force that weakens the effectiveness of marketing instruments and triggers companies to distance themselves from their competitors (Kotler and Keller, 2022). Consequently, if competitors actively position themselves as sustainable, a supplier company is likely to distance itself from these competitors by focussing on such dimensions as functional product attributes (e.g. quality, cost leadership) (Kotler and Keller, 2022). It is therefore likely to minimise its allocation of resources for the sustainability issue, down to the minimum required for the company to be perceived as legitimate (Pfeffer, 1981; Suchman, 1995).

Secondly, according to research on innovative product launching, first-movers may eliminate barriers to success for followers (Golder and Tellis, 1993; Sood and Tellis, 2005). Such first-mover barriers are also likely to be present with regard to sustainability innovations in supply chains. This is

because a company's own assessment of its sustainable practices is often not seen as credible, such that its innovations must be legitimised by widely respected *secondary* stakeholders (Aramyan *et al.*, 2013). This requires visible communication activities, like participation in social-media/online-platform discussions, where companies and trusted stakeholders (organisations) can meet in a public environment to discuss the desirability and feasibility of various practices related to sustainability (Lee *et al.*, 2013). Such stakeholder cooperation in the formulation of standards for sustainability issues has been shown to enhance legitimacy (Ingenbleek *et al.*, 2007; Ingenbleek and Immink, 2010). When standards are set based on multi-stakeholder dialogue, companies can simply implement those standards that have already been legitimised by key stakeholders within the supply chain, instead of going through a process of stakeholder debates themselves. The involvement of organisations and/or institutions in controlling and certifying defined sustainability standards might pose another barrier for early movers. Ingenbleek and Immink (2010) describe the case of a company's attempt to obtain legitimacy for its animal welfare practices through a scientific study. The initiative failed because when doubts were raised about the results of the study, the company had no backup support from any respected secondary stakeholder group. In short, companies that compete based on sustainability issues can also pave the road for followers, who can then implement such strategies more effectively and efficiently.

We therefore hypothesise that the combination of these effects will generate an inverted U-shaped effect of *sustainability competition* on resource allocation for sustainability issues, such that medium levels of *sustainability competition* generate the highest levels of resource allocation, with low (due to entry barriers) and high (due to competitive positioning) levels of competition generating low levels of resource allocation:

H2. The level of *sustainability competition* perceived by a supplier company has an inverted U-shaped effect on that company's resource allocation for a sustainability issue.

3.2 Supply chain environmental factors

Relationship-marketing literature suggests that trust, commitment and relationship satisfaction between the members of a supply chain can grow over time, leading to stronger value-chain integration in the form of intensified communication, shared norms and resource-sharing (Palmatier *et al.*, 2006; Ataseven and Nair, 2017). Accordingly, *supply chain integration* is defined as the interdependency of activities by different chain members within supply chain processes (Day, 1994).

Drawing on the theory of strong and weak ties (Granovetter, 1985), we hypothesise a dual effect of *supply chain integration* on resource allocation. On the one hand, supply chains with strong ties between members are willing to share more information and be more responsive to changes in the needs and wants of their customers. For this reason, supplier companies are likely to recognise the pressure on B2C companies and allocate the resources necessary to fulfil needs emerging from upstream pressure, thus exploiting their high level of *chain integration*. On

the other hand, companies integrated in supply chains characterised by weak relationships are likely to have more weak ties from which to explore a wider set of opportunities (Wuyts *et al.*, 2004). Companies in supply chains with low levels of integration might regard the emergence of a sustainability issue – which places pressure on a B2C company – as an opportunity to strengthen customer relationships. Given that both effects might be applicable, *supply chain integration* could be expected to have a U-shaped effect on resource allocation, such that medium levels of integration generate the lowest levels of resource allocation, with low (prevailing weak ties) and high (prevailing strong ties) of integration generating the highest levels of resource allocation:

H3. Supply chain integration has a U-shaped effect on the supplier company's resource allocation for a sustainability issue.

Relationship-marketing studies have also drawn attention to the role of *investment specificity* in customer relationships (Palmatier *et al.*, 2006; Lin *et al.*, 2017). *Investment specificity* is defined as the extent to which “assets [...] are uniquely dedicated to another firm” (Rokkan *et al.*, 2003, p. 210). Resource allocation for sustainability issues can be a specific investment, as not every B2C company experiences the same sustainability issues, the same degree of pressure from secondary stakeholders nor does every company respond to such pressure in the same way (Reid and Toffel, 2009; Chatterji and Toffel, 2010; Lonsdale, 2001). Previous literature has identified two possible effects of *specific investments*. From a transaction-cost perspective (Williamson, 1979), specific investments may cause opportunistic behaviour on the part of customers (Rindfleisch and Heide, 1997), thus leading to lower levels of resource allocation. From a relationship-marketing perspective, researchers have argued that specific investments also have important value-creating properties, as they strengthen relationships between buyers and sellers (Dwyer *et al.*, 1987; Ghosh and John, 1999). According to Rokkan *et al.* (2003), the effect of *specific investments* is contingent on extendedness and norms of solidarity. Extendedness refers to the time horizon of the relationship between a supplier and a B2C company. If the time horizon is longer, refraining from opportunistic behaviour is often more profitable, as companies stand to generate more value from future business than from short-term defection (Rokkan *et al.*, 2003). The investments of suppliers to sustainable issues reflect such extendedness, as they are intended to enhance legitimacy, ultimately strengthening their business by securing the commitment of *primary* stakeholders and retaining their relationship (Maignan and Ferrell, 2004). If the company does not plan to extend the same type of transactions into the future, investments in “sustainability” will not be of any benefit to the company. B2C companies that value such investments and use them to strengthen their own “sustainability” positioning in the market will benefit only in the long term (Urban, 2005; Du *et al.*, 2007). We therefore hypothesise:

H4. The amount of resources allocated by a supplier company for a sustainability issue increases along with the *specificity of its investments*.

Given the predicted chain-bonding effect of specific investments for the specific situation of resource allocation for sustainability issues, an interaction effect can also be expected between *supply chain integration* and *investment specificity* in terms of the relative attractiveness of the investment specificity for supplier companies in weakly integrated chains. In weakly integrated supply chains, sustainable investments can be used to strengthen collaboration by increasing trust, commitment and stronger norms of solidarity (Palmatier *et al.*, 2006). The value-creation properties of *specific investments* (Rokkan *et al.*, 2003) are therefore likely to be highly useful in such contexts. In contrast, within highly integrated supply chains, the bonding effects of even more specific investments are likely to diminish, as the degree of binding is already at a high level. We therefore hypothesise:

H5. The strength of the effect of *investment specificity* on a supplier company's resource allocation for a sustainability issue is inversely related to the strength of *supply chain integration*.

3.3 Internal company environmental factors

According to the resource-based view of the firm, each company has a unique set of internal environmental resources, each leading to a different response to sustainability issues. As already noted by Narver *et al.* (2004), it is important to distinguish between proactive and reactive approaches in the market orientations of companies. Proactive companies are more innovative in terms of tracking and learning about customers' needs, the development of innovative products or services to address those needs and the implementation and modification of internal processes that enhance product development and the understanding of customer needs. Proactive companies might also be willing to sacrifice existing revenue streams to take on an emerging sustainability issue (Chandy and Tellis, 1998; Nijssen *et al.*, 2005). In contrast, reactive companies are likely to respond only when B2C companies explicitly incorporate a sustainable issue into their buying requirements (Narver *et al.*, 2004). For the purposes of this study, *innovativeness* refers to the characteristics of innovative, proactive companies, which follow the pressure exerted by *secondary* stakeholders on consumer companies further downstream in the supply chain, along with other trends in their environments. These companies anticipate demands arising from specific societal issues by developing solutions at early stages to strengthen their position with customers once the demand becomes explicit. Results reported by Luo and Bhattacharya (2006) and by Luo and Du (2015) indicate that increased engagement in corporate social responsibility activities is associated with greater innovative capability and the increased launch of new products. In line with these findings, innovative supplier companies could be expected to allocate more resources for sustainability issues. We therefore hypothesise:

H6. A supplier company's resource allocation for a sustainability issue increases along with its level of *innovativeness*.

Several control variables were added to the theoretical model to capture potential alternative explanations for the predicted effects: companies past performance is included, as the literature suggests resource slack as a potential explanation for the amount a company spends on sustainable issues, like AW (Waddock and Graves, 1997). Company size (by number of employees) is included, as larger companies are more visible on the market, thereby controlling for secondary-stakeholder pressure that does not come through B2C companies. Competitive intensity is included to control for general competitive intensity effects, thereby ensuring that the measure for sustainability competition includes only the effects of sustainability competition. In addition, high competitive intensity may reduce the available resources that can be allocated for AW. Supply chain position denotes the place that a company occupies within the supply chain between the primary producer and the B2C company. In our research context, companies that are closer to B2C companies may experience more pressure and operate in a more competitive market environment than do companies positioned closer to primary producers.

4. Methodology

To test the theoretical model, a quantitative two-wave survey based on multiple-item scales, was developed. The additional effort to collect the quantitative data, using a two-wave multiple item approach, was undertaken to improve the validity and reliability of the survey data collected. More precisely, the use of a temporal lag in the research design reduces potential common method bias and enables to systematically analyse the relationship between *ex ante* independent variables and *ex post* dependent variables (Rindfleisch *et al.*, 2008). Because our study focusses on AW as a sustainability issue, the sample is restricted to animal-based production and trading companies within the Netherlands, including companies active at supply-chain stages in between primary producers and retailers.

4.1 Sample and procedure

In the first wave of the data collection, we selected a sample of 950 supplier companies from a commercial database containing information from the Chamber of Commerce, including industry codes on the production, processing, trade and wholesaling of animals, meat and fish. The companies were contacted by telephone to verify eligibility (i.e. whether they had been confronted with AW issues) and to identify the managers responsible for the allocation of resources for AW issues. We selected the managers that were most suitable to complete the questionnaire for each supplier company, retaining a high face validity. After the first encounter, 680 of the identified informants agreed to participate in the study. These informants received a personalised letter providing a short description of the survey procedure. A summary report of the study was offered as an incentive. Informants were given a choice to participate through a telephone interview or through a paper-and-pencil questionnaire. Informants choosing the paper-and-pencil questionnaire received three reminder phone calls to return the questionnaire. With informants choosing for a telephone interview, appointments were scheduled. They were also

informed that they would be able to read the questions from a website during the interview to facilitate the interview process and to enable them to start preparing their answers in advance. In all, 87 informants were interviewed by telephone, and 17 returned the paper-and-pencil questionnaires, for a response rate of 15%.

Two cases were removed because they had too many missing values, resulting in a final sample size of 102. The informants held positions like director, general manager, plant manager or owner-director. On average, they had 13 years of experience in their current positions (SD = 10 years) and had been with their companies for 15 years (SD = 11 years). Moreover, in the sample, 73.5% of the involved supplier companies had less than 25 employees, 10.8% had 26–50 employees, 3.9% had 51–100 employees, 3.9% had 101–250 employees, 3.9% had 251–1,000 employees, 2.9% had 1,001–5,000 employees, whereas only 1% had more than 10,000 employees. The turnover of the supplier companies was distributed as follows: 3.2% had a turnover of less than €250,000, 3.2% had a turnover of €250,001–€500,000, 3.2% had a turnover of €500,001–€1m, 28.4% had a turnover of €1m–€5m, 18.9% had a turnover of €5m–€10m, 32.6% had €10m–€100m, 10.5% had a turnover of more than €10m in the year the study was conducted. Supplier companies were operation in the dairy production (4.9%), meat production (32.4%), fish production (6.9%), wholesaling and trading of meat products (24.5%), wholesaling and trading of live animals (28.4%) and in the food and beverages industry (2.9%).

With the use of a temporal lag in the research design, we coped for potential common method bias, which enables us to systematically analyse the relationship between the ex ante independent variables and ex post dependent variables (Rindfleisch et al., 2008). We therefore conducted a second wave of the data collection. After 14 months, informants were contacted again for a short telephone interview to measure the dependent variable. In case the informant was no longer available, we checked with the new informant whether (s)he was the manager responsible for resource allocation to a sustainability issues.

4.2 Regression model

To test the hypotheses, a moderated regression model was calculated, including the simple effects, the predicted quadratic terms, the predicted two-way multiplicative interaction term and the control variables. In this model, $Y_{RAforAW}$ denotes the dependent variable: the companies' resource allocation for AW. The independent variables are as follows: $\beta_{PresB2C}$ refers to pressure on B2C companies; β_{SCOM} and β_{SCOM}^2 represent the supply chain companies' sustainability competition (squared); β_{SCINT} and β_{SCINT}^2 refer to supply chain integration (squared); β_{IS} indicates investment specificity; β_{SCI*IS} denotes the interaction effect of supply chain integration and investment specificity; and β_{IN} signifies the companies' innovativeness.

The following control variables were integrated in the moderated regression model: companies past performance (β_{PP}), company size (β_{CS} , defined by the number of employees), competitive intensity (β_{CI}), supply chain position (β_{SCP}) and, finally, ε signifies the error term of the moderated regression model.

The moderated regression model can be expressed with the following equation:

$$Y = C + \beta_{PresB2C} + \beta_{SCOM} + \beta_{SCOM}^2 + \beta_{SCINT} + \beta_{SCINT}^2 + \beta_{IS} + \beta_{SCI*IS} + \beta_{IN} + \beta_{PP} + \beta_{CS} + \beta_{CI} + \beta_{SCP} + \varepsilon \quad (1)$$

where:

| | |
|---------------|---|
| Y | = resource allocation for animal welfare; |
| C | = constant; |
| $PresB2C$ | = pressure on B2C companies; |
| $SCOM$ | = sustainability competition (squared); |
| $SCINT$ | = supply chain integration (squared); |
| IS | = investment specificity; |
| IN | = innovativeness; |
| PP | = past performance; |
| CS | = company size; |
| CI | = competitive intensity; |
| SCP | = supply chain position; and |
| ε | = error term. |

4.3 Measurements

As we took a supplier company perspective, the questions we asked are inherently related to the constructs, which have been examined over multiple items, correcting for time-dependent effects or response biases (i.e. extreme responses, centrality bias, availability bias). All organisational variables are measured at the level of the strategic business unit (Van der Bij et al., 2003). Measurements were further developed using a combination of validated scales and in-depth face-to-face interviews with 10 managers from the selected industries. All constructs included are measured along seven-point Likert scales. Coefficient alpha, item-to-total correlations and exploratory factor analyses were used to select items for use in a confirmatory factor analysis in LISREL.

The measurement model, including all multi-item scales, has a good fit [$\chi^2(375) = 569.99$, $p < 0.001$, RMSEA = 0.066, CFWE = 0.922, NNFWE = 0.910], with all items loading significantly on the predicted latent factors. Discriminant validity was assessed in pairs of constructs in a series of two-factor confirmatory factor models. Each model was run twice: once constraining the correlation between the two latent variables to 1, and once releasing this parameter. A chi-square difference test was performed. For all models investigated, the chi-square values were significantly lower for the released models. These results suggest that the measures exhibit discriminant validity.

The dependent and independent variables are measured using the following constructs (Table 1):

- *Resource allocation to AW* is measured as a combination of human and financial resources allocated to animal welfare. The construct consists of seven items, six measuring aspects of resource allocation and the seventh providing an objective measure of the financial resources that companies were planning to allocate to AW (as a sustainability issue). The values for the resource-allocation scale were computed as the mean score of all seven items.
- *Pressure on B2C downstream companies* is measured by three items assessing the extent to which companies in the

Table 1 Display of the multi-item measurements used and developed.

| Scale | | Items | Factor loading |
|---|--|---|----------------|
| Resource allocation for AW | New scale | For the coming year, our company is planning to: | |
| | | 1. Pay substantial attention to animal welfare issues | 0.721 |
| | | 2. Make financial resources available for animal welfare projects | 0.783 |
| | | 3. Build more expertise in the area of animal welfare | 0.810 |
| | | 4. Discuss potential improvements in animal welfare with channel members | 0.747 |
| | | 5. Assign higher priority to animal welfare | 0.746 |
| Pressure on B2C downstream companies | New scale | 6. Please indicate the amount (in euros) you would be willing to invest in animal welfare for the coming year (0; <5,000; 5,000–10,000; 10,000–20,000; 20,000–30,000; 30,000–40,000; 40,000–50,000; 50,000–100,000; 100,000–200,000; >200,000)1 | 0.755 |
| | | 1. Downstream players in our channel are under high pressure to improve animal welfare | 0.744 |
| | | 2. Pressure groups have placed animal welfare high on the agenda at our customer or other downstream companies | 0.705 |
| Sustainability competition | New scale | 3. Our customer or other downstream players are often approached to improve animal welfare | 0.535 |
| | | To what extent is your market characterised by: | |
| | | 1. Environmentalism as a competitive dimension | 0.865 |
| | | 2. Environmentalism as a means to achieve competitive advantage | 0.885 |
| Supply chain integration | Adapted from Braunscheidel and Suresh (2009) | 3. Environmentalism as a critical success factor | 0.852 |
| | | 4. Competition that is set apart from environmental developments (R) | 0.540 |
| | | 1. We work with our suppliers and customers to ensure the seamless integration of our inter-firm processes | 0.677 |
| | | 2. We give our suppliers feedback on quality and delivery performance | 0.738 |
| Investment specificity | Adapted from Rokkan <i>et al.</i> (2003) | 3. Our supply chain uses rapid-response initiatives (e.g. continuous replenishment [CR] or vendor managed inventory [VMI] [#]) | 0.771 |
| | | 4. We continuously share information with our channel members | |
| | | Improving animal welfare would: | |
| | | 1. Require substantial investments | 0.623 |
| | | 2. Demand substantial internal changes | 0.819 |
| Innovativeness (innovation orientation) | Narver <i>et al.</i> (2004) | 3. Require substantial investments in time and money | 0.734 |
| | | 4. Require training people | 0.722 |
| | | 5. Require us to adapt our systems to the new requirements | 0.684 |
| Past financial performance | Adapted from Homburg <i>et al.</i> (2007) | 1. Competitors in this market recognise us as innovation leaders | 0.853 |
| | | 2. We are recognised as being on the leading edge of technological innovation | 0.871 |
| | | 3. We are first to market with new products or services | 0.742 |
| | | Please describe your financial performance over the past five years: | |
| Competitive intensity | Adapted from Maltz and Kohli (1996) | 1. Below expectations/much higher than expected | 0.755 |
| | | 2. Much lower/higher than average in our industry | 0.562 |
| | | 3. Small margins/impressive margins | 0.657 |
| | | To what extent is your market characterised by: | |
| | | 1. Changes in the sales strategies of your competitors | 0.721 |
| | | 2. Changes in the promotion/advertising strategies of your competitors | 0.910 |
| | | 3. Changes in the competitive structure (e.g. new entrants) | 0.644 |

Notes: ¹Item was converted to a seven-point scale before computing the mean score of the resource-allocation scale; R: reversed item; [#]Item removed during the purification process

Source: Developed and created by the authors

downstream supply chain of the focal supplier company experience pressure by *secondary* stakeholders to improve animal welfare within their supply chains.

- *Sustainability competition* is measured by three items referring to the presence and manifestation of socially

responsible products (particularly organic products) within the market of the respondent's company. For the purposes of this study, organic products were the most clearly positioned in terms of AW, and they were therefore emphasised more strongly in the items.

- *Investment specificity* is measured by five items adapted from the specific investment scale by Rokkan *et al.* (2003). Innovativeness is measured by three items derived from the innovation orientation scale by Narver *et al.* (2004).
- *Supply chain integration* is measured by four items adapted from Braunscheidel and Suresh (2009).
- *Past financial performance* over the past five years is measured by the three-item *slack resources* scale (Waddock and Graves, 1997).
- *Competitive intensity* is measured with three items adapted from Maltz and Kohli (1996).
- *Supply chain position* is measured by the roles fulfilled by the organisation in the chain, according to the respondent (1 = primary producer; 2 = trade and wholesaling of unprocessed products; 3 = processing of raw materials and production of semi-produced products; 4 = wholesale and trade of semi-produced products; 5 = production of consumer products; 6 = trade and wholesale of consumer products/buying desk to retailer; 7 = retailer).

4.4 Data validation

We checked for systematic differences between respondents that choose the telephone interview and those that filled out the pencil-and-paper questionnaires. We also checked whether telephone-interviewed respondents who looked at the questionnaire on the website reported different answers than those who relied on the operator's voice only, resulting in no significant differences. We checked for response biases in three ways. Firstly, we compared early, middle and late respondents on the variables included in our model (Armstrong and Overton, 1977), assigning informants to the three groups based on the number of days before the informant responded. No significant differences between the groups were found. Secondly, we examined equity and number of employees between the companies that participated in our study and the remaining 847 companies in the same industrial categories registered at the Chamber of Commerce. Again, the results indicate no differences between the two groups. Thirdly, we contacted 50 non-respondents by telephone and asked whether they are willing to complete a short nine-item questionnaire of 10 statements. For 8 of the 9 items that were tested, no significant differences were found between the respondents and the non-respondents' sample. The item that was significant pertained to the construct innovativeness. This evidence further suggests that response bias is unlikely to be a problem in our data (Table 2).

5. Results

Following Aiken *et al.* (1991), we computed deviations from the means to create measures of the independent variables. With the highest variance inflation factor being 1.58 (pertaining to the squared term of chain integration), multicollinearity is unlikely to be a problem in our analysis. Results are reported in Table 3.

The results support *H1*, suggesting that the perceived pressure on downstream B2C companies positively affects the resource allocation of supplier companies to a sustainable issue, such as AW. The parameter of pressure on B2C downstream

companies on resource allocating is positive and significant (0.24, $p < 0.01$).

H2, predicting an inverted U-shaped effect of sustainability competition experienced, is also supported. We find a significant negative squared effect of sustainability competition on resource allocation (-0.20 , $p < 0.01$). Because the simple effect of sustainability competition included in the model is not significant (0.14, NS), this suggests an inverted U-shaped effect (Lind and Mehlum, 2010).

H3, predicting a U-shaped effect of supply chain integration on resource allocation, is also supported. The positive quadratic effect of supply chain integration is significant and in the predicted direction (0.39, $p < 0.001$). As the simple effect of supply chain integration is not significant (0.09, NS), the quadratic effect implies a U-shaped effect.

H4, predicting a positive effect of investment specificity on resource allocation, is supported, as the simple effect of investment specificity indicates a significant positive effect (0.34, $p < 0.001$).

H5 predicted that the effect of investment specificity is stronger when companies are more integrated. This hypothesis is supported as the multiplicative term of *supply chain integration* and *investment specificity* is significant (-0.29 , $p < 0.001$). To explore this finding in greater detail, we conducted a spotlight analysis comparing the scores of intermediate companies at one standard deviation above and below the mean of *supply chain integration* of the intermediate companies (Aiken *et al.*, 1991). The results of this analysis indicate that, consistent with *H5*, weakly integrated companies allocate more resources for AW than do strongly integrated companies when investment specificity is high (as the results of an additional spotlight analysis confirm).

Finally, *H6* predicted a positive effect of *innovativeness* on resource allocation. Given the marginally significant effect of innovativeness (0.13, $p < 0.10$), we find support for the hypothesis at the level of marginal significance.

With respect to the control variables, the only significant effect was found for company size (0.24, $p < 0.01$), suggesting that companies with more employees generally allocate more resources to AW. The findings also suggest that past performance has no effect (-0.01 , NS), nor does the company's position within the supply chain (-0.06 , NS) or the level of competition (other than sustainability competition) within the market (0.01, NS) (Table 3). To examine the explanatory power of the model further, we tested several interaction effects across the variables from the institutional, supply chain and internal environments. These tests revealed no significant effects.

6. Discussion

This study explores the drivers of resource allocation for sustainability issues, using the issue of AW, in supplier companies. We developed a theoretical model including factors from the *supply chain*, *institutional* and *internal* environments of supplier companies. The model was tested on a sample of 102 supplier companies in agri-food supply chains in the Netherlands. The results provide strong support for the theory, in that they reveal significant effects in the hypothesised directions. The observed differences in effect sizes suggest,

Table 2 Display of the properties and correlation of purified measures

| | Mean | SD | Alpha | Composite reliability | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|------|------|-------|-----------------------|------|------|------|-------|------|------|-------|------|------|
| 1. Resource allocation for AW | 4.64 | 1.58 | 0.89 | 0.89 | 1.00 | | | | | | | | |
| 2. Pressure on B2C downstream companies | 3.93 | 1.45 | 0.71 | 0.70 | 0.38 | 1.00 | | | | | | | |
| 3. Sustainability competition | 3.96 | 1.36 | 0.86 | 0.87 | 0.26 | 0.21 | 1.00 | | | | | | |
| 4. Supply chain integration | 5.22 | 1.22 | 0.76 | 0.77 | 0.16 | 0.18 | 0.33 | 1.00 | | | | | |
| 5. Investment specificity | 3.91 | 1.50 | 0.84 | 0.84 | 0.45 | 0.17 | 0.29 | 0.06 | 1.00 | | | | |
| 6. Innovativeness | 4.06 | 1.54 | 0.87 | 0.73 | 0.35 | 0.24 | 0.40 | 0.16 | 0.33 | 1.00 | | | |
| 7. Past performance | 4.12 | 1.08 | 0.70 | 0.72 | 0.06 | 0.25 | 0.09 | -0.03 | 0.03 | 0.11 | 1.00 | | |
| 8. Competitive intensity | 4.02 | 1.19 | 0.80 | 0.81 | 0.07 | 0.16 | 0.33 | 0.05 | 0.05 | 0.10 | -0.03 | 1.00 | |
| 9. Company size | 1.68 | 1.42 | | | 0.29 | 0.16 | 0.01 | 0.23 | 0.23 | 0.24 | 0.02 | 0.12 | 1.00 |
| 10. Supply chain position | 3.35 | 1.02 | | | 0.05 | 0.11 | 0.19 | 0.02 | 0.03 | 0.09 | 0.01 | 0.12 | 0.11 |

Note: Correlations above 0.17 are significant at $p < 0.05$

Source: Developed and created by the authors

Table 3 Results of the moderated regression analysis, with resource allocation for AW as the dependent variable

| | | Beta | SE |
|---|-------|-------------|------|
| <i>Institutional-environmental factors</i> | | | |
| Pressure on B2C downstream companies | H1: + | 0.24** | 0.09 |
| Sustainability competition | | 0.14 | 0.11 |
| Sustainability competition squared | H2: ∩ | -0.20** | 0.06 |
| <i>Supply chain-environmental factors</i> | | | |
| Supply chain integration | | 0.09 | 0.12 |
| Supply chain integration squared | H3: U | 0.39*** | 0.06 |
| Investment specificity | H4: + | 0.34*** | 0.09 |
| Supply chain integration × Investment specificity | H5: - | -0.29*** | 0.07 |
| <i>Internal company environmental factors</i> | | | |
| Innovativeness | H6: + | 0.13* | 0.09 |
| <i>Control variables</i> | | | |
| Past performance | | -0.01 | 0.12 |
| Company size | | 0.21** | 0.09 |
| Competitive intensity | | 0.01 | 0.12 |
| Supply chain position | | -0.06 | 0.13 |
| df | | 101, 12 | |
| F | | 7.49*** | |
| R ² (adjusted R ²) | | 0.50 (0.44) | |

Notes *** $p < 0.001$; ** $p < 0.01$; * $p < 0.10$

Source: Developed and created by the authors

further, that the three environments (supply chain, institutional and internal) may not be equally important in explaining resource allocation for AW, as an example for a sustainability issue.

Factors related to the supply chain environment (supply chain integration, investment specificity and the interaction of the two) have a particularly strong impact on resource allocation to sustainability issues. These findings corroborate with those of Fan *et al.* (2021) who explore the perspective of companies confronted with sustainability issues and conclude that suppliers can be an important part of the solution. Sustainability issues raised at the B2C company level have an impact on the supplier company, as the new sustainability norms affect the entire supply chain system. Whether supplier companies allocate resources to a sustainability issue depends, thus, on the level of integration within the supply chain, with more integrated supplier companies allocating more resources

to retain relationships (Palmatier *et al.*, 2006; Villena *et al.*, 2021). To respond to sustainability issues can therefore also be seen as specific investment for a supplier company to strengthen supply chain relationships with their customers (Wathne *et al.*, 2018). In addition, highly integrated supplier companies may also proactively develop solutions for sustainability issues, allocating the necessary resources needed to approach a sustainability issue within the supply chain system. Hence, the results emphasise that decisions of supplier companies are fundamentally different from the more visible and, in many cases – larger B2C companies – by resource allocation depending on the chain integration and investment specificity, justifying the relevance of studying them in their own right.

Consistent with existing case study evidence that suggested that stakeholder pressure next to relational factors influenced supplier responsibility (Villena *et al.*, 2021), factors pertaining

to the institutional environment – notably, the pressure on B2C companies that ripples down to supplier companies – suggest that supplier companies cannot be seen in isolation of the public pressure that affects the consumer market nor the competition they are exposed to within their market. Sustainability issues open the door to the market for other innovative companies that strategically position themselves as sustainable within the supply chain by allocating additional resources to a sustainability issue (Deng *et al.*, 2020). Thus, supplier companies are not only confronted with sustainability issues by explicit demands from B2C companies but also by competitors that proactively offer sustainable solutions. As displayed by the inverted U-shaped effect on sustainability competition, the sustainable positioning of competitors may represent a threat or an opportunity for supplier companies in the market, leading them to allocate resources to a sustainability issue to retain their relationships with customers or focussing on other aspects, such as cost leadership. Thus, supplier companies need to decide whether a sustainability issue, as a moving target, is of strategic importance to allocate resources, fostering long term (vs short term) relationships with their customers. As such, our results suggest that both variables influence suppliers' resource allocation to a sustainability issue, with medium competition leading to the highest resource allocation.

The effect size of innovativeness, which pertains to the *internal environment* of a company, is weaker than that of the variables pertaining to the institutional and supply chain environments of supplier companies. This finding suggests that, although internal factors matter for the resource allocation, decision-making is particularly influenced by a company's position within the supply chain and the pressure and associated sustainability competitive dynamics occurring at the downstream end of the supply chain (Andersen and Skjoett-Larsen, 2009).

With respect to the control variables, the only significant effect was that of a company's size on its resource allocation. This suggests that larger companies – measured by the number of employees – are generally more likely to allocate resources for sustainability issues. One logical explanation is that larger companies are more visible and therefore receive more pressure from society directly, thereby affecting primary stakeholders (e.g. employees and investors) (Maignan and Ferrell, 2004). The past performance of supplier companies had no significant effect on resource allocation for AW as a sustainable issue, thus indicating that resource allocation for sustainability is not a "luxury" that depends on the presence of slack resources (Waddock and Graves, 1997).

The results of the study should be interpreted in the light of its limitations, which pave the way for follow-up studies. Firstly, the research focusses on a single sustainability issue: AW in animal-based production systems and trade sectors within the food industry. Future studies might expand the evidence by including other industries with different chain configuration or sustainability issues, exploring the role that such issues play within the dyad of B2C and supplier companies. Secondly, given the relatively small average company size within the target industry, we made a great effort to identify respondents that are qualified to answer our questionnaire to improve the validity of our data. To prevent

such an effort, future studies might apply multi-respondent techniques focussing on industries with larger average company sizes. Thirdly, pressure on B2C companies regarding AW was quantified using direct, subjective responses from supplier company stakeholders. Future research could benefit from exploring the pressure experienced by supplier companies on the market objectively by tracing the activities of secondary stakeholders (e.g. through social-media activity tracking). A fourth limitation of our study is that within the animal-based supply chain the concentration of stakeholders is mostly at the end of the chain (*inter alia* brand manufacturer and retailers). Hence, the results are not directly generalisable to supply chains with different structures. Future research might therefore apply our theoretical model of resource allocation in other supply chains with different configurations, like with fewer, larger and more powerful suppliers, to further validate the research findings.

6.1 Theoretical implications

From a theoretical point of view, this study indicates that the combination of constructs and theories from various sources, including institutional theory, resource-dependence theory, transaction-costs theory and relationship marketing, provides comprehensive answers to research questions relevant to supply chain management and beyond. Such an interdisciplinary approach allows thus the exploration of interactions between constructs and theories, possibly generating new insights with which to address the grand challenges currently facing supply chains for sustainable products (Flynn *et al.*, 2020; Carter *et al.*, 2021).

Moreover, although institutional theory and stakeholder theory traditionally build on a discrepancy between a company's institutional and supply chain environments (Grewal and Dharwadkar, 2002; Handelman and Arnold, 1999), our results support new perspectives in which the two theoretical approaches are likely to complement each other (Herold, 2018; Fernando and Lawrence, 2014). These results confirm that actors within the market and the institutional environment are part of the same system and that their actions can reinforce each other in finding solutions for pressing sustainability issues in the system (in this case, AW).

Another theoretical implication of our findings is that competitors or new entrants that use sustainable issues, such as AW, to strengthen their position with the market influence the allocation of resources for those sustainability issues. This can nevertheless be interpreted in two directions. Low or moderate levels of sustainability competition encourage other companies within the system to follow and invest in sustainability as well. If sustainability competition becomes too fierce, however, incumbent companies are apparently likely to position themselves away from existing sustainability topics (e.g. by competing more in terms of price). Competition could therefore also have a detrimental effect on those investments, as investing in a sustainable issue could become less relevant to strategic positioning, thus reducing the financial resources available for such investments in the supply chain system.

6.2 Practical implications

B2C companies can seek and reward the suppliers that provide them with more sustainable or in this case animal-friendly products, thus contributing to their image as legitimate companies. Innovative supplier companies are particularly likely to allocate more resources for sustainable issues. Greater caution should be exercised when approaching companies that already have a high level of specific investments, however, as additional pressure may lead them to refrain from investing in sustainable issues. Contrary to the notion that *supply chain integration* capability generates shared norms between trading partners, thereby strengthening the bonding effect of investment specificity, the empirical results of this study suggest that companies with strong *supply chain integration* capabilities allocate fewer resources for sustainable issues.

For governments and non-governmental organisations, the results suggest several opportunities for advancing their concerns within the market system. The efforts of these entities have traditionally focussed on exerting pressure on large, visible companies within consumer markets. Our results confirm that such strategies are indeed effective and that they yield responses not only from the B2C companies themselves but also throughout the supply chain. Pressure from secondary stakeholders apparently ripples down into the supply chain and releases resources for a sustainability issue at various stages of the supply chain. The effects of competition related to a sustainability issue are mixed, however, suggesting that secondary stakeholders should exercise caution in pursuing this strategy for integrating their social concerns within the marketplace. If the market competition is too strong, it could lead companies to drift away from the sustainability issue, even though they could potentially be collaborators.

7. Conclusive remarks

Corporate sustainability takes a different form for supplier companies than for B2C companies. According to our study, suppliers' resource allocation for sustainability issues is mainly determined by supply chain factors, such as supply chain integration, investment specificity and interactions between the two. Consequently, supplier companies are either reactive or proactive to sustainability issues that affect B2C companies in their institutional environment. In addition, sustainability issues impact supplier companies within the supply chain through direct pressure on and from B2C companies, and through competitors positioning themselves as sustainable in the market. The size of the supplier company also has a positive influence on the allocation of resources to a sustainability issue. Overall, the results suggest that supplier companies tend to follow their larger customers on the buy side when focussing on sustainability issues. Nevertheless, they can also be proactive if they have sufficient scale or a culture of innovation.

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