



## To collaborate and innovate for sustainability: Food retailers and their external partners

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### ARTICLE INFO

#### Keywords:

Sustainability partnerships  
Sustainability-oriented innovation  
Sustainability ventures  
Retailers  
Agri-food sector

### ABSTRACT

Firms collaborate with various organisations to address social and environmental issues. The existing literature has discussed such partnerships' success factors and the opportunities they present, but few studies have provided an overview of the use of partnerships in the context of firms' sustainability initiatives. This study investigated such sustainability partnerships, focusing on partnership mechanisms and choices of partners over time. Data were collected from 12 European retailers in the agri-food sector from 2014 through 2018 and analysed using content analysis methods. The analysis showed that during this period, the frequency of partnerships supporting philanthropic endeavours declined. Retailers simultaneously increased their use of partnerships to engage in sustainability-oriented innovation. They increasingly partnered with sustainability ventures while decreasing their partnerships with non-governmental organisations (NGOs). These changes in mechanism and partner choice may reflect a shift in retailers' objectives from mainly engaging in legitimacy-oriented partnerships to exploring more participation in competence-oriented partnerships.

### 1. Introduction

The pressures applied by social and environmental issues are increasing at an alarming rate. Although climate change has dominated global forums in the past decade, more sector-specific and volatile issues, such as animal welfare, water pollution and food waste, also require attention and action. To address this broad range of issues, stakeholders from the public and private sectors must join forces to work towards shared sustainability goals.

In the past decade, we have witnessed an increase in firms establishing partnerships with various actors to address sustainability issues (Clarke and Crane, 2018; Wassmer et al., 2017). Firms form and maintain sustainability-related partnerships with diverse external actors based on various objectives (Jolink and Niesten, 2020; Wassmer et al., 2014). Specifically, some firms engage in sustainability partnerships to gain legitimacy and social licence to operate, whereas others aim to develop new skills and competencies (Lin and Darnall, 2015). Such objectives influence the form of these relationships and the mechanisms of firms' specific partnerships. Previous studies have reported that the mechanisms by which firms engage in sustainability partnerships include philanthropy, awareness-raising, policy dialogue, organisational adjustment and product or process innovation (e.g. Gray and Stites,

2013; Rondinelli and London, 2003; Stadler and Lin, 2019; Wassmer et al., 2014).

Firms may initiate partnerships to improve their environmental reputation and social legitimacy (Wassmer et al., 2017) in response to stakeholder pressure regarding a specific sustainability issue. To this end, firms often engage in philanthropic partnerships aimed at the relevant issue (Austin, 2000; Rondinelli and London, 2003). Firms may also enter partnerships to acquire new skills and capabilities, such as those found in partnerships related to sustainability-oriented innovation (SOI) (Goodman et al., 2017). SOI partnerships involve changes to firms' products, processes and practices to create social and environmental value, in addition to economic returns (Adams et al., 2016).

For each partnership mechanism, firms establish their partner selection criteria based on complementarities, i.e. the extent to which a partner contributes the resources and capabilities that a firm seeks (Kale and Singh, 2009; Teece, 1989). Firms, especially large established firms, manage many partnerships in parallel, which requires them to be strategic in selecting partners and allocating resources among those partnerships. While assessing these choices requires an overall understanding of firms' behaviour in managing and prioritising sustainability partnerships over time, the literature has predominantly addressed partnerships from a compartmentalised perspective. Studies

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have often investigated either partnership for specific objectives (Lin and Darnall, 2015; Wassmer et al., 2017) or specific partner types (Wassmer et al., 2014; Zhang et al., 2020). Partnership research has typically also focused on different elements of sustainability in isolation. Empirical investigations have been limited to discrete projects and addressed narrow sustainability topics, such as greenhouse gas and carbon emissions (Ashraf et al., 2017; Ashraf et al., 2019; Meschi and Norheim-Hansen, 2018). More broadly, there has been a general tendency to separate environmental (e.g., Lin, 2012a; Lin, 2012b; Stadler and Lin, 2017) and social (e.g., Ruhli et al., 2017; Sakarya et al., 2012) issues. Consequently, there is limited knowledge about, for example, the most common partnership objectives, mechanisms and partner types that firms choose to engage with and whether such choices remain static over time.

Early literature on sustainability partnerships was also dominated by the arm's-length relationship that characterises philanthropic partnerships (Rondinelli and London, 2003), in which NGO partnerships predominate (Austin, 2000; Austin and Seitanidi, 2012). Therefore, the role of NGOs as firms' sustainability partners has been thoroughly explored. Meanwhile, knowledge regarding more intensive partnership relationships, such as joint SOI activities, is very limited. The existing SOI literature identifies various types of partners but lacks insight into which organisations are suitable as firms' SOI partners and what complementary capabilities firms require from such partners.

SOI is particularly important in more low-tech industrial sectors, such as the agri-food sector (Trott and Simms, 2017), where the role of technological innovation is often understated. Among all sectors, agri-food is the largest contributor to environmental damage because of its excessive demand for energy, materials and water (Notarnicola et al., 2017). The sector struggles with multidimensional issues, such as deforestation, unethical sourcing, food insecurity and food waste, which are directly linked to the environmental (e.g. energy and water), social (e.g. health and equality) and economic (e.g. consumption and employment) impacts of agri-food activities (FAO, 2017). Given their exposure to multiple environmental and social tensions, food firms are under intense scrutiny to implement major changes to their business strategy and operations, which necessitates more sustainable products and processes. Therefore, firms facing such challenges require support from external partners equipped with specific SOI-related capabilities.

The literature on firms' sustainability engagement with external partners in the agri-food sector has focused on the insights of food producers (Dentoni et al., 2016; González-Moreno et al., 2019; Gutierrez et al., 2016). In contrast, although food retailers occupy a key position in the sector due to their strong influence on both producers and consumers regarding sustainability issues (Kotzab et al., 2011; Lai et al., 2010), they have not been given sufficient attention in the literature. Furthermore, studying partnerships involving firms in this segment of the food value chain provides a much-needed opportunity to investigate the significance of SOI in agri-food.

Given this background, I pose a specific question: What characterises retailers' sustainability partnership engagement in the agri-food sector? This study highlighted partnerships involving SOI activities due to its particular importance in such a context and investigated the use of sustainability partnerships in terms of partnership mechanisms and partner types that retailers choose. To this end, I compiled data on the sustainability partnerships of 12 European food retailers from 2014 through 2018 and created a database of sustainability partnerships based on their self-reported sustainability activities and a qualitative content analysis of these data.

The remainder of the article is structured as follows. The literature review describes the existing research on sustainability partnerships and SOI, particularly in the context of the agri-food sector. Section 3 describes the research methods used in the study, followed by a presentation and discussion of the findings in Sections 4 and 5, respectively. Finally, the conclusion summarises this study's contributions to the literature and suggests opportunities for future research.

## 2. Literature review

### 2.1. Sustainability partnerships

Interest in studying partnerships as an important part of firms' sustainability initiatives has been growing among management scholars. Such partnerships are formed when firms engage in collective efforts with external partner organisations to address social and environmental issues (Buysse and Verbeke, 2003; Darnall et al., 2010). Sustainability partnerships can be defined as collaborations between firms or cross-sector partners to reduce negative social and environmental impacts or generate positive ones (Stadler and Lin, 2019; Wassmer et al., 2014).

Compared with its general strategic partnerships, a firm's sustainability partnerships are unique in that their objectives are tied to firm-level sustainability goals and strategies (Dentoni et al., 2016; Gutierrez et al., 2016). Meeting such objectives requires that firms invest resources in initiating and managing diverse partnerships through different mechanisms (Lin, 2012a), such as philanthropy, awareness-raising, policy dialogue, organisational adjustment or product or process innovation.

Lin and Darnall (2015) characterised firms' main objectives in initiating sustainability partnerships as either legitimacy-oriented or competence-oriented. Certain scholars have argued that firms participate in legitimacy-oriented partnerships in response to institutional pressure from regulators, industry norms and customers (Ellram and Golicic, 2016; Lin and Darnall, 2015). Such partnerships may help to improve the environmental reputation and social legitimacy of a firm (Castelló and Lozano, 2011; Wassmer et al., 2017). For example, in a philanthropic partnership with an NGO, partner complementarity is based on generic resources that any firm may offer (e.g. donation money) in exchange for the positive reputation and social legitimacy most NGOs carry (Austin, 2000; Austin and Seitanidi, 2012).

Alternatively, firms engage in competence-oriented partnerships to exploit the value generation potential of pooled resources with their partner (Das and Teng, 2000) and build new capabilities (Eisenhardt and Schoonhoven, 1996). In such partnerships, value-generating and capability-building activities demand that partnering firms share their key assets and core competencies. Unlike the generic complementarity that legitimacy-oriented partnerships require, competence-oriented partnerships require that more specialised assets be deployed among partners (Austin and Seitanidi, 2012).

More recent research investigating firms' objectives for sustainability partnerships found that such partnerships may encompass both legitimacy and competence objectives (Riandita, 2020), thereby complementing the isolated view of earlier studies. From a temporal perspective, legitimacy-oriented partnerships may develop into competence-oriented partnerships and vice versa. I would argue that sustainability partnerships may be positioned on a spectrum combining both legitimacy and competence objectives. On one side, a partnership may focus on legitimacy objectives, such as those manifested in philanthropy partnerships. On the other, a partnership may focus on competence objectives, such as those exemplified by an SOI partnership. Other mechanisms, such as awareness-raising and policy dialogue, occupy various points along this spectrum.

All mechanisms of a sustainability partnership aim, on some level, to achieve positive social or environmental impacts by inspiring change in a particular group of stakeholders (Stadler and Lin, 2019). However, these mechanisms are markedly different in terms of the level of targeted change, the stakeholder groups involved, the degree of involved parties' participation and their relationship to firms' overall strategies. Philanthropy, policy dialogue and awareness-raising efforts are directed at system-wide change (Stadler and Lin, 2019). They aim to alter societal attitudes and culture exogenous to the firm. Such efforts primarily address external stakeholders through activities that fall outside the firm and are typically detached from the firm's internal operation. By

contrast, through product or process innovation, SOI aims to implement changes within the focal firm and mainly involves internal stakeholders (Albort-Morant et al., 2018). The latter also requires more active participation, broader engagement and greater integration of sustainability efforts into a firm's overall strategy (Klettner et al., 2014). As a firm's overall sustainability strategy develops, its engagement in sustainability partnerships can be expected to evolve (Dentoni et al., 2016; Gutierrez et al., 2016).

## 2.2. Sustainability partnerships and SOI

Firms' engagement in SOI involves initiatives and changes to their products, processes and practices to serve the specific objectives of creating and realising social and environmental value, in addition to economic returns (Adams et al., 2016). SOI initiatives lead firms to implement changes to their core business, which often requires that they leverage the expertise of external partners (Cainelli et al., 2015; Ghisetti et al., 2015). Partnerships in SOI also demand that firms participate actively and interact intensively with their partners (González-Moreno et al., 2019; Juntunen et al., 2019). Therefore, a prerequisite of a successful SOI partnership is that firms acquire specific capabilities that can only be gained through previous partnerships and that can be developed over time (Inigo and Albareda, 2019). According to Watson et al. (2018), such prerequisites encompass operational capabilities related to, for example, technology or sustainability, as well as the management of and learning associated with diverse partnerships. The heterogeneous knowledge that firms acquire by managing diverse partnerships has also been found to assist them in proactively selecting additional partners (Degener et al., 2018).

In SOI partnerships, firms select partners based on complementary resources, capabilities and institutional perspectives (Lin et al., 2009; Teece, 1989). While types of complementarity may vary, SOI partnerships typically involve specific complementarity; that is, some degree of customisation is necessary (in terms of shared resources or capabilities, for example), and coordination between partners is critical (Jacobides et al., 2018).

Studies of SOI partnership provide two important insights into the specific SOI-related capabilities that firms may lack and seek externally. First, firms may lack the ability to manage and resolve technological uncertainties while implementing fundamental changes to production processes and product or service offerings (De Marchi, 2012). Such firms may need a technologically competent SOI partner to facilitate changes in their operational and product development processes. Second, successful SOI demands that firms consider the broader social and environmental impacts of such changes, resulting in a need for support in promoting the adoption of new practices and extending the impact of the SOI (Goodman et al., 2017). Such capabilities may be fulfilled by partners with a strong orientation towards social and environmental sustainability, particularly those with effective stakeholder engagement competencies (Lin, 2012a; Lin, 2012b).

Previous studies have identified SOI partners from a broad range of categories, including suppliers (Albino et al., 2009), knowledge-intensive business services (Klewitz et al., 2012), universities (Horbach et al., 2012), research institutes (Horbach, 2008), government agencies (Lin, 2019) and NGOs (Goodman et al., 2017). These partners have typically been characterised as performing one of the two SOI partner roles (i.e. technological competence provider or sustainability impact extender). For example, universities and research institutes typically offer technological competence (Horbach, 2008), whereas NGOs extend SOI impacts (Goodman et al., 2017). Hence, a firm pursuing a new SOI partnership might be interested in a partner that could perform both roles. Recent literature in entrepreneurship has suggested that such roles can be found in an emerging type of entrepreneurial venture created to address environmental or social issues, known as the *sustainability venture* (Demirel et al., 2017; Munoz and Cohen, 2018; Riandita et al., 2021).

## 2.3. Sustainability partnerships and SOI in the agri-food sector

The agri-food sector has provided fertile ground for studying firms' strategic efforts to address environmental and social challenges. Compared with other industry sectors, actors in the agri-food sector have increased their participation in sustainability partnerships more rapidly (Dentoni et al., 2016; Pascucci et al., 2021). Among the various actors in the agri-food industry, retailers play a crucial role in advancing sustainability due to their strong influence on producers and consumers (Kotzab et al., 2011; Lai et al., 2010). Traditionally, food retailing is highly concentrated, with a small number of players dominating the market, and thus large food retailers hold considerable market power and have a significant ability to effect change (Kor et al., 2017).

Large, established firms in the agri-food sector, including retailers, have increasingly allied themselves with various partners to strengthen their efforts to address environmental and social threats (Dentoni et al., 2016; Dentoni et al., 2018; Ménard, 2013). Engaging in a broad range of partnerships offers retailers access to a range of resources through their partners (Barney, 1991). Aside from learning about partnership management and development, a variable partnership experience also facilitates retailers' learning about partners' potentially opportunistic behaviour and any new technological alternatives (Ménard, 2013). Among actors in the value chain, upstream suppliers are found to be the most common types of partners, particularly those focused on sourcing and procurement (Chkanikova, 2016; Kotzab et al., 2011; Pérez-Mesa et al., 2021). Retailers often outsource sustainability-related initiatives to their suppliers, who actively implement such initiatives.

More recently, food firms have also started to engage with SOI partnerships concerning their products and processes (González-Moreno et al., 2019; Triguero et al., 2018). Most SOI partnerships involve the adoption of new technologies, and food firms have been found to rely on iterative trial-and-error interactions with their partners to adapt technology to their own needs (Trott and Simms, 2017). Frequent communication and intensive collaboration among limited partners may therefore be more beneficial compared with engagement with many, varied partners. Studies investigating how the number and variety of partners influence SOI partnerships have supported this conclusion. Collaborating with many and diverse partners has a positive effect on firms' propensity to pursue SOI only to a limited extent; the effect then diminishes, resulting in an inverted U relationship (Ghisetti et al., 2015; González-Moreno et al., 2019). For process-oriented SOI, in particular, González-Moreno et al. (2019) suggested that firms in the agri-food sector prefer to rely on a deep, recurring, and intense relationship with their selected partner.

## 3. Methodology

To achieve a broader view of sustainability partnerships, this study's empirical investigation included a broad range of partnership mechanisms and types. Due to the lack of a reliable external database, I created and compiled a database of sustainability partnerships for this research. Previous empirical studies used databases of project-based partnerships within the scope of environmental projects (Lin, 2012b; Stadler and Lin, 2017). However, I collected all firms' partnership data related to environmental and social issues. Following prior studies in similar contexts, I focused on self-reported social and environmental partnerships (Albino et al., 2012; van Tulder and da Rosa, 2012). While acknowledging the risk that the partnership data may be incomplete or overemphasised, self-reported partnership data, such as reports or press releases, are commonly used when it is impractical to contact all partnerships' participants (Bizzi and Langley, 2012; Schilling, 2009). Thus, I conducted a qualitative content analysis based on firms' annual reports of their sustainability initiatives (Albino et al., 2012; Dentoni et al., 2016; Rondinelli and London, 2003).

**Table 1**  
List of selected food retailers

No	Firm name	Country	Materials	Documents
1	ICA	Sweden	Quarterly sustainability reports Q1-Q3/2014, Q1-Q3/2015, Q1-Q3/2016, Q1-Q4/2017, Q1-Q4/2018 Annual sustainability reports 2014-2018	22
2	Axfood	Sweden	Annual sustainability reports 2014-2018	5
3	Tesco	UK	Annual sustainability reports 2013-2014, 2014, 2014-2015, 2016, 2017, 2018	7
4	Carrefour	France	Annual reports 2014-2018 Registration documents 2014-2018 Overview report	11
5	Casino	France	Annual reports 2014-2018	5
6	Salling Group	Denmark	Annual sustainability reports 2014-2018	5
7	Colruyt Group	Belgium	Annual reports 2014-2018 Sustainability report 2017	6
8	Jeronimo Martins	Poland	Annual sustainability reports 2014-2018 Thematic reports 2014, 2016, 2018 Commitment updates	10
9	Kesko	Finland	Annual reports 2014-2018	5
10	REMA 1000	Denmark	Annual sustainability reports 2014-2018	5
11	Sligro Food Group	Netherland	Annual reports 2014-2018	5
12	Nederland BV Morrisons	UK	Annual sustainability reports 2014-2018	5
Total				91

### 3.1. Sample selection

The focus on European food retailers in this study was motivated by both the availability of sustainability reports in standardised formats and the expectation that European food retailers would be actively engaged in various sustainability partnerships. Sample firms were selected from Corporate Register, a global online directory of sustainability reports from a wide range of industries that has been used in recent studies (Sadovnikova and Pujari, 2017; Thorne et al., 2017).

The first inclusion criterion was the firms' industrial classification. Companies in the subcategory 'food retailers' within the 'food and drug retailers' category were included. I also selected only firms in this subcategory that released their reports in English, for a total of 49 firms. The next criterion was that the firms had released sustainability reports each year from 2014 through 2018, resulting in 39 eligible firms. This five-year period was selected due to the availability of consecutive annual reports released by the firms. Finally, I filtered out cooperatives and firms based outside of Europe. Fourteen firms met all these selection criteria, and to ensure their relevance to the study, I reviewed each firm to confirm that it operated in the consumer food retail sector and that it collaborated with diverse types of external partners. Two firms were excluded at this stage because their major activities were in the business-to-business market, leading to a final sample of 12 firms. All selected firms had major operations in the food retail industry, with some also involved in other sectors.

Although my sampling selection was based on the list from Corporate Register, I also visited each retailer's website to collect all relevant reports. The reported information was a combination of standalone sustainability reports and annual reports with dedicated sections on sustainability. All sampled retailers released annual reports, and one (ICA) also released quarterly reports. The quarterly reports from ICA were used to triangulate information obtained from the annual reports.

Two retailers (Colruyt and Jeronimo Martins) produced additional thematic reports that documented all activities related to a specific topic, such as food waste and animal welfare. In total, 91 reports were analysed, together with additional public documents related to the subject of the study. A list of the sample firms and materials collected is shown in Table 1.

### 3.2. Data collection

I created a database listing all partnerships for each retailer over the sample period through a two-stage data collection process. Prior to the full-scale data collection, I conducted a pilot project examining three firms over three years to develop a standardised data collection protocol. I used ATLAS.ti software to perform both the pilot project and the full-scale data collection. First, I reviewed all reports, identified the keywords that firms used to describe their partnerships and created a preliminary partnership database. I started with keywords used in past partnership studies (e.g., Dzhengiz et al., 2021; van Tulder and da Rosa, 2012) and expanded them by processing all reports in the pilot stage. Following an iterative process, several keywords were identified: partner\*, collaborat\*, cooperat\*, join\*, support\*, sponsor\*, endors\*, network\*, agreement\*, donat\*, work with, working with, work together, working together, and in assistance of.

Upon completion of the pilot stage, I performed the full-scale data collection. I used the keywords identified in the pilot stage to run an auto-coding procedure to identify all potentially relevant statements, reviewed each statement manually and selected only those related to environmental and social partnership initiatives (Gray and Stites, 2013; Stadler and Lin, 2019). I identified each partnership based on partner name, partner type, mechanism, partnership year and relevant quotation in the report. I only included partnerships where the partner name (s) and activities involved in the partnership were explicitly mentioned, signalling the retailer's active role (Albino et al., 2012). Passive activities such as policy compliance, certification, membership, being a signatory and undergoing an audit were excluded.

Importantly, this process recorded all partnerships referred to by the retailer in sustainability activity reports, rather than only each year's newly initiated partnerships. Under the assumption that firms would mention only the most significant activities in their annual reports, I considered the number of partnerships active in a year to be representative of the importance of external relationships for the corresponding partnership mechanisms and partner types in that year. An alternative approach would have been to count only new partnerships, but this approach would have given the same weight to a partnership mentioned only once and a partnership featured in consecutive reports over multiple years. I concluded that counting annual mentions was more appropriate for the focus of my research.

Having created a database of sustainability partnerships over the selected five-year period, I then proceeded to the coding process in two stages. The first stage involved first-order coding, including the retailer's name, year of partnership and partnership text copied from the report. The following stage involved second-order coding, including an open-ended coding process of the partner type, partnership mechanism and sustainability topic.

During this open-ended coding process, I referred to previous research that examined sustainability partnerships (e.g. Gray and Stites, 2013; Wassmer et al., 2014). First, I coded the category for each partnership based on the partner's organisational profile (e.g. sector and legal form). The categories included NGOs, government agencies, universities and research institutes, associations, established firms, multi-stakeholder organisations (i.e. partnerships consisting of more than one partner category) and sustainability ventures. This categorisation expands the approach developed in prior studies (e.g. Wassmer et al., 2017; Wassmer et al., 2014) by identifying sustainability ventures as an emerging partnership category for retailers. I referred to the literature on sustainability-driven entrepreneurship to establish the



**Table 2**  
Overall observation of sustainability partnerships

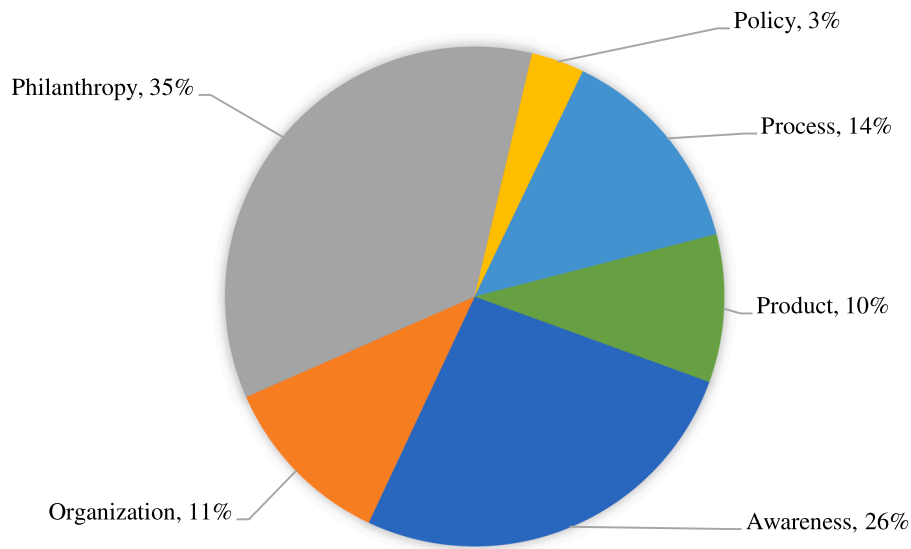
2014	2015	2016	2017	2018	Total
141	153	133	142	131	700

classification criteria for this partner category (e.g. [Hockerts and Wüstenhagen, 2010](#); [Schaltegger and Wagner, 2011](#)), i.e. a for-profit organisation aiming to address environmental or social issues and established for not more than 10 years before the partnership.

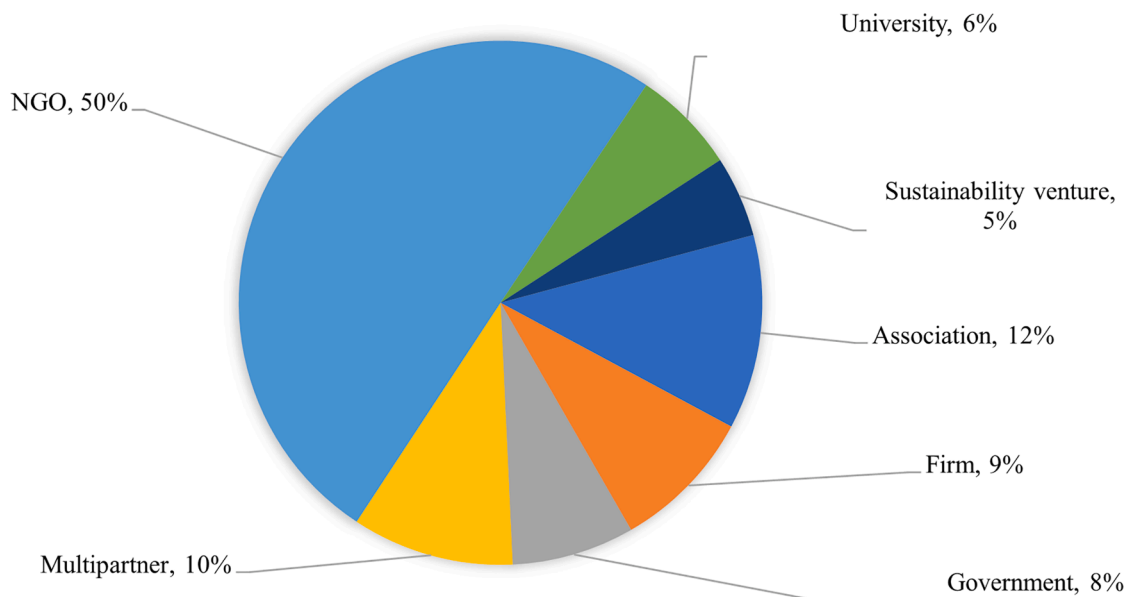
Second, I coded the mechanisms according to the available information regarding each partnership. A partnership mechanism is defined as a tool to facilitate social and environmental change from a cognitive, behavioural and technical perspective ([Stadler and Lin, 2019](#)) and may include the following. *Philanthropy* refers to partnerships based on sponsorship, endorsement and charity, whereas *awareness-raising* involves activities intended to build awareness among a firm's stakeholders through, for example, campaigns, training, or education ([Austin](#)

and [Seitanidi, 2012](#); [Gray and Stites, 2013](#)). *Policy dialogue* refers to creating new policies or modifying existing ones, including regulations ([Stadler and Lin, 2019](#)). Because I used open-ended coding, *organisational adjustment* is included, which refers to changes in a firm's internal organisation, such as recruiting employees with disabilities or improving working conditions. The last two categories refer to firms' engagement with SOI ([Adams et al., 2016](#)). *Process innovation* refers to activities or technologies related to improvements in processes, practices and infrastructure, whereas *product innovation* includes the development of new products or services for the firm.

Finally, I coded each partnership's specific sustainability topics (e.g. healthy eating, child welfare, food waste or clean water), which referred to the specific social or environmental topic the partnership addressed. I consulted external sources, including company websites, press releases and news articles, whenever there was a lack of clarity or insufficient information in the reports. The two stages of the coding process and some illustrative examples are presented in [Appendix A](#).



**Fig. 1.** Distribution of sustainability partnerships: Partnership mechanism



**Fig. 2.** Distribution of sustainability partnerships: Partner type

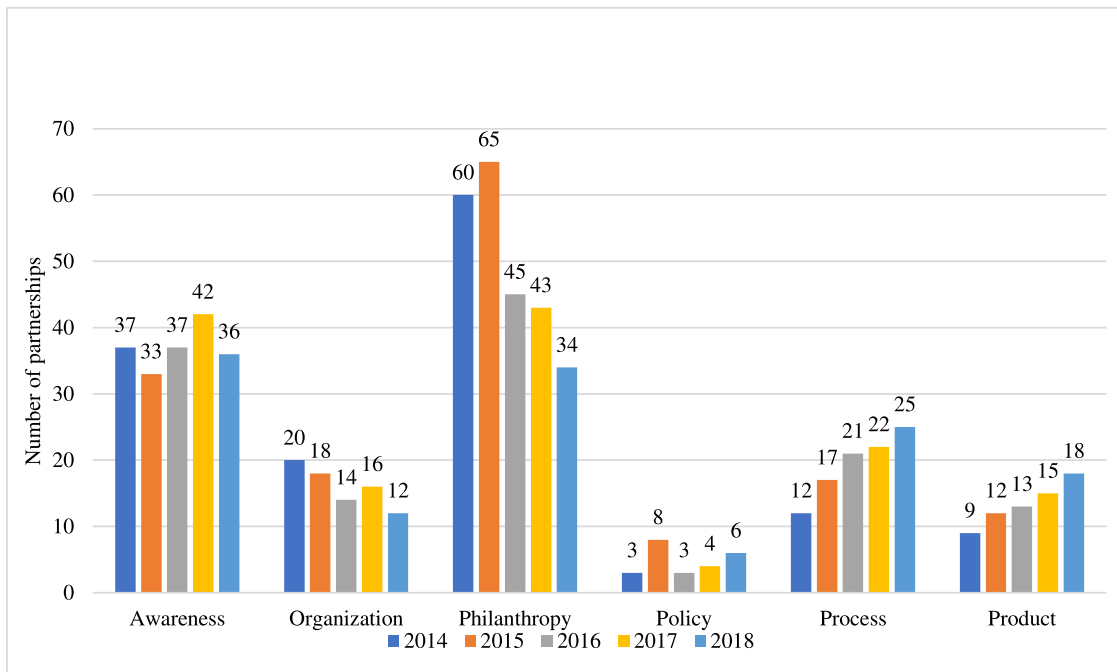


Fig. 3. Development of sustainability partnerships: Partnership mechanism

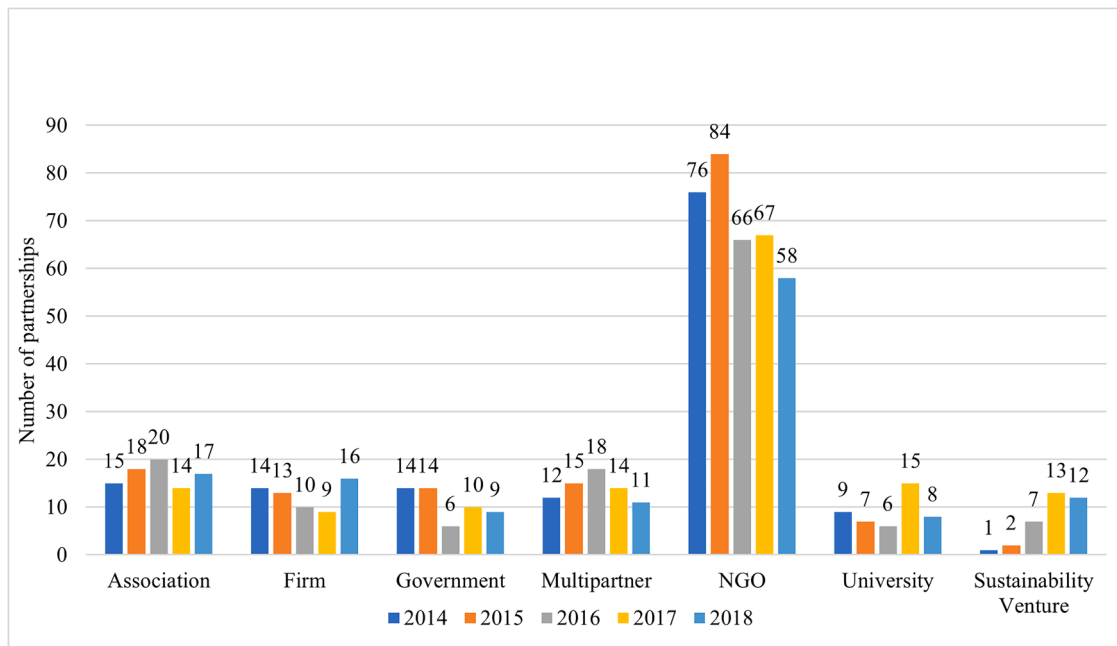


Fig. 4. Development of sustainability partnership: Partner type

4. Data analysis and results

Having created and coded the sustainability partnership database, I first observed that the total number of partnerships mentioned as being part of the firms’ sustainability initiatives was relatively constant over time. As shown in Table 2, based on the sample of 12 food retailers, 700 partnership-year observations were collected from 2014 through 2018.

4.1. Descriptive data

Based on the analysis of the 700 partnerships, six key partnership types were identified, defined by the partnership’s form and stated

mechanism. As shown in Figure 1, these six types and their relative frequency within the full number of partnerships were philanthropy (35%), awareness-raising (26%), policy dialogue (3%), organisational adjustment (11%), process innovation (14%) and product innovation (10%).

In terms of partner category, seven types of partners were identified: NGOs (50%), government agencies (8%), universities and research institutes (45%), associations (12%), multi-stakeholder organisations (i.e. partnerships consisting of more than one partner category; 10%), established firms (6%) and sustainability ventures (5%). Figure 2 illustrates the distribution of the partner categories for the full sample.

**Table 3**  
Test for linear time trend in terms of partnership mechanism and partner type

	Average annual change	SE	Sig.
<b>Partnership mechanism</b>			
Awareness	0.700	1.112	0.574
Organisation	-1.800**	0.503	0.037
Philanthropy	-7.400**	1.876	0.029
Policy	0.200	0.783	0.815
Process	3.100**	0.412	0.005
Product	2.100**	0.191	0.002
<b>Partner type</b>			
Association	0.000	0.872	1.000
Firm	0.000	1.052	1.000
Government	-1.400	0.959	0.241
Multipartner	-0.300	0.985	0.781
NGO	-5.300*	1.999	0.077
Research inst./university	0.600	1.244	0.662
Sustainability Venture	3.300**	0.661	0.015

Note: \* p < 0.1, \*\* p < 0.05. SE denotes estimated standard errors. Sig. denotes the p-value associated with testing the hypothesis that the average annual change is non-zero.

#### 4.2. Data analysis

Following my initial analysis, I examined the data to identify changes over time and conducted a follow-up analysis of emerging patterns derived from those changes.

##### 4.2.1. Development of sustainability partnerships

I began by investigating changes in the mechanism of the sustainability partnerships over time. Figure 3 provides an overview of the different partnership mechanisms from 2014 through 2018. Partnerships for process and product SOI increased, whereas the remaining mechanisms showed limited change.

I next investigated changes in the type of partner over time. Figure 4 shows the number of partnerships for each partner type from 2014 through 2018. Interestingly, although other partner types remained relatively constant or declined, partnerships with sustainability ventures increased from one partnership in 2014 to 12 and 13 partnerships in the final two years of the study period.

To further analyse these trends, I statistically tested the hypothesis of a linear time trend for each category in the identified partnership mechanism and partner type.

As shown in Table 3, the results suggest that the increases in process and product SOI partnerships were statistically significant; that is, the pattern in Figure 3 was not the result of purely random variation. The declines in philanthropic relationships and partnerships oriented towards organisational adjustment were also statistically significant.

**Table 4**  
A frequency table with cross-tabulation of mechanism and partner type of sustainability partnerships

Partner type	Mechanism						Total
	Awareness	Organization	Philanthropy	Policy	Process	Product	
<b>Association</b>	27	12	15	8	5	17	84
% within partner type	32.14	14.29	17.86	9.52	5.95	20.24	100
<b>Firm</b>	14	5	7	0	26	10	62
% within partner type	22.58	8.06	11.29	0.00	41.94	16.13	100
<b>Government</b>	16	22	10	2	2	1	53
% within partner type	30.19	41.51	18.87	3.77	3.77	1.89	100
<b>Multipartner</b>	37	3	6	4	10	10	70
% within partner type	52.86	4.29	8.57	5.71	14.29	14.29	100
<b>NGO</b>	71	22	206	10	28	14	351
% within partner type	20.23	6.27	58.69	2.85	7.98	3.99	100
<b>Research inst./university</b>	19	16	3	0	4	3	45
% within partner type	42.22	35.56	6.67	0.00	8.89	6.67	100
<b>Sustainability venture</b>	1	0	0	0	22	12	35
% within partner type	2.86	0.00	0.00	0.00	62.86	34.29	100
<b>Total</b>	185	80	247	24	97	67	700
% within partner type	26.43	11.43	35.29	3.43	13.86	9.57	100

Table 3 also demonstrates that the NGO and sustainability venture partner categories experienced the greatest change over time. From 2014 to 2018, the number of active sustainability venture partnerships increased by an average of 3.3 each year, whereas the number of NGO partnerships decreased by 5.3 per year. There was little or no change over time for the remaining partner types (government agency, university and research institute, association, multi-stakeholder organisation and established firm).

The linear time-trend analysis of the mechanisms and partner categories of the sustainability partnerships confirmed four trends: 1) an increase in product and process SOI partnerships, 2) a decline in philanthropic and organisational adjustment partnerships, 3) an increase in partnerships with sustainability ventures and 4) a decline in partnerships with NGOs.

##### 4.2.2. Cross-tabulation results of mechanism and partner type of sustainability partnerships

Next, I focused on the emerging patterns identified by the linear time-trend analysis and investigated whether any associations could be inferred. To follow up such findings, I used a cross-tabulation analysis to examine whether the changes in partnership mechanism were associated with the partner type trends, as shown in Table 4.

First, the cross-tabulation results regarding the decline in philanthropic activity and organisational adjustment suggest that most philanthropic partnerships (58.69%) occurred in NGO partnerships, whereas most organisational adjustment partnerships (41.51%) occurred in government agency partnerships. The analysis of partner type trends simultaneously indicated a decline in NGO partners. This pattern suggests that the decline in philanthropic partnerships observed throughout the study may be associated with the parallel decline in NGO partnerships.

Second, the cross-tabulation results regarding the growth of partnerships prioritising process and product innovation indicate that most process and product SOI partnerships (62.86% and 34.29%, respectively) occurred in partnership with sustainability ventures. The analysis of partner type trends found that the number of active partnerships with sustainability ventures increased continuously over time. These results suggest that the increasing occurrence of SOI partnerships may be associated with the parallel increase in sustainability venture partnerships.

##### 4.3. A closer look at SOI and sustainability ventures

Interestingly, these results show an increase in product and process SOI partnerships and a corresponding increase in partnerships with sustainability ventures, an emerging type of partner that has not been

examined in previous studies of sustainability partnerships (e.g. Gray and Stites, 2013; Wassmer et al., 2017; Wassmer et al., 2014). This section further investigates the characteristics of SOI partnerships with sustainability ventures to elaborate on their role as partners to retailers.

#### 4.3.1. SOI partnership with sustainability ventures

In 2014, the first year of the sample period, only one partnership with a sustainability venture was found, between Morrison and Community Shop. Community Shop is a UK-based social enterprise that collects surplus products from large retailers and manufacturers and sells them at highly discounted rates to their members, who are local community members and marginalised families. In the following year, an SOI partnership between Tesco and FoodCloud, an Irish social enterprise that enables businesses to redistribute surplus food to charity organisations through an online platform, was identified.

In 2016, seven SOI partnerships with sustainability ventures were identified. One such partnership was between ICA and Rescued Fruits, a Swedish start-up that produces bottled juice from fruit waste. In the same year, Carrefour initiated partnerships with several food-tech start-ups, providing them with financial assistance or support for pilot tests of their innovative solutions through a dedicated programme of FoodTech incubators. For example, Carrefour entered partnerships with Opti-Miam, an application for geolocating discounted surplus food; Too Good To Go, an application for geolocating unsold food at discounted prices; and FoPo, an organisation that collects nearly expired fruit and vegetables and transforms them into edible powders with longer shelf lives.

The number of such partnerships continued to increase, up to 13 in 2017 and 12 in 2018. In addition to the partnerships already mentioned, ICA and Carrefour stepped into several further partnerships with sustainability ventures. For example, in 2017, ICA collaborated with Urban Oasis, a food-tech start-up, on a joint urban farming project to transform ICA's underground parking area into space to grow ICA's fruit and vegetable products. ICA also began a long-term joint project with Nutrient, a Sweden-based insect protein start-up, to create a circular system by using waste from organic potatoes as food for insects. Another partnership featured Karma, an organisation that provides a similar service to Too Good To Go. ICA started a partnership with Too Good To Go with a pilot stage in two stores.

Other large retailers, such as Casino and Sligro, followed suit. In 2017, Casino collaborated with Phénix and Eqsosphère, two French-based social enterprises specialising in technological solutions for waste recovery and food donation. Also in 2017, Sligro entered a joint venture with Supply chain Information Management (SIM), which assists retailers in implementing transparent and sustainable supply chain management IT solutions. The venture is in the process of B Corps certification, a label the non-profit B Lab grants to businesses that balance mechanism and profit and meet the highest standards of social and environmental performance.

The complete list of partnerships with sustainability ventures, together with descriptions and quotations related to each partnership, can be found in [Appendix B](#).

#### 4.3.2. Scope and topics of SOI partnership with sustainability ventures

Finally, I examined the other characteristics of the partnerships with sustainability ventures to determine whether any further patterns could be identified. Interestingly, 83% of the partnerships with sustainability ventures were focused on reducing food waste. The remaining partnerships were related to topics including sustainable farming, sourcing and health and well-being. The focus on reducing food waste was not limited to sustainability ventures; retailers also entered partnerships related to food waste with various NGOs.

However, there was a clear distinction in how retailers leveraged their partnerships with sustainability ventures and NGOs to reduce food waste. Such a distinction reflects a shift among retailers in their use of partnerships to address food waste issues from relatively passive to more active sustainability engagement. Partnerships with sustainability

ventures focused on SOI engagements. In terms of product-based SOI, retailers collaborated with sustainability ventures to reuse products that would otherwise become waste, as exemplified by Rescued and FoPo. In terms of process-based SOI, retailers collaborated with sustainability ventures to digitalise the redistribution of food products. Such ventures enabled retailers to use digital platforms and geolocation tools to promote nearly expired food products to their consumers at a discount (e.g. Too Good To Go and Karma). Using similar technological solutions, retailers also digitalised the collection and distribution of surplus food donations (e.g. FoodCloud, Phénix, and Eqsosphère).

By contrast, partnerships with NGOs focused on philanthropy through donations and the distribution of surplus food to underprivileged communities (e.g. partnerships with national food banks). Carrefour and Casino also engaged with local NGO partners to initiate food waste awareness campaigns by establishing a food donation collection inviting consumers to support their cause.

## 5. Discussion

My analysis of the sustainability partnerships of European food retailers showed that from 2014 through 2018, the frequency of partnerships supporting philanthropic endeavours declined. During that time, retailers increasingly leveraged their partnerships to engage with product and process SOI activities. Further analysis suggested that such changes corresponded to changes in partner selection. Retailers increasingly allied themselves with sustainability ventures, whereas the frequency of cross-sector partnerships with NGOs declined.

These changes to sustainability partnerships in terms of mechanism and partner types may be understood to reflect changes in the retailers' objectives for their sustainability partnerships. The two mechanisms of philanthropy and SOI represent distinct partnership objectives, where the former characterises a predominantly legitimacy-oriented partnership, and the latter represents a predominantly competence-oriented partnership (Lin and Darnall, 2015; Wassmer et al., 2017). My findings suggest that whereas legitimacy-seeking objectives dominate retailers' early engagement in sustainability partnerships, over time, such retailers increasingly seek to leverage their sustainability partnerships for competence-building objectives.

In the early stage of retailers' engagement with sustainability partnerships, external pressure from stakeholders may constitute the dominant motivation; hence, firms' efforts are focused on legitimacy-seeking activities, such as philanthropy (Lin and Darnall, 2015). With intense scrutiny on firms operating in the agri-food sector, building social legitimacy and environmentally friendly reputations is particularly important for retailers seeking to respond to pressure from and the expectations of their external stakeholders regarding social and environmental challenges (Castelló and Lozano, 2011; Suddaby et al., 2017). To do so, retailers focused on activities that mainly addressed external stakeholders and aimed to alter societal attitudes towards a specific issue through, for example, philanthropy engagement. Philanthropic gestures in the form of sponsorship and donation, such as retailers' partnerships with NGOs to donate surplus food and money to specific beneficiary groups, allow the retailers to gain legitimacy and secure a licence to operate (Austin, 2000; Austin and Seitani, 2012). This result and analysis lead to the first proposition.

**Proposition 1.** Retailers' early engagement in sustainability partnerships is dominated by partnership with legitimacy-seeking objectives, but over time, retailers increasingly adopt partnership with competence-building objectives.

In addition to the reputational benefits of legitimacy-oriented objectives, early partnership engagement with NGOs and various other partners provides retailers with access to their partners' heterogeneous resources and equips them with capabilities to further develop their engagement in sustainability partnerships (Inigo and Albareda, 2019). In particular, increased capabilities in addressing sustainability issues,



managing sustainability partnerships and proactively selecting future sustainability partners (Degener et al., 2018; Watson et al., 2018) allow retailers to engage in competence-oriented partnerships through SOI activities, which typically involve a higher degree of interaction and more complex coordination. As observed in the results, the internal changes required by SOI partnerships related to improving operational efficiency through digitalised distribution (e.g. Tesco with FoodCloud and ICA with Karma) and increasing supply chain transparency (e.g. Sligro with SIM) make integration into retailers' operational activities and overall strategy a necessity (Albort-Morant et al., 2018; Klettner et al., 2014).

Across the identified SOI partnerships, firms select partners that can support them with technological competence and stakeholder engagement in extending the SOI impact (De Marchi, 2012; Goodman et al., 2017). Sustainability ventures offer such organisation-specific capabilities, as exemplified in their partnerships with retailers on food waste. Retailers gain access to the ventures' technological product and process innovation through such competencies as food-drying technology and digital platforms with geolocation tools (De Marchi, 2012; Ménard, 2013). This technology contributes to improving the retailers' value chain by prolonging shelf life and expanding the reach of surplus products, thus extending the retailers' SOI impact to both a wider consumer group and beneficiary groups including new groups of consumers, underserved communities and charity groups (Goodman et al., 2017). In summary, I suggest the following proposition regarding the role of sustainability ventures:

**Proposition 2.** Sustainability ventures perform two critical roles as SOI partners to retailers: a) providing technological competencies and b) extending SOI impact in reaching a broader group of stakeholders.

Among the types of technological competencies offered by sustainability ventures, digital platforms with an embedded geolocation function are prominent (e.g. OptiMiami, FoodCloud, Too Good To Go, and Karma). For such partnerships, the demand for highly specific complementarity among partners is further emphasised. For example, in the partnerships between Carrefour with OptiMiami and ICA with Karma that explicitly mentioned a pilot stage requirement, the retailers relied on iterative trial-and-error interaction with partners to adapt the technology to their own needs (Trott and Simms, 2017). In this regard, retailers benefit not only from shared technological assets but also from access to market opportunities offered by the venture (Tavalaei and Cennamo, 2020). Access to a complementary market allows retailers to optimise the efficiency of their downstream value chain distribution. Therefore, partnering with sustainability ventures complements retailers' extant sustainability initiatives which rely largely on partnership with upstream suppliers' (Pérez-Mesa et al., 2021) sourcing and procuring activities (Chkanikova, 2016; Kotzab et al., 2011).

By tapping into the upstream and downstream parts of the value chain, retailers and their partners play a strategic role in addressing the social and environmental challenges that the agri-food sector currently faces. On the one hand, given their strong influence on both producers and consumers (Kotzab et al., 2011; Lai et al., 2010), retailers may play a leading role in guiding the food value chain to be more socially and environmentally sustainable. On the other hand, given their considerable power to drive changes in the sector (Kor et al., 2017), retailers may also target broader issues in the agri-food sector through several mechanisms, including raising societal awareness and influencing policymakers. As the data show, sustainability partnerships allow retailers to address a wide range of multidimensional issues beyond food waste, such as child welfare, healthy lifestyle, access to clean water, and so on.

I have so far discussed how retailers in the agri-food sector partner with sustainability ventures in various SOI initiatives, which facilitate such retailers in making substantial changes in terms of their products and processes. While the emergence of SOI partnerships may indicate that food retailers are increasingly taking a more active role in tackling specific sustainability issues in the sector, overall observation of the

total partnership over the five-year period shows that philanthropy engagement with NGO partners remains the dominant form of partnership. Solving social and environmental challenges requires that agri-food firms change the way they operate and strategise their business; hence, firms' involvement in SOI initiatives needs to progress further. This observation is summarised in the third proposition and followed by a recommendation for the advancement of SOI in the agri-food sector.

**Proposition 3.** While sustainability ventures are identified as an emerging partner for retailers through their partnership for SOI initiatives, NGOs remain the retailers' most common partner through their partnership for philanthropy activities.

The results of this study suggest that insights may be gained by looking into the issue of food waste, which is where the majority of SOI partnerships have been focused. Food waste reduction efforts started to attract multi-stakeholders' interest across EU countries following the creation of the EU Platform on Food Losses and Food Waste in 2016, the same year the number of SOI partnerships in this study began to rise (European Commission, 2021). During that period, a growing number of countries established legislative frameworks regarding food waste, such as France's Garot Law and Italy's Gadda Law on redistribution of surplus food.. These developments are likely to have stimulated interest in food waste reduction initiatives among retailers and sustainability ventures. Building on such insights, this study calls for regulatory intervention addressing other critical issues in the agri-food sector (e.g. child welfare, healthy lifestyle and access to clean water) to further stimulate new forms of SOI initiatives.

This study contributes to the growing literature on sustainability partnerships by providing insights regarding partnership use and trends through various categories, i.e. partner types, mechanisms and objectives. The results of this study enable the identification of potential partners for specific partnership mechanisms and sustainability objectives. To my knowledge, this is the first empirical study to compile and examine the sustainability partnerships of firms at a sector level using a longitudinal perspective and including both social and environmental dimensions. In so doing, this study extends prior studies that have emphasised individual project-level partnerships and specific sustainability issues (Ashraf et al., 2017; Ashraf et al., 2019; Meschi and Norheim-Hansen, 2018) and provides empirical evidence for the incipient growth of SOI partnerships. The longitudinal perspective offers further insights into the evolution of how firms engage with external organisations in tackling sustainability challenges. This study also addresses a gap in the literature by using a broader sample to study the development and patterns of sustainability partnerships (Gutierrez et al., 2016). By emphasising SOI partnerships, this study sheds light on an emerging type of sustainability partnership that has not been as thoroughly explored as other partnership types.

Further, this study contributes to the literature on collaborative SOI (e.g. Goodman et al., 2017; Juntunen et al., 2019; Watson et al., 2018) in two ways: by identifying sustainability ventures as an emerging SOI partner type for firms and by delineating two complementary capabilities that firms seek from their SOI partners (i.e. providing technological competence and extending the SOI impact). My findings regarding SOI partnerships on food waste further highlight how firms can leverage novel forms of SOI collaboration to solve urgent sustainability challenges. By focusing on the role of retailers, this paper also complements studies on SOI and partnership in the agri-food sector, previously dominated by insights from producers and manufacturers (Dentoni et al., 2016; González-Moreno et al., 2019; Gutierrez et al., 2016).

## 6. Conclusion

This article examined the use of sustainability partnerships by retailers in the European agri-food sector. Specifically, I explored the mechanisms and partner types of sustainability partnerships through a content analysis of retailers' annual sustainability reports from 2014

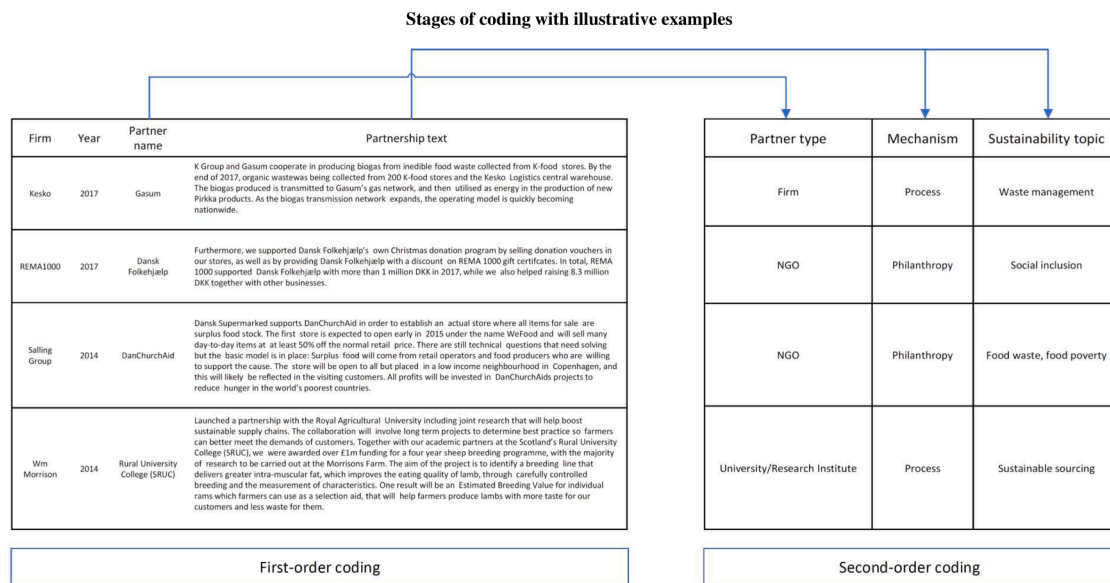


Fig. 5.

through 2018. A trend analysis of the partnership mechanisms suggested that philanthropic partnerships are decreasing while SOI partnerships are increasing. This study further identified sustainability ventures as an emerging type of partner and demonstrated that the number of NGO partnerships is declining over time. These changes in the mechanism and type of sustainability partnerships may also reflect a change in retailers' objectives for their sustainability partnerships. Specifically, they may represent a shift from firms primarily engaging with legitimacy-oriented partnerships to considering greater participation in competence-oriented partnerships.

This study has several implications for firms and potential partners, as it highlights several interconnected trends in retailers' use of sustainability partnerships. First, the study informs firms' managers regarding the selection of the most suitable partner according to their specific sustainability objectives. Second, the study highlights the role of sustainability ventures as potential partners in retailers' sustainability initiatives. My findings support managers of retail firms seeking to leverage SOI partnerships with sustainability ventures to complement retailers' existing sustainability initiatives. Specifically for food retailers, such efforts can complement an existing focus on advancing sustainability on the upstream side of the value chain, which has mainly been dependent on suppliers. Third, my study provides sustainability venture entrepreneurs with insights into the specific complementary capabilities that large retailers seek, should the entrepreneurs seek to position themselves as sustainability partners. Finally, this study offers insights for policymakers seeking to accelerate firms' participation in advancing sustainability and innovation development. As retailers' participation in SOI partnerships with sustainability ventures is still nascent, tax incentives or funding opportunities for such activities may accelerate the adoption of such practices to address sector-specific social or environmental issues, as exemplified in the findings regarding food

waste partnerships.

This research did, however, have several limitations. Retailers' sustainability reports, which were the main source of data for the study, were self-reported. Therefore, they may not have revealed all relevant partnerships, and the significance of some partnerships may have been exaggerated. To mitigate this, I included only claims that referenced a specific partnership and consulted external sources (e.g. company websites, press releases and news articles) when there was a lack of clarity or insufficient information. It is also important to acknowledge that the data used in the study are Eurocentric and based on a single industry, which limits the generalisability of my results. Future research should include data from other countries and industries to validate these findings. This study was exploratory, and the breadth of the analysis may make the results subject to multiple interpretations. The studied issues could be investigated in greater depth by, for example, analysing firm-level partnership portfolios.

**Author statement**

**Andra Riandita:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Writing - original draft, Writing - review & editing.

**Acknowledgements**

This paper was produced as part of the Erasmus Mundus Joint Doctorate Programme on European Doctorate in Industrial Management (EDIM) funded by the European Commission, Erasmus Mundus Action 1. The author would also thank Anders Broström and Tulin Dzhengiz for their helpful comments on earlier version of this paper.

**Supplementary materials**

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.techfore.2022.121681](https://doi.org/10.1016/j.techfore.2022.121681).

**Appendix A**

**Stages of coding with illustrative examples**

## Appendix B

## SOI partnerships with sustainability ventures

No	Year	Firm	Partner	Information	Activity	Topic	Country	SV established*
1	2014	Morrissons	Community Shop	Membership to Community Shop is open to people living in a specific postcode area and in receipt of welfare support. Members get access to heavily discounted food and are offered programmes of tailored support such as return to work guidance and advice. We redistribute products from our food online service to Community Shop that become surplus because of the strict shelf life promise we've made to our online customers.	Process	Food waste, food poverty	UK	2013
2	2015	Tesco	FoodCloud	We have launched a ground-breaking partnership with FoodCloud in Ireland to send all surplus food from our 146 stores to community groups and charities. This partnership involves using FoodCloud's food surplus app, which matches surplus food from our stores with charities and organisations that need it.	Process	Food poverty, food waste	Ireland	2013
3	2015	Morrissons	Community Shop	Food redistribution partners: Where edible surplus is unavoidable within our supply chain we work with our partners Company Shop, Community Shop and His Church to ensure that as much as possible is redistributed. We redistribute products from our food online service to Community Shop that become surplus because of the strict shelf life promise we've made to our online customers.	Process	Food waste, food poverty	UK	2013
4	2016	Carrefour	OptiMiam	The Group stepped up its support for FoodTech incubators, a sector for new, innovative technologies for the food industry. It encourages these start-ups by providing them with financial assistance or support in setting up pilot tests of their innovative solutions. For example, it provided backing to: "OptiMiam", an application that can geolocate discounted surplus food.	Process	Food waste	France	2014
5	2016	Carrefour	Phénix	... For example, "Phénix", a tool for managing unsold foodstuffs.	Process	Food waste	France	2102
6	2016	Carrefour	Too Good To Go	... For example, it provided backing to: "Too Good To Go", an application that can geolocate unsold food at discounted prices.	Process	Food waste	Denmark	2016
7	2016	Carrefour	FoPo	... For example, it provided backing to: "FoPo", which collects fruit and vegetables at the end of their shelf life and transforms them into edible powders with longer shelf lives.	Product	Food waste	Germany	2015
8	2016	Casino	Phénix	It's hard to organise the collection of unsold fresh products store by store in an urban setting. That's why we've developed a seamless logistics process in partnership with Phénix, a socially engaged company that connects stores with neighbourhood charities and finds service providers to transport products with short expiry dates by electric delivery tricycle every morning. The equivalent of more than 250,000 meals made with fresh produce have been donated to some 60 charity organisations in the Paris region since the project's launch in early 2016. This is another example of how we've created a sustainable development model.	Process	Food poverty, food waste	France	2014
9	2016	ICA	Rescued Fruits	During the quarter ICA Sweden initiated a collaboration with the company Rescued Fruits AB, where fruit from ICA's warehouses that would otherwise be discarded will instead be used to make fruit drinks and marmalade. The products are available in ICA stores nationwide starting in March. Initially fruit from ICA's warehouses will be used, but ICA is also looking into the possibility of rescuing fruit from stores as well.	Product	Food waste	Sweden	2014
10	2016	ICA	Kivra	During the quarter ICA Bank and ICA Insurance began cooperating with the Kivra digital mailbox service. Under the cooperation, customers of ICA Bank and ICA Insurance who register with Kivra receive statements and invoices sent to their digital mailbox with Kivra instead of in paper form.	Process	Zero paper waste	Sweden	2011
11	2017	Carrefour	OptiMiam	The Group continued its support for start-ups in the FoodTech sector, working on innovative new technologies for the food industry. Encouragement takes the form of financial assistance or support in setting up pilot tests for innovative solutions. For example, Carrefour continued its support for: the OptiMiam® application, which geolocates discounted surplus food.	Process	Food waste	France	2014

(continued on next page)

(continued)

No	Year	Firm	Partner	Information	Activity	Topic	Country	SV established*
12	2017	Carrefour	Phénix	... For example, Carrefour continued its support for: the Phénix® system, used for managing unsold foodstuffs.	Process	Food waste	France	2014
13	2017	Carrefour	Too Good To Go	... For example, Carrefour continued its support for: The Too Good To Go® application, which geolocates unsold food at discounted prices.	Process	Food waste	Denmark	2016
14	2017	Carrefour	FoPo	... For example, Carrefour continued its support for: FoPo®, which collects fruit and vegetables at the end of their shelf life and transforms them into edible powders with longer shelf lives.	Product	Food waste	Germany	2015
15	2017	Carrefour	Élixir Saveurs Solidaires	It also helped the Élixir organisation to acquire a solidarity canning plant to transform unsold food products. The plant employs 21 disabled people.	Product	Inclusive workplace, food waste	France	2016
16	2017	Casino	Phénix	The banners team up with organisations working to support the solidarity economy, such as Phénix for Franprix and Eqosphère for Leader Price, which collect products with short expiry dates to donate them to local charity organisations. Banners are also improving their processes to limit breakage and regularly educate employees and customers about waste.	Process	Food poverty, food waste, recycling	France	2014
17	2017	Casino	Eqosphère	The banners team up with organisations working to support the solidarity economy, such as Phénix for Franprix and Eqosphère for Leader Price, which collect products with short expiry dates to donate them to local charity organisations. Banners are also improving their processes to limit breakage and regularly educate employees and customers about waste.	Process	Food poverty, food waste, recycling	France	2012
18	2017	ICA	Rescued Fruits	In 2017 the collaboration between ICA Sweden and Rescued Fruits was one of the finalists for the Nordic Council Environment Prize. ICA Sweden and its partner Rescued Fruits have been chosen as a finalist in the Nordic Council's Environment Prize for their work on using fruit that would otherwise have gone to waste. Leftover fruit from ICA stores and warehouses is being rescued and made into fruit drink sold under ICA's own brand. Through this partnership a significant volume of fruit is being processed that would otherwise have been wasted. Since the launch in spring 2016 more than 33,000 kg of fruit has been rescued from ICA's stores and warehouses and has instead been used to produce more than 54,000 bottles of fruit drink.	Product	Food waste	Sweden	2014
19	2017	ICA	Karma	In addition, ICA Sweden was first grocery retailer to sign an agreement with Karma, which offers an app for the sale of food products that are nearing their "best before" date or would otherwise be difficult to sell, at very favourable prices. A pilot project is being started between Karma and two ICA retailers in the Stockholm area – ICA Nära Sveavägen and ICA Kvantum Liljeholmen.	Process	Food waste	Sweden	2016
20	2017	ICA	Nutrient	In partnership with the Swedish food-tech company Nutrient, ICA Sweden has created a circular system based on insects. ICA will use waste from its production of organic potatoes as food for insects. Through a legislative change that took effect on 1 July 2017, such insects may be used as fish feed, for instance for Arctic char sold under ICA's private label. Using insects instead of other fish as feed dramatically relieves the burden on the world's oceans. Moreover, the insects used are rich in omega 3 and 6.	Product	Food waste	Sweden	2017
21	2017	ICA	Urban Oasis	In partnership with the food-tech company Urban Oasis, ICA Sweden has started a project focusing on resource-efficient urban vegetable growing. ICA Kvantum Liljeholmen will be the first ICA store to sell local, hydroponically grown fresh vegetables year-round. The first products will be available in stores in early 2018.	Product	Sustainable farming	Sweden	2017
22	2017	Sligro	SIM (Supply Chain Information Management)	To keep our customers informed of a product's correct sustainability claims, in 2017, we launched a joint venture with SIM (Supply Chain Information Management). SIM monitors and guarantees all own branded goods with a sustainable quality label (belonging to the quality label selection as explained). Parallel to this, in 2018 we are launching a large-scale campaign for all our suppliers with the aim of identifying the certified products we recognise.	Process	Supply chain transparency	Netherland	2008
23	2017	Morrissons	Community Shop	Over 3.4 million products redistributed from stores since 2016, over 140,000 meals redistributed to FareShare	Process	Food waste, food poverty	UK	2013

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(continued)

No	Year	Firm	Partner	Information	Activity	Topic	Country	SV established*
24	2018	Carrefour	Élixir Saveurs Solidaires	through our manufacturing sites as well as 1,599 tonnes through Company Shop and Community Shop. Carrefour supports innovation on food waste avoidance from start-ups. Working to full-loop principles, Carrefour France partnered the start-ups Élixir Saveurs Solidaires, J'aime Boc'oh and Sandrine Saveur on second-life solutions for unsold fruit and vegetables, in the form of compotes, smoothies, purées, soups, jams, etc. for subsequent sale in stores.	Product	Food waste	France	2016
25	2018	Carrefour	J'aime Boc'oh	Carrefour supports innovation on food waste avoidance from start-ups. Working to full-loop principles, Carrefour France partnered the start-ups Élixir Saveurs Solidaires, J'aime Boc'oh and Sandrine Saveur on second-life solutions for unsold fruit and vegetables, in the form of compotes, smoothies, purées, soups, jams, etc. for subsequent sale in stores.	Product	Food waste	France	2016
26	2018	Carrefour	Too Good To Go	In the area of food waste: Carrefour has teamed up with Too Good To Go, a start-up that encourages brands and retailers to revise the semantics used for minimum durability dates.	Process	Food waste	Denmark	2016
27	2018	Carrefour	Phénix	Carrefour has since rolled out Phénix's solution to 55 Carrefour Market stores and around 20 or so convenience stores. A win-win partnership for both partners. For the start-up, this partnership generates 20% of its turnover and has enabled it to create 15 jobs. For Carrefour, the solution is in line with its drive to tackle food wastage, while at the same time reducing the costs involved in processing waste by 40%.	Process	Food poverty, food waste, recycling	France	2014
28	2018	Casino	Phénix	Partnerships with organisations active in the social and solidarity economy, such as Phénix (Franprix, Casino Supermarkets) and Eqosphère (Leader Price) when products have short remaining shelf lives.	Process	Food poverty, food waste, recycling	France	2014
29	2018	Casino	Eqosphère	Partnerships with organisations active in the social and solidarity economy, such as Phénix (Franprix, Casino Supermarkets) and Eqosphère (Leader Price) when products have short remaining shelf lives.	Process	Food poverty, food waste, recycling	France	2012
30	2018	ICA	Karma	Partnerships e.g. with <i>Food-2change</i> and Karma to make use of short-dated food.	Process	Food waste	Sweden	2016
31	2018	ICA	Rescued Fruits	Circular cooperation with Rescued Fruits and Nutrient.	Product	Food waste	Sweden	2014
32	2018	ICA	Nutrient	Circular cooperation with Rescued Fruits and Nutrient.	Product	Food waste	Sweden	2017
33	2018	ICA	Urban Oasis	ICA unique collaboration with Urban Oasis that grows vegetables in a sustainable way without soil in underground premises. This urban cultivation takes place in a former parking garage in Liljeholmen, south of Stockholm.	Product	Sustainable farming	Sweden	2017
34	2018	Sligro	SIM (Supply Chain Information Management)	To keep our customers informed of a product's correct sustainability claims, in 2017, we launched a joint venture with SIM (Supply Chain Information Management). SIM monitors and guarantees all own branded goods with a sustainable quality label (belonging to the quality label selection as explained). To optimise the registration of the labels in our systems, a large-scale information request process was carried out at suppliers in 2018. The focus was on relevant own brands and product groups. A total of 380 suppliers were asked to check the status of the quality label registration in our systems, and to make changes and additions where necessary. This involved more than 19,000 items. The result is a net increase of 700 items with a quality label, together accounting for annual net sales of €26 million.	Process	Supply chain transparency	Netherland	2008

\*SV established refers to the year of establishment for the sustainability venture (SV) involved in the respective partnership.

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