

## RESEARCH ARTICLE OPEN ACCESS

# Sustainable Business Model Innovation and Firm's Performance: A Multiple Case Study in the Agri-Food Industry

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**Received:** 31 July 2025 | **Revised:** 3 February 2026 | **Accepted:** 10 February 2026

**Keywords:** agri-food industry | multiple case study | performance | sustainable business model | triple bottom line

## ABSTRACT

This research investigates how sustainability-oriented initiatives aimed at innovating a firm's business model can lead to different economic, social and environmental performance configurations, with the objective of identifying the determinants that explain these differences. We carried out a multiple case study, selecting firms based on the sustainability of their initiatives and their common membership of the agri-food industry. Our findings reveal the existence of different triple bottom line performance configurations, characterized by both commonalities and differences explained by two determinants: "main stakeholders' involvement dynamics" and "governance of value creation and distribution." The interaction between these two determinants leads to the identification of two distinct patterns: a "supplier lock-in purpose model" and a "family-governed continuity model" where different triple bottom line dimensions are prioritized. This study contributes to the literature on sustainable business model innovation and its related performance outcomes, and it offers important practical implications for managers and policymakers.

## 1 | Introduction

In recent years, sustainability has become pivotal to business model (BM) innovation (Bocken and Geradts 2020; Geissdoerfer et al. 2018; Lüdeke-Freund and Dembek 2017) and a growing number of companies have been committed to adopting sustainable practices and initiatives that not only generate profit but also increase people's well-being and the health of the planet (Baldassarre et al. 2017). This process stems from a thorough rethinking of businesses' role, as they face increasing pressure to meet the expectations of a variety of stakeholders (Pedersen et al. 2025) and contribute to sustainable development by integrating the three pillars of sustainability into their BMs (Bansal 2005; Elkington 2013).

This phenomenon has fueled a broad and rapidly growing stream of studies on sustainable BM innovation. Numerous

scholars have investigated the processes, frameworks and enabling conditions that allow companies to innovate their BMs in a sustainable way. In particular, the literature has helped to identify archetypes of sustainable BMs (Bocken et al. 2014; Stutz et al. 2025), implementation strategies and organizational and contextual factors that can favor the transition toward more responsible and long-term forms of value creation (Geissdoerfer et al. 2018).

In this regard, several scholars have provided evidence that sustainability may represent not only a constraint but also a strategic lever capable of generating economic benefits, for example, through new revenue streams, market opportunities, cost savings, efficiency improvements or strengthening competitive positioning (Bocken et al. 2014; Schaltegger et al. 2012). However, the analyses conducted to date have a significant limitation. Most studies have adopted an economic

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and financial perspective of performance, analyzing how sustainable BM innovation initiatives can affect a company's economic results (Al-Tuwaijri et al. 2004; Evans et al. 2017; Lüdeke-Freund and Dembek 2017; Albertini 2013; Jabbour et al. 2013). On the contrary, little attention has been paid to the impact of such innovations on the overall configuration of the triple bottom line, that is, how the economic, environmental and social dimensions can combine, reinforce each other or come into tension as a result of the sustainable-oriented initiatives introduced in the BM.

Theoretical analyses and empirical investigations on this topic suggest that the relationship between sustainable BM innovation and performance is neither linear nor automatically virtuous and not all sustainable BMs perform well across all three pillars of sustainability (Figge and Hahn 2021; Ozanne et al. 2016; Stubbs 2019; Alonso-Martinez et al. 2021). Imbalances, trade-offs and tensions may arise between the economic, environmental and social dimensions, with the result that specific forms of value may prevail over others in corporate performance. This evidence calls into question the idea of “win-win” sustainability and suggests the need to adopt a more articulated and contextualized perspective.

Despite this, how these performance configurations are generated and what mechanisms determine how they appear is still unclear. In particular, the literature has not yet fully addressed two fundamental questions: (i) how sustainability-oriented BM innovation initiatives may result in different triple bottom line configurations; (ii) what reasons drive companies toward a specific configuration of relationships between economic, environmental and social performance.

With this gap in mind, this study aims to analyze the relationship between sustainable BM innovation and the triple bottom line configuration, arguing that understanding the logic underlying these configurations is essential for advancing theoretical knowledge on the link between sustainable BM innovation and performance. In particular, the research is guided by the following research questions:

**RQ1.** *How can sustainable business model innovation initiatives lead to different configurations of companies' economic, environmental, and social performance?*

**RQ2.** *What determinants explain the different triple bottom line configurations resulting from sustainability-oriented business model innovation?*

To answer these questions, this study proposes a multiple case study and investigates four Italian companies operating in the agri-food sector. The focus on the agri-food sector is particularly appropriate for our research, since it is highly sensitive to sustainability issues (Testa et al. 2022; Davis et al. 2023; Contzen et al. 2025). The aim of the paper is to examine how the adoption of sustainable BM innovation initiatives has impacted their triple bottom line and understand the reasons behind these configurations. Data collection has been based on primary and secondary sources, in particular semi-structured interviews, site visits, corporate events, and external and internal documentation. Available data were subjected to thematic analysis,

conducted using an inductive approach and following the six steps described by Braun and Clarke (2006).

Findings reveal four different possible configurations of the triple bottom line resulting from alternative ways of prioritizing and combining value creation and distribution across the three pillars of sustainability. The main factors explaining these different configurations of the triple bottom line are *main stakeholders' engagement dynamics* and *the governance of value creation and distribution*. Cross-comparison of the cases shows that similar configurations of the triple bottom line emerge under comparable conditions in terms of stakeholder engagement and governance of value creation and distribution. This allowed us to identify two main recurring patterns across the cases: a supplier lock-in model, featuring a focus on environmental and social objectives, with economic performance serving as a minimum supporting condition; and a family-governed continuity model where the owning family exerts primary control over value creation and redistribution and sustainability-oriented innovation is mainly leveraged to support economic continuity and transgenerational objectives, while social and environmental initiatives are selectively integrated into core value drivers.

These findings contribute to the literature on sustainable BM innovation by shifting the focus from a predominantly economic-centric view of performance to an integrated and contextual perspective, capable of capturing the interdependencies, tensions, and governance logics that characterize sustainability-oriented BM innovation. This paper further advances family firms research by highlighting how sustainability-oriented BM innovation is selectively leveraged to preserve socio-emotional wealth, resulting in distinct triple bottom line performance configurations. Finally, we contribute to the literature in the agri-food sector by showing how sustainability-oriented BM innovation depends on collaborative patterns to overcome power imbalance within the supply chain.

The paper is organized as follows: Section 2 is for the theoretical framework; Section 3 presents the methodology adopted; Section 4 shows the main findings; Section 5 concludes by discussing the paper's contributions.

## 2 | Theoretical Framework

### 2.1 | Sustainable BM Innovation and Triple Bottom Line Performance

In business literature, there is broad consensus that BM innovation serves as a crucial tool for improving corporate performance (Bashir and Verma 2019; Clauss 2017; Dunford et al. 2010; Foss and Saebi 2017; Zott et al. 2011) and competitiveness in an ever-changing economic environment (Al-Debei and Avison 2010; Chesbrough 2010; Cucculelli and Bettinelli 2015; Massa and Tucci 2013). There are many ways in which BMs can be innovated. According to Amit and Zott (2012), BM innovation can come from a mix of new activities, changes to existing ones, or changes in the people who perform them. Previous research confirms that there are different types of BM innovation: modular, architectural, radical, and incremental (Foss and Saebi 2017) and—in line with the process theory (de Van Ven 1992)—BM

innovation (Ancillai et al. 2023; Bashir et al. 2020; Foss and Saebi 2017) does not only refer to disruptive shift but represents a constant process of change (Andreini et al. 2022; Bucherer et al. 2012) which creates novel value (Aspara et al. 2010) through incremental innovations that, while maintaining the continuity of the existing BM, bring about significant changes in terms of processes, resources, or value offered to the market. This flexibility implies that there is no single path to innovation that applies to all companies; rather, BM innovation is a semi-structured process of activities that each company shapes according to its own specific characteristics and strategic needs (Wirtz and Daiser 2018). Mitchell and Coles (2003) explicitly refer to a “continuing BM innovation,” meaning “an ongoing process of developing and installing BM improvements, replacements and innovations.” Several studies have highlighted how this process positively influences competitiveness, strategic flexibility, and the ability to achieve a sustainable competitive advantage (Bashir and Verma 2019). According to Aspara et al. (2010), companies that attach strategic importance to BM innovation tend to record above-average profit growth rates, suggesting that BM innovation is correlated with favorable economic performance.

In recent years, the discussion on BM innovation has gradually shifted toward sustainability (Bocken et al. 2014; Bocken and Geradts 2020; Filser et al. 2021; Geissdoerfer et al. 2018; Pieroni et al. 2019; Ritala et al. 2021), a goal that is becoming increasingly central to corporate strategies.

Companies are increasingly urged to rethink their value proposition and seek new ways to create, distribute and capture value (Osterwalder et al. 2005) in order to meet the growing expectations of a variety of stakeholders (Bocken et al. 2014; Geissdoerfer et al. 2018; Lüdeke-Freund 2010) aiming not only to optimize profits, but also to improve the well-being of the community and the environment (Bocken et al. 2014; Filser et al. 2021; Morioka and de Carvalho 2016; Pregonella and Battistella 2021). As Lozano (2018) points out, the transition to a “more sustainable BM” through the introduction of fundamental sustainable initiatives is important both for companies that already have a sustainable BM and intend to update and improve it, and for companies that need to completely rethink their role in society and create and implement a totally new sustainable BM.

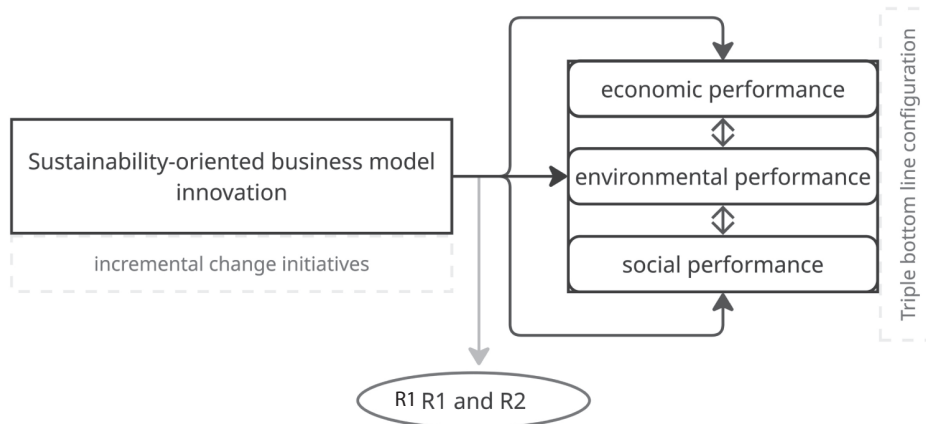
This push toward sustainability has also raised crucial questions regarding the measurement and evaluation of corporate performance. Several studies suggest that integrating sustainability initiatives into BMs improves companies' economic and financial performance (Al-Tuwajri et al. 2004; Evans et al. 2017; Lüdeke-Freund and Dembek 2017) both with specific reference to the environmental initiatives (Albertini 2013) and to the social ones (Ullmann 1985).

This effect could result from cost savings, as a consequence of greater energy efficiency and improvements of operational performance such as reduction of production costs (Jabbour et al. 2013). Sustainability can also generate new revenue streams due to the ability to attract new customers, particularly those who are more environmentally conscious and sustainability-oriented. Other authors have highlighted the ability of sustainability-oriented companies to benefit from

better risk management, enhanced reputation and a lower likelihood of incurring environmental or legal liabilities. Conversely, have argued that environmentally-oriented initiatives generate increased costs, which in turn are reflected in reduced earnings and market value for the company. In an attempt to provide a comprehensive picture, Rahi et al. (2024) suggest that sustainability positively affects financial performance, but with a time lag. This result depends not only on internal company actions, but is shaped, transformed and modified by multiple actors in the macroeconomic context. Despite the growing interest in this topic, results are still contradictory and lack clear conclusions.

Another problem stems from the fact that analyses carried out on this issue to date have mainly focused on financial performance (profits), while the other two pillars of sustainability (planet and people) have been given less attention. A first difficulty lies in measuring social and environmental impact, which is inherently more complex to quantify and evaluate than assessing the economic returns generated by innovation initiatives (Dentchev et al. 2018). This makes it difficult for companies and researchers to gain a clear picture of the effectiveness of the sustainability strategies implemented. However, the main problem encountered when analyzing the impact of BM innovation's sustainability initiatives on business results concerns the relationship between the three pillars of sustainability: economic, social, and environmental (Massa et al. 2017; Pieroni et al. 2019). Not all companies manage to achieve high performance in all three dimensions of the triple bottom line (Boons and Lüdeke-Freund 2013), and imbalances between these dimensions can frequently occur due to the difficulty of reconciling economic objectives with social and environmental ones (Figge and Hahn 2021; Ozanne et al. 2016; Stubbs 2019). In this respect, the empirical analysis carried out by Alonso-Martinez et al. (2021) found no sustainable BM able to balance economic, social, and environmental performance. Effectively balancing economic, social, and environmental dimensions is therefore one of the main challenges for companies that decide to adopt a sustainable approach. This is particularly true in contexts where stakeholder management is complex and where tensions between the various actors involved can hinder the effective implementation of sustainable BMs (Kleine and von Hauff 2009). Difficulties associated with managing these tensions are amplified when considering an ecosystem-level approach, as in the case of companies collaborating with other actors to develop sustainable solutions (Oskam et al. 2021). In these contexts, companies must address the issue of managing conflicts between stakeholders, who may have conflicting objectives, and the challenges associated with creating and capturing value. Power imbalances among stakeholders, with some exerting strong influence over corporate decisions, can undermine the balance between the pillars of sustainability.

In summary, although the topic of sustainability-oriented BM innovation is attracting the interest of a growing number of scholars, understanding of its implications for corporate performance is still incomplete and largely fragmented. The interdependence between triple bottom line components and the need to manage these conflicts would require a more integrated and holistic approach to assessing the impact of sustainable BM innovation initiatives on corporate performance,



**FIGURE 1** | Sustainable business model innovation and triple bottom line performance.

which is currently lacking in most studies. However, exploration of the interrelationships between the pillars of sustainability and the mechanisms that influence the balance of these factors is still in its early stages, as existing research tends to address economic, social, and environmental dimensions separately, with no effort to thoroughly investigate the dynamics, interdependencies, and mutual influences that, following the introduction of sustainable initiatives, affect the configuration of the triple bottom line. This approach hinders understanding of the overall effect that sustainability initiatives can have on business performance (Figure 1), both in the short and long term. This lack of knowledge and awareness can deter companies from investing in making their BMs more sustainable, given the difficulty in predicting the future impact of such initiatives. Therefore, there is a need to further investigate the impact of BM innovation's sustainability-oriented initiatives on company performance and the drivers that can lead to different triple bottom line configurations.

Adopting an approach that considers sustainability in all its complexity appears crucial, as this would provide insight into how economic, social, and environmental aspects interact and how they influence each other's overall performance. Understanding the logic behind these configurations is a fundamental step toward advancing theoretical knowledge on the link between sustainable BM innovation and performance, overcoming a reductive and one-dimensional view and adopting a truly integrated perspective on the triple bottom line.

## 2.2 | Sustainable BM Within the Agri-Food Sector

The need for a more holistic approach to examine how sustainable BM innovation shapes different configurations of economic, environmental, and social performance and the determinants behind them is especially crucial in the agri-food sector, where balancing the triple bottom line is particularly complex due to several characteristics that distinguish it from many other industries and deep interdependencies between firms' viability, ecosystems, and community wellbeing. The agri-food sector is predominantly characterized by small and medium-sized firms, often family-owned, deeply rooted in their communities that operate with a stewardship mindset, prioritizing long-term goals

over immediate financial growth (Gómez-Mejía et al. 2007; Diaz-Moriana et al. 2022; Herrero et al. 2024). These firms must navigate complex supply chain structures marked by significant power imbalances, where small-scale producers face concentrated retail power, while maintaining a rigorous link between production processes and product safety (Barth et al. 2021). These peculiarities necessitate BMs that are adaptive, resilient, and capable of managing inherent variability while maintaining sustainability commitments (Barth et al. 2021). In this context, the transition toward sustainability is rarely an isolated corporate effort; rather, it emerges from an ecosystemic dynamic involving farmers, suppliers, local communities, and consumers (Krasnokutskaya et al. 2025). Thus, the difficulty of reconciling triple bottom line dimensions is amplified here by the fragmented nature of the supply chain and the critical role of several stakeholders.

The agri-food sector is facing unprecedented challenges stemming from climate change and environmental concerns, resource scarcity and high input costs, increasing demands from a growing global population and new consumer purchasing and consumption habits (Donner and De Vries 2023; Miranda et al. 2023). At the same time, the agri-food sector has been widely recognized as unsustainable due to its significant environmental impacts and severe negative externalities, including greenhouse gas emissions, large-scale biodiversity loss, and water scarcity (Testa et al. 2022). In addition, the sector is affected by major social challenges, such as low pay, insecure jobs, migrant exploitation, gender gaps, value chain issues and equity (Davis et al. 2023; Contzen et al. 2025).

In this landscape, sustainability-oriented initiatives should be geared toward unique BM structures capable of addressing the sector's peculiar environmental and social issues while simultaneously fostering robust economic performance. Thus, the transition toward sustainable BMs represents a paradigmatic shift from traditional frameworks, primarily focused on mass production, operational efficiency and cost reduction, toward holistic strategies that integrate environmental and social objectives into the core of value creation creating benefits for a wide range of stakeholders (Miranda et al. 2023). Mehrabi et al. (2022) identify diverse agri-food sustainable BMs including, among others, community supported agriculture, alternative agri-food

networks, solidarity purchasing groups, sustainable collective innovation model and short food supply chains. They represent examples of how sustainability-oriented initiatives in the agri-food industry can redefine the relationship between production and consumption by prioritizing local economic development and the redistribution of risks and benefits through ethical partnerships, shortened supply chains, and transparent value-sharing mechanisms.

This evolution is largely driven by sustainability-oriented innovation that embeds ethical, social, and ecological criteria across products, processes, and organizational practices (Testa et al. 2022). In the agri-food sector, such innovation extends beyond incremental improvements and often requires BM reconfiguration to generate systemic impact, emphasizing collective action, stakeholder collaboration, and the redefinition of value propositions as drivers of long-term resilience.

Consistently, Krasnokutska et al. (2025) highlight that the complexity of sustainability challenges in the agri-food sector frequently exceeds the capabilities of individual firms, making collaboration with value chain partners and broader innovation ecosystems essential. Sustainable BMs increasingly rely on open and collaborative governance arrangements, shifting from transactional relationships toward trust-based partnerships with key stakeholders. This collaborative approach enables firms—particularly small and medium-sized enterprises—to share risks, access external knowledge, respond to regulatory and societal pressures, and enhance legitimacy through shared value creation.

The integration of these perspectives suggests that a successful agri-food sustainable BM redefines value capture not as the maximization of short-term profit, but as a collective endeavor that fosters innovation, enhances collaboration, ensures a co-creation value, and balances economic viability with stakeholders' expectations (Testa et al. 2022; Miranda et al. 2023; Krasnokutska et al. 2025). However, despite the advancements in defining sustainable BMs and sustainability-oriented innovation within the agri-food sector, several critical gaps remain unresolved in current literature. Firstly, the extant research on sustainability-oriented innovation in the agri-food sector tends to overlook the social dimension or to address environmental and social issues in isolation, neglecting the complex interdependencies and mutual influences that affect the whole configuration of the triple bottom line (Testa et al. 2022). Similarly, Miranda et al. (2023) emphasize that a significant portion of studies on agri-food sustainable BMs fail to provide an integrated view of sustainability. There is a persistent lack of empirical evidence on how firms successfully balance the often-conflicting economic, social, and environmental dimensions, leading to contradictory results regarding the actual impact of sustainable initiatives on long-term corporate performance. Furthermore, while the importance of ecosystem-level collaboration is widely acknowledged, Krasnokutska et al. (2025) highlight that the benefits and outcomes of collaborations remain a promising research field and call for in-depth observational studies to explain decisions related to actors' collaborations with particular attention to small and medium enterprises and the role of suppliers. This study aims to address these gaps by shifting the focus from a fragmented view toward a holistic analysis of how sustainable

BM innovation initiatives shape different triple bottom line configurations and the logic behind these configurations.

### 3 | Methods

#### 3.1 | Research Design

This research employs a qualitative approach which allowed us to appreciate how the implementation of sustainable BM initiatives leads to different configurations of the economic, environmental, and social performance, as well as to uncover the key determinants explaining the emergence of these distinct triple bottom line configurations. We applied a multiple case study approach (Eisenhardt and Graebner 2007) involving four companies, which is a number considered appropriate by previous research (K. M. Eisenhardt 1989).

Among purposeful strategies to select cases, criterion sampling was employed to choose “information-rich cases for study in-depth” (Patton 1990, 169). The logic of this strategy is to investigate cases that meet some predetermined criterion of importance consistent with the research questions. To this purpose, we identified a set of threshold criteria that guided case inclusion and led to the exclusion of otherwise accessible firms:

1. Engagement in sustainability: consistent with the research questions, firms had to have initiated or be actively engaged in a sustainability trajectory, with concrete sustainability initiatives already in place;
2. Industry homogeneity: firms had to operate within the same industry;
3. Firm size homogeneity: firms had to be of the same size;
4. Institutional context: firms had to be located in the same geo-political context and therefore be subjected to comparable institutional and regulatory pressures.

This case selection strategy follows the “common antecedents” research design described by K. M. Eisenhardt (2021), which involves selecting cases that ensure the presence of the focal phenomenon (i.e., engagement in sustainability) and share antecedents' conditions (i.e., same industry, size, institutional context) to investigate what really explain the outcome of interest (i.e., the triple bottom line configuration). Holding these antecedent conditions constant allows us to reduce extraneous variation (K. M. Eisenhardt 1989) associated with factors that are already widely recognized in the literature to shape sustainability behavior of firms, such as sector (Bansal and Roth 2000; Inigo and Albareda 2019), size (Drempetic et al. 2020; Gallo and Christensen 2011) and institutional context (Bansal and Roth 2000; Ortiz-de-Mandojana et al. 2016). In other words, this case selection design strengthens internal validity by enabling the investigation of the determinants of triple bottom line configurations while minimizing the influence of exogenous and contextual factors to provide the transferability and testability of our findings beyond this empirical setting.

Prior to the application of the specified selection criteria, case eligibility was further restricted to firms for which access to a

wide range of data sources was available. This preliminary condition was essential to the overall quality of the study.

### 3.2 | Empirical Setting

The empirical research was conducted in Italy. We decided to focus on the agri-food industry because, with regard to social and environmental sustainability issues, this sector has received increasing attention internationally (Cortese et al. 2021), both from policymakers (e.g., in the Agenda 2030 adopted by all United Nations Member States in 2015 and in the Green Deal launched by the European Union in 2019), and consumers, who are increasingly aware of the sustainability of products and production processes, as well as the ethical behavior of companies (Van Bussel et al. 2022). The agri-food sector is central to the Italian economy, and Italy remains in ninth place worldwide in the ranking of agri-food exporters (RRN 2023). Selected cases are medium-sized businesses, all located in Central Italy and involved in the agri-food sector. Table 1 provides an overview of the cases.

### 3.3 | Data Collection

We collected data both through primary and secondary sources (Yin 2009): semi-structured interviews, on-site visits, company events, external and internal documentation (e.g., sustainability reports, financial statements, communications to the staff) and physical artifacts (such as for example packaging which contains important information on the label). However, the main source was interviews (see Appendix S1), which first involved the companies' top leaders and other top-level executives, in a second phase, were expanded to some other key positions in the company (identified through the application of the snowball technique). The interviews were conducted in different periods between 2020 and 2023, also to monitor the evolution of the BM over time. Field notes were taken during the interviews, which were also considered part of the empirical material. A total of 38 interviews were carried out, distributed across the four companies involved in the sample. Each interview lasted between 45 min and an hour and a half. All interviews were recorded and transcribed verbatim. Table 2 summarizes the details of the data collection.

The number of interviews conducted across cases varies according to the specific organizational contexts. In some cases, information relevant to the research questions was concentrated in a limited number of key informants, allowing data saturation to be reached earlier, whereas in other contexts information was more fragmented across organizational roles, requiring a broader set of interviews to capture the necessary information. In all cases, data collection was concluded when additional interviews no longer generated new information and redundancy was reached.

### 3.4 | Data Analysis

Data were stored and systematized in a shared repository then analyzed through thematic analysis within and across cases with the aim to identify and describe the emergent themes, point out relationships between them, and search for similar

or contrasting themes. The thematic analysis was conducted by adopting an inductive approach and using the six steps described by Braun and Clarke (2006) to identify major themes within the qualitative data. This approach is widely used in the literature on sustainable BM (e.g., Reinhardt et al. 2020; Zufall et al. 2020) and includes familiarization with the data, initial code generation, theme search, themes review, final definition, and analysis.

Once our data collection was completed, we proceeded with a formal and systematic analysis of the full dataset. All interviews, internal documents, and field notes were manually coded. The other data were used to further the author's understanding and knowledge of the cases. Coding was guided by the research questions and then aimed at capturing, on the one hand, evidence related to firms' sustainability-oriented initiatives with their effects on economic, environmental and social performance, and, on the other hand, explanations underlying such performance configurations. In a first step, we identified and coded all excerpts describing stable and incremental sustainability-oriented BM initiatives and their impacts on firm performance. This material was subsequently organized according to the three dimensions of the triple bottom line, in order to reconstruct the configuration of triple bottom line performance for each firm and reconstruct how different combinations of sustainability-oriented initiatives resulted in distinct configurations of triple bottom line performance (RQ1). In parallel, we identified excerpts that helped explain what determined the emergence of these performance configurations (RQ2). Two themes emerged: "Main stakeholders' involvement dynamics" and "Governance of value creation and distribution." During this phase, isolated or nonredundant excerpts were excluded from the coding structure, as they reflected individual interpretations rather than shared patterns across the data. For example, only one person explained the company's sustainability orientation through employee value orientation. This information was not confirmed by triangulation and was not repeated in other interviews and was therefore discarded.

In line with Braun and Clarke (2006), the codes emerging from the interviews were grouped into five themes, which were then aggregated into two overarching dimensions: (1) triple bottom line configuration of sustainability-oriented BMs and (2) determinants of the performance configuration of sustainability-oriented BMs. Figure 2 illustrates the resulting data structure.

Once coding was completed, we undertook an interpretive process aimed at reconstructing, for each case, a specific combination of triple bottom line performance outcomes and the underlying determinants explaining their emergence. This process allowed us to assign an analytical label to each case (see Table 4 in the Section 4) and, through cross-case comparison, to identify both shared patterns and distinctive features, which are presented in the findings section.

## 4 | Findings

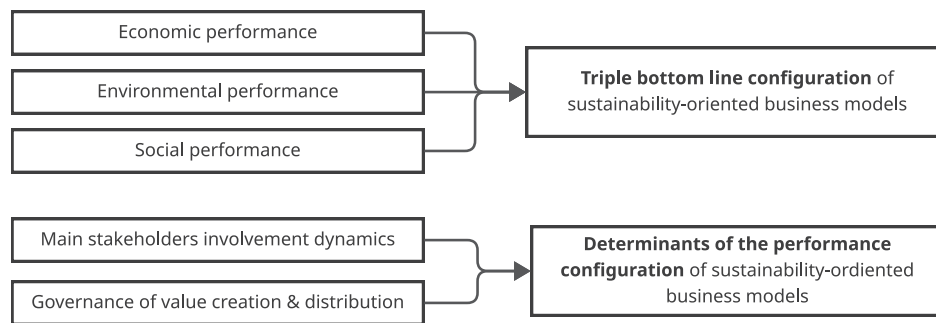
The analysis shows that the analyzed companies have different triple bottom line performance configurations and through an iterative and interpretative process we identified two main determinants of these differences ("main

**TABLE 1** | Research sites overview.

Name	Size	Foundation year	Ownership structure	Sectoral niche	Sustainability profile
G	Medium	1977	Cooperative firm with collective and dispersed ownership among member farmers	Organic food production and commercialization	Sustainability has been intrinsic since its establishment, with environmental and social objectives embedded in its organizational DNA. Over time, the firm has incrementally strengthened this orientation through organizational and process innovations, including the creation of a second cooperative to secure high-quality raw materials and investments in processing technologies to improve efficiency and reduce environmental impacts. These initiatives aim to ensure economic viability and competitiveness while preserving ethical values, supporting local farmers, and strengthening a sustainable supply chain
E	Medium	2022	Family-owned firm with controlling ownership held by the founding family	Pasta production and commercialization	Initially characterized by a conventional BM, the firm has undertaken incremental sustainable BM innovation following the involvement of the second generation. Over time, sustainability has been integrated through socially and environmentally-oriented initiatives, including prioritizing hiring and training local workers, long-term contracts with suppliers, the promotion of ancient grains, the adoption of renewable energy, and fully recyclable and recycled packaging solutions. These initiatives seek to generate positive social and environmental impacts for the territory, support local economic development, ensure fair and stable conditions for farmers and workers, and ensure fair long-term financial stability and steady growth for the company
A	Medium	1978	Privately held firm with a majority owner and minority equity stakes held by some suppliers	Organic food production and commercialization	Sustainability has been embedded in the firm's BM since its foundation, initially focused on organic food commercialization and progressively strengthened through incremental initiatives based on partnerships with farmers and producers and the co-development of resilient, low-water and nutrient-rich products. This ongoing orientation aims to protect biodiversity, promote human health, and ensure fair remuneration along the value chain, reflecting the firm's commitment to expanding the culture of organic food in line with its founding values and evolving competitive opportunities
V	Medium	1925	Family-owned firm with controlling ownership held by the founding family	Cured-meat production and commercialization	Founded as a conventional business in the traditional cured-meat sector, the firm has only in recent years incrementally integrated sustainability into its BM. This evolution has involved product reformulation toward healthier options, alongside process improvements enabled by internationalization, including localized slicing and packaging to reduce transportation, packaging volumes, and waste. These changes are primarily driven by market demand and operational efficiency, while allowing the firm to maintain or increase economic results and protect its traditional identity

**TABLE 2** | Data collection overview.

Multi-round interviews				
	Total number	Duration	Role of respondents	Supplementary materials
G	8	An average of 1 h	Chairman, Board member 1, Board member 2	Company profile, Book with the history of the company, documentation to obtain fair trade certification. Founder's letter
E	6	An average of 1 h	Chief Executive Officer, Founder	Interviews published in newspapers, online videos and notes taken during on-site visits
A	13	An average of 1 h	Chief Executive Officer, Chief Financial Officer, Chairman, Marketing Director, Sales Director, Chief Financial Officer, Sustainability Manager, Marketing Manager.	Sustainability reports, Brochures, Notes taken during a company event
V	11	An average of 1 h	Operations Manager, Sales Director, Human Resource Manager, Nonexecutive director (family member), Executive director 1 (family member), Executive director 2 (family member), Chairman (family member).	Sustainability reports, communications to the staff

**FIGURE 2** | Data structure emerging from the inductive thematic analysis. See Table S1 in Appendix S2 for consulting a selection of explanatory quotes.

stakeholder involvement dynamics” and “governance of value creation and distribution”).

First, the data analysis shows that although the four firms operate in the same industry and geo-political context and share similar firm sizes, the specific sustainability-oriented initiatives they adopt—and the ways these initiatives are integrated into their BM innovation initiatives—produce heterogeneous triple bottom line configurations. In particular, firms differ in how they mobilize environmental and social initiatives in relation to economic objectives, resulting in distinct configurations that reflect alternative ways of prioritizing and combining value creation and distribution in the three triple bottom line dimensions. Table 3 summarizes the triple bottom line configurations of the four analyzed companies. A selection of the related codified quotes can be viewed in Table S1 in Appendix S2.

The cross-case comparison reveals two patterns. Two firms display triple bottom line configurations that are more strongly oriented toward environmental and social performance. By contrast, the other two firms place greater emphasis on economic

performance, albeit with different degrees and underlying logics: in one case, economic primacy is associated with a selective and instrumental integration of environmental and social initiatives, primarily when these are aligned with economic objectives, whereas in the other, economic objectives coexist with a more balanced integration of environmental and social considerations aimed at consolidating the firm's sustainable growth trajectory. Figure 3 synthesizes this cross-case analysis by positioning the four firms according to these emerging configurations. The axes do not represent absolute performance scores, but rather orientations derived from qualitative data, capturing how sustainable BM innovation initiatives shape the relative balance between economic, environmental, and social performance.

Second, the analysis, together with the iterative and interpretative process, reveals which determinants explain the different triple bottom line configurations resulting from sustainability-oriented BM innovation. Comparing the cases, similar triple bottom line performance configurations systematically emerge under comparable conditions of “main stakeholder involvement dynamics”

**TABLE 3** | Triple bottom line performance configurations across cases.

	<b>Economic</b>	<b>Environment</b>	<b>Social</b>
	Environmental and social primacy with economic results as a minimum supporting condition		
G	Economic performance is deliberately framed as a supporting condition for sustaining the firm's social and environmental commitment. Incremental sustainability-oriented initiatives limit profit margin but ensure long-term stability and, most importantly, the preservation of the firm's founding principles.	Environmental performance is grounded in a founding commitment to organic production and biodiversity protection. Incremental sustainability-oriented BM initiatives—such as non-intensive agriculture, investments in renewable energy, environmentally friendly packaging, and the internalization of production processes—reduce waste, pollution, and transport-related emissions, embedding environmental stewardship at the core of the BM.	Social performance is rooted in G's founding mission which prioritizes fair pricing, favorable payment terms, and decent working conditions for farmers and employees. Incremental sustainability-oriented BM innovation initiatives—such as investments in training, knowledge dissemination, and collaboration with universities and local organizations—support rural development, social inclusion, and intergenerational continuity.
	Balanced configuration		
E	Economic performance has been growing during the last years, built on steady, long-term growth rather than short-term maximization. Incremental sustainability-oriented BM innovation initiatives have this purpose and only partially constrain margins while supporting product quality, brand authenticity, and financial reliability. This approach has enabled continued market expansion in Europe and the United States.	Environmental performance has significantly improved through incremental sustainability-oriented BM innovation initiatives aimed at regenerating local ecosystems and reducing the firm's ecological footprint. These include support for ancient grains and non-intensive farming, supplier engagement in sustainable cultivation practices, full reliance on renewable energy, and R&D investments in recyclable and recycled packaging solutions that reduce plastic use without increasing consumer price.	Social performance has become increasingly central through incremental sustainability-oriented BM innovation initiatives focused on local employment, workforce training and well-being, and locally anchored sourcing practices. Multiyear contracts with guaranteed remuneration for farmers and long-term employment for workers support rural communities, territorial identity, and the preservation of cultural heritage.
	Environmental and social primacy with economic results as a minimum supporting condition		
A	Economic performance is supported by the fact that the company positions itself on the market with a premium price that consumers are willing to pay due to its recognized high quality. However, economic performance is moderate as much of the margin is redistributed to suppliers (farmers and producers).	Environmental performance shows continuous improvement through incremental innovations involving product recipes, raw material selection, sustainable packaging solutions, and the progressive conversion of farmland to organic cultivation. This is reinforced by higher supplier remuneration that supports advanced environmental practices along the supply chain.	The company deliberately moves away from a market-based pricing logic when remunerating its suppliers. Farmers and producers receive high compensation to preserve their dignity and continuously improve product quality and workplace safety. This is complemented by the restoration of local traditions through the revival of abandoned crops and ancient recipes in collaboration with local communities.
	Economic primacy supported by minimal instrumental environmental and social initiatives		

(Continues)

TABLE 3 | (Continued)

	Economic	Environment	Social
V	Economic performance benefits from incremental sustainability-oriented initiatives as they have strengthened both consumer and distributor demand. Product reformulation toward healthier options increased market appeal, while a reconfigured production and distribution system reduced transportation and packaging costs, improving margins and supporting international expansion.	Environmental performance shows modest improvement driven by incremental sustainability-oriented adjustments to production and distribution processes. The reconfiguration of international distribution—enabling extended shelf life and localized slicing and packaging—reduces transportation needs, packaging volumes, and related waste, signaling a gradual integration of environmental considerations into strategic decision-making.	Social performance is supported by incremental sustainability-oriented innovation initiatives focused on product reformulation toward lighter and healthier options, enabling more health-conscious consumer choices. These initiatives align with economic objectives by strengthening consumer trust and sustaining market competitiveness.

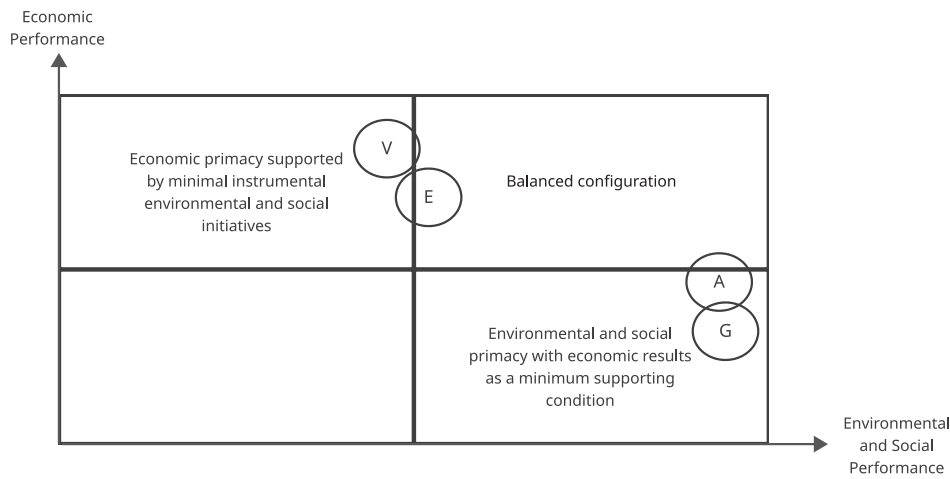
and “governance of value creation and distribution.” First, we observed that firms differ in their “main stakeholders involvement dynamics,” that is, how key stakeholders are engaged and exert influence in sustainability-oriented innovation processes. Variations in stakeholder engagement and influence shape both the prioritization of environmental and social objectives relative to economic ones (or vice versa) and the ways these priorities are enacted through sustainability-oriented BM initiatives. For example, in G and A companies, stakeholders’ interests take priority in decision-making processes relating to value creation and distribution, even if this results in lower economic performance. Our data shows that “main stakeholders’ involvement dynamic” is interrelated with the “governance of value creation and distribution,” that is, who holds decision-making power over how value is created and distributed across economic, environmental, and social dimensions. For example, as illustrated in Table 4, in case V the owning family emerges as the main stakeholder, holding decision-making power regarding value creation and distribution. The owner family’s primary objective is to maximize the value of the company to be transferred to future generations, and this guides strategic decisions regarding sustainability initiatives. The latter are in fact aimed at introducing improvements to products and processes in order to increase the competitiveness of the offering, expand market share and increase sales. Table 4 summarizes these patterns through a cross-case comparison and presents the results of our interpretative process, which led to the identification of two main patterns: a *supplier lock-in purpose model*, resulting in the primacy of environmental and social goals, with economic performance serving as a minimum supporting condition; and a *family-governed continuity model*, characterized by a stronger centrality of economic results.

## 5 | Discussion

Research into the effects that sustainability-oriented BM innovation initiatives have on performance has grown significantly in recent years but has so far yielded ambiguous and inconclusive results. Previous literature suggests that adopting sustainability-oriented BM innovation initiatives can improve economic performance by promoting value creation, competitiveness, and long-term profitability (Broccardo et al. 2020; Geissdoerfer et al. 2018). On the other hand, other studies show conflicting results and highlight that the configuration of sustainable BMs often favors specific dimensions of sustainability, generating trade-offs between economic, social, and environmental outcomes (Alonso-Martinez et al. 2021). Overall, the extant literature acknowledges a significant gap in explaining the antecedents that determine triple bottom line performance configurations and why innovation in sustainability-oriented BMs leads to heterogeneous performance outcomes across companies and contexts (Morioka et al. 2017).

This research contributes to the ongoing debate on the nexus between sustainability orientation in BM innovation and performance with particular attention to factors affecting the different dimensions of the triple bottom line and their balance. In this perspective, our research provides several contributions.

First, our findings show that sustainability-oriented BM innovation initiatives can lead to different configurations of economic,



**FIGURE 3** | Triple bottom line configurations.

environmental, and social performance depending on the priorities firms assign to the sustainability dimensions when shaping their value creation and redistribution models. Previous literature has suggested different and sometimes conflicting evidence on the performance originating from initiatives aimed at increasing sustainability. While several studies highlight positive effects on economic performance (Al-Tuwaijri et al. 2004; Evans et al. 2017; Lüdeke-Freund and Dembek 2017) as well as on environmental and social performance (Albertini 2013; Ullmann 1985), other contributions emphasize the persistent ambiguity of these results (Massa et al. 2017; Pieroni et al. 2019). Our findings contribute to the understanding of this phenomenon by showing that sustainable BM innovation should not be understood as a uniform process leading to homogeneous and predictable performance outcomes. Rather, when companies innovate their BMs in a sustainability-oriented way, they pursue initiatives that differ depending on the priority they assign to specific sustainability dimensions. The value creation and redistribution model that companies choose to adopt influences the initiatives and thus the triple bottom line configuration.

Our research, through a cross-case comparison (see Table 3), has identified patterns that allow us to interpret the similarities and differences between the companies in the sample in an organic way, thus resolving and overcoming the contradictions and ambiguities that emerged in previous studies. Some firms prioritize social and environmental impact, allocating resources mainly to these objectives while maintaining economic performance at a level sufficient to ensure business continuity. Others, although pursuing sustainability-oriented BM innovation, place greater emphasis on economic performance, adopting different value redistribution logics. As our findings show, companies can seek a balanced improvement of the triple bottom line through a medium-term value creation perspective, while others can primarily leverage sustainability initiatives to enhance cost efficiency and market expansion. Each company shapes a value creation and redistribution model with which it identifies and integrates both the initiatives to be adopted to innovate the BM toward sustainability and the redistribution methods that lead to the configuration of the triple bottom line. Therefore, we contribute to literature by providing a nuanced explanation of the link between sustainability-oriented BM innovation initiatives and the configuration of the triple bottom line. We

suggest nondeterministic outcomes of sustainability-oriented BM innovation, even under comparable exogenous conditions. This insight represents a foundational contribution of our study and provides the basis for the next two insights explaining the determinants underlying these configurations resulting from sustainability-oriented BM innovation.

Second, we found that the existence of different triple bottom line performance configurations, characterized by both commonalities and differences, is explained by the combination of two determinants: “main stakeholders’ involvement dynamics” and “the governance of value creation and distribution.” “Main stakeholders’ involvement dynamics” refers to the most significant stakeholders involved and the dynamics through which their objectives and priorities influence the sustainability initiatives undertaken across the different dimensions of sustainability. While “governance of value creation and distribution” refers to the actors that have the power to influence how value is created and distributed in the economic, environmental, and social dimensions. The cross-case comparison presented in Table 4 shows that, in two of the companies in the sample, suppliers exhibit a high level of involvement and influence, assuming a central role in value creation and distribution processes. In these cases, BM innovation is driven by strong integration with the supply chain and by a governance logic oriented toward long-term collaboration. As a result, greater emphasis is placed on the social and environmental dimensions of sustainability, often at the expense of economic performance. This can be described as a supplier lock-in purpose model. In the remaining two cases, by contrast, the stakeholders with the greatest influence over BM innovation initiatives are shareholders, represented by owner families. The centrality of owners’ interests steers the governance of value creation and distribution processes toward a stronger emphasis on economic performance. Nevertheless, differences emerge in how this objective is pursued. In one case, the firm seeks sustainable development in the medium term by fostering partner growth and maintaining continuity in relationships with key stakeholders, thereby achieving a more balanced triple bottom line configuration. In the other case, the focus on economic performance is even more pronounced and is aimed at protecting wealth over the long term and ensuring its transfer to future generations. This can be described as a family-governed continuity model. While previous research has highlighted

**TABLE 4** | Cross-case comparison of triple bottom line performance configurations and their determinants.

<b>Triple bottom line performance configurations</b>		<b>Main stakeholders' involvement dynamics</b>	<b>Governance of value creation and distribution</b>
G	Environmental and social primacy with economic results as a minimum supporting condition	Suppliers integrated in a structured ecosystem including universities and local communities to disseminate the value of the model.  A supplier lock-in purpose model: the unbalanced orientation toward environmental and social performance stems from the central role of suppliers, who formally hold decision-making power through the cooperative structure. The cooperative purpose prioritizes ethical choices and environmental stewardship—particularly organic production, biodiversity protection, and fair remuneration—while moderate economic performance is accepted as a logical consequence of these purpose-driven commitments rather than a primary objective.	Decision-making power is distributed across the supply chain and anchored to the founding values of the cooperative. Value is created along an integrated supply chain and distributed through fair pricing and long-term support to key stakeholders. Shared values and active suppliers' participation are designed to preserve of the company's ethos while ensuring that economic results can support social and environmental commitments.
E	Balanced configuration	Owning family committed to growth while preserving long-term local territory relationship with suppliers, employees and community.  A family-governed continuity model: the balanced triple bottom line performance configuration stems from the central role played by the owning family in governing value creation and distribution. The family's long-term orientation and commitment to territorial and community wellbeing shape decision-making across the BM, integrating environmental and social initiatives as core strategic drivers of growth and competitiveness. These initiatives, by reinforcing the firm's brand identity and family's reputation, support economic outcomes.	Decision-making power is centralized within the owning family, whose objective is to support the firm's growth while remaining aligned with territorial and community-rooted values. To this end, the family guides value creation through environmental and social initiatives, aligning relationships with employees, suppliers and local community to sustain stable economic and reputational outcomes.
A	Environmental and social primacy with economic results as a minimum supporting condition	Suppliers engaged in long-term collaboration activities and operating as an integrated organization through joint product design and agricultural planning.  A supplier lock-in purpose model: the unbalanced orientation toward environmental and social performance stems from the central role of suppliers, which shapes decisions on value creation and distribution. Although decision-making power remains with A, mutual complementarities between A and its suppliers enable the model to function: high product quality and strong respect of sustainability standards support premium market positioning, which in turn allows A to offer high supplier remuneration and sustain these standards over time.	Decision-making power remains largely with A, which governs value creation and coordination through long-term partnerships. However, while the focal firm leads value governance, it relies on complementarities: suppliers provide high-quality raw materials, while A contributes brand reputation, market access, and R&D capabilities. Only value-aligned suppliers are selected, sometimes holding minority ownership stakes to strengthen interest alignment.
V	Economic primacy supported by minimal instrumental environmental and social initiatives	Owning family committed to preserving and passing on the company and wealth to future generations, with customers as the key stakeholder for this continuity.  A family-governed continuity model: the unbalanced orientation toward economic performance stems from the central role played by the owning family in governing value creation and distribution. The family's objective of ensuring long-term continuity leads to a selective integration of sustainability, with economic performance guiding the scope and intensity of environmental and social initiatives. These initiatives remain moderate, supporting competitiveness and BM renewal without compromising the economic balance required by family governance.	Decision-making power is centralized within the owning family, whose primary objective is to ensure the long-term continuity of the firm and preserve its identity over time. To safeguard the firm's longevity, the family aligns strategic decision-making with the interests of customers—both consumers and distributors—who therefore play a pivotal role in shaping value flows.

similarities between family businesses and cooperatives (Karhu 2015), our findings reveal a substantial divergence in how these organizational forms shape sustainable performance. Although family businesses do not neglect social and environmental dimensions (Le Breton-Miller and Miller 2016), family firms analyzed in this study tend to prioritize a careful balancing of economic objectives in order to ensure continuity and transgenerational control. At the same time, they clearly recognize that embedding environmental and social initiatives into the core drivers of growth and competitiveness strengthens not only economic performance but also the reputation and identity of the owning family. This strategic integration reflects the pursuit of a balance between economic and noneconomic goals, as emphasized by the socio-emotional wealth perspective (e.g., Gómez-Mejía et al. 2007; Berrone et al. 2010; Cennamo et al. 2012). Our findings further show that when the governance of value creation and redistribution is firmly controlled by the family, the configuration of the triple bottom line is closely linked to the intention to preserve a desired level of socio-emotional wealth (Berrone et al. 2010). In our sample, this orientation manifests differently across cases: in case V, it is primarily associated with material wealth and the preservation of family tradition, whereas in case E it is rooted in strong relationships with local stakeholders and the protection of family reputation. The key point, therefore, is that sustainable performance in family businesses is not pursued in per sé, but as a means to safeguard and reinforce those financial and nonfinancial objectives that are most salient to the owning family. This interpretation is consistent with Holt et al. (2017), who highlight the importance of the intertwining of financial and nonfinancial goals in shaping strategic decision-making.

Overall, the comparative analysis highlights that *main stakeholders' involvement dynamics* and the *governance of value creation and distribution* are key elements in shaping firms' orientation toward specific dimensions of sustainability and in defining the balance among economic, social, and environmental performance. This insight advances previous literature by identifying the significance of stakeholder engagement by framing their influence on the triple bottom line configuration, both as recipients of the value created and as a conditioning factor in innovation initiatives for the sustainability-oriented BM. We advance the strands of research on sustainable BM innovation that supported the multistakeholder approach and the involvement of a variety of stakeholders in order to improve performance across the three dimensions of sustainability (Geissdoerfer et al. 2018; Hörisch et al. 2014; Lüdeke-Freund 2010), as we provide an explanation of the logic that defines identification and priorities among stakeholders and the resulting link with performance configuration. In doing so, we also add to the extant research that investigated the dynamics by which specific stakeholder groups influence performance, helping to overcome the ambiguity caused by partial and sometimes contradictory results. Our findings contribute to developing a framework that organically incorporates previous research aimed at understanding how the involvement of customers and local communities (Huang and Watson 2015), or investors (Henisz et al. 2014) influences the outcome. Moreover, our findings help clarify the seemingly contradictory evidence regarding the effects of stakeholder involvement, including the risks of imbalance associated with the multiplicity of stakeholders and the antagonistic tensions among

their demands (Hörisch et al. 2014; Tantaló and Priem 2016). As prior research has shown, economic, social, and environmental objectives are more often characterized by trade-offs than by synergies, making their simultaneous optimization inherently challenging (Hahn et al. 2010, 2015). Our findings highlight that a full understanding of these tensions requires explicit consideration of the governance of value creation and distribution, which plays a crucial role in shaping the configuration of triple bottom line performance.

Finally, the extant literature highlighted the critical issues in the agri-food sector that make it difficult to achieve a balanced triple bottom line and innovate sustainable BMs. The weaknesses caused by small size and supply chains in which the distribution of power among actors is unbalanced to the detriment of small producers (Barth et al. 2021) have been recognized, with critical issues arising from both environmental constraints and the specific nature of the sector (Davis et al. 2023; Contzen et al. 2025; Testa et al. 2022). Under these conditions, the transition to sustainable BMs can only take place if the entire system in which a single company operates embarks on the path of sustainability (Krasnokutskaya et al. 2025) with new BMs that organically integrate the balanced configuration of the triple bottom line. Our results advance the existing literature by identifying the key drivers that enable the development of collaborative BMs in the agri-food sector based on long-term relationships with key players in the supply chain who deliver balanced performance across the three dimensions of sustainability. We also address the controversial issue of stakeholder involvement, showing how they can intervene in the governance of value creation and redistribution processes.

## 6 | Conclusions

This study contributes to the growing debate on innovation in sustainability-oriented BMs, offering a more nuanced and process-based understanding of how triple bottom line performance is configured. By showing that triple bottom line performance results from stakeholder involvement dynamics integrated with the governance of value creation and redistribution processes, rather than by sustainability initiatives alone, our findings help reconcile the ambiguous and often contradictory results reported in previous research. In particular, this study advances the extant literature by identifying key antecedents that explain why innovation in sustainability-oriented BMs can lead to heterogeneous and uneven configurations of economic, social, and environmental performance. In doing so, it expands existing research on sustainable BMs by shifting the focus from isolated outcomes to the overall configuration of the triple bottom line, and identifying the underlying factors through which value is created, allocated, and redistributed among stakeholders.

From a managerial perspective, the results highlight that pursuing sustainability-oriented BM innovation requires explicit and deliberate choices regarding how value is distributed across stakeholders and sustainability dimensions. Managers are therefore encouraged to move beyond a narrow focus on performance indicators and to actively govern the processes that shape value creation and redistribution over time. Understanding which

stakeholders hold influence, how their demands are prioritized, and how trade-offs are managed is essential for aligning sustainability initiatives with the desired balance across the triple bottom line. Particularly in sectors characterized by complex supply chains and power asymmetries, such as the agri-food sector, managers should recognize that sustainability-oriented innovation may stabilize or even reduce short-term economic performance while strengthening social and environmental outcomes and long-term business continuity.

This research also has implications for policymakers. Our findings suggest that policies aimed at promoting sustainable BMs should go beyond compliance-based approaches and instead support governance arrangements that enable collaboration, long-term relationships, and fair value distribution across supply chains. Policymakers can play a critical role by developing institutional frameworks that reduce power imbalances, incentivize collaborative BMs along the supply chain, and reward investments in sustainability that generate collective value over time. These interventions should foster innovation that, balancing the triple bottom line dimensions, contribute to sustainable regional development and that can only be realized through aggregation of companies. In this regard, our findings highlight the importance for regional policymakers of accounting not only for standard firm-level characteristics (such as firm size, turnover, activity etc.) but also the interaction between firms' main stakeholder involvement dynamics and the governance of value creation and distribution when designing policy interventions. These elements emerge as key levers for supporting balanced triple bottom line performance and accelerating sustainability transitions at both the firm and the territorial levels. For example, in contexts populated by family firms with closed ownership structures, the design of interventions aimed at fostering collaboration to promote sustainable territorial development should take into account that these firms may tend to prioritize the protection of family control over time. Accordingly, incentives for collaboration should be designed to be compatible with this orientation, in order to ensure their effective adoption and implementation. This research also has some limitations. The factors underlying the integration between the models of value creation and redistribution are an articulated and complex topic that requires further research efforts. Moreover, this research focused on businesses operating in the agri-food sector and future research should be extended to other contexts to cumulate the findings and extend our theoretical understanding. And finally, the companies in the sample belong to an area in the center of Italy and are all small and medium-sized enterprises. Future research could investigate different sociocultural contexts and different sectors to gain a richer understanding of the phenomenon and to identify further models emerging from the interaction between "main stakeholder involvement dynamics" and the "governance of value creation and distribution" across diverse cultural and territorial settings.

#### Acknowledgments

The first author of this study received research funding from the Italian Ministry of University (MUR)—PRIN 2022 2022STRZYZ entitled: Towards Circular Economy: A Business Model Innovation Perspective.

Open access publishing facilitated by Università degli Studi di Modena e Reggio Emilia, as part of the Wiley - CRUI-CARE agreement.

#### Funding

This work was supported by Ministero dell'Università e della Ricerca (PRIN 2022 2022STRZYZ).

#### References

- Albertini, E. 2013. "Does Environmental Management Improve Financial Performance? A Meta-Analytical Review." *Organization & Environment* 26, no. 4: 431–457. <https://doi.org/10.1177/1086026613510301>.
- Al-Debei, M. M., and D. Avison. 2010. "Developing a Unified Framework of the Business Model Concept." *European Journal of Information Systems* 19, no. 3: 359–376.
- Alonso-Martinez, D., V. D. Marchi, and E. D. Maria. 2021. "The Sustainability Performances of Sustainable Business Models." *Journal of Cleaner Production* 323: 129145. <https://doi.org/10.1016/j.jclepro.2021.129145>.
- Al-Tuwaijri, S. A., T. E. Christensen, and K. E. Hughes. 2004. "The Relations Among Environmental Disclosure, Environmental Performance, and Economic Performance: A Simultaneous Equations Approach." *Accounting, Organizations and Society* 29, no. 5: 447–471. [https://doi.org/10.1016/S0361-3682\(03\)00032-1](https://doi.org/10.1016/S0361-3682(03)00032-1).
- Amit, R., and C. Zott. 2012. "Creating Value Through Business Model Innovation." *MIT Sloan Management Review* 53, no. 2: 41–49.
- Ancillai, C., A. Sabatini, M. Gatti, and A. Perna. 2023. "Digital Technology and Business Model Innovation: A Systematic Literature Review and Future Research Agenda." *Technological Forecasting and Social Change* 188: 122307. <https://doi.org/10.1016/j.techfore.2022.122307>.
- Andreini, D., C. Bettinelli, N. J. Foss, and M. Mismetti. 2022. "Business Model Innovation: A Review of the Process-Based Literature." *Journal of Management and Governance* 26, no. 4: 1089–1121. <https://doi.org/10.1007/s10997-021-09590-w>.
- Aspara, J., J. Hietanen, and H. Tikkanen. 2010. "Business Model Innovation vs Replication: Financial Performance Implications of Strategic Emphases." *Journal of Strategic Marketing* 18, no. 1: 39–56. <https://doi.org/10.1080/09652540903511290>.
- Baldassarre, B., G. Calabretta, N. M. P. Bocken, and T. Jaskiewicz. 2017. "Bridging Sustainable Business Model Innovation and User-Driven Innovation: A Process for Sustainable Value Proposition Design." *Journal of Cleaner Production* 147: 175–186.
- Bansal, P. 2005. "Evolving Sustainably: A Longitudinal Study of Corporate Sustainable Development." *Strategic Management Journal* 26, no. 3: 197–218. <https://doi.org/10.1002/smj.441>.
- Bansal, P., and K. Roth. 2000. "Why Companies Go Green: A Model of Ecological Responsiveness." *Academy of Management Journal* 43, no. 4: 717–736.
- Barth, H., P. Ulvenblad, P. O. Ulvenblad, and M. Hoveskog. 2021. "Unpacking Sustainable Business Models in the Swedish Agricultural Sector—the Challenges of Technological, Social and Organisational Innovation." *Journal of Cleaner Production* 304: 127004.
- Bashir, M., M. M. Naqshbandi, and R. Farooq. 2020. "Business Model Innovation: A Systematic Review and Future Research Directions." *International Journal of Innovation Science* 12, no. 4: 457–476.
- Bashir, M., and R. Verma. 2019. "Internal Factors & Consequences of Business Model Innovation." *Management Decision* 57, no. 1: 262–290.
- Berrone, P., C. Cruz, and L. R. Gomez-Mejia. 2010. "Socioemotional Wealth in Family Firms: Theoretical Dimensions, Assessment

- Approaches, and Agenda for Future Research.” *Family Business Review* 25, no. 3: 258–279.
- Bocken, N. M., and T. H. Geradts. 2020. “Barriers and Drivers to Sustainable Business Model Innovation: Organization Design and Dynamic Capabilities.” *Long Range Planning* 53, no. 4: 101950.
- Bocken, N. M., S. W. Short, P. Rana, and S. Evans. 2014. “A Literature and Practice Review to Develop Sustainable Business Model Archetypes.” *Journal of Cleaner Production* 65: 42–56.
- Boons, F., and F. Lüdeke-Freund. 2013. “Business Models for Sustainable Innovation: State-Of The-Art and Steps Towards a Research Agenda.” *Journal of Cleaner Production* 45: 9–19.
- Braun, V., and V. Clarke. 2006. “Using Thematic Analysis in Psychology.” *Qualitative Research in Psychology* 3, no. 2: 77–101.
- Broccardo, E., M. Mazzuca, and M. L. Frigotto. 2020. “Social Impact Bonds: The Evolution of Research and a Review of the Academic Literature.” *Corporate Social Responsibility and Environmental Management* 27, no. 3: 1316–1332.
- Bucherer, E., U. Eisert, and O. Gassmann. 2012. “Towards Systematic Business Model Innovation: Lessons From Product Innovation Management.” *Creativity and Innovation Management* 21, no. 2: 183–198. <https://doi.org/10.1111/j.1467-8691.2012.00637.x>.
- Cennamo, C., P. Berrone, C. Cruz, and L. R. Gomez-Mejia. 2012. “Socioemotional Wealth and Proactive Stakeholder Engagement: Why Family-Controlled Firms Care More About Their Stakeholders.” *Entrepreneurship Theory and Practice* 36, no. 6: 1153–1173.
- Chesbrough, H. 2010. “Business Model Innovation: Opportunities and Barriers.” *Long Range Planning* 43, no. 2–3: 354–363.
- Clauss, T. 2017. “Measuring Business Model Innovation: Conceptualization, Scale Development, and Proof of Performance.” *R&D Management* 47, no. 3: 385–403. <https://doi.org/10.1111/radm.12186>.
- Contzen, S., M. Santhanam-Martin, M. Beecher, N. Hostiou, and R. Nettle. 2025. “Revisiting the Concept of ‘Decent Work’ for Agriculture.” *Journal of Rural Studies* 120: 103872.
- Cortese, D., C. Rainero, and V. Cantino. 2021. “Stakeholders’ Social Dialogue About Responsibility and Sustainability in the Food Sector.” *British Food Journal* 123, no. 3: 1287–1301.
- Cucculelli, M., and C. Bettinelli. 2015. “Business Models, Intangibles and Firm Performance: Evidence on Corporate Entrepreneurship From Italian Manufacturing SMEs.” *Small Business Economics* 45, no. 2: 329–350. <https://doi.org/10.1007/s11187-015-9631-7>.
- Davis, B., E. Mane, L. Y. Gurbuzer, et al. 2023. *Estimating Global and Country-Level Employment in Agrifood Systems*. Food & Agriculture Organization of the United Nations, FAO Statistics Working Paper Series/23–34. <https://doi.org/10.4060/cc4337en>.
- de Van Ven, A. H. 1992. “Suggestions for Studying Strategy Process: A Research Note.” *Strategic Management Journal* 13, no. 1: 169–188. <https://doi.org/10.1002/smj.4250131013>.
- Dentchev, N., R. Rauter, L. Jóhannsdóttir, et al. 2018. “Embracing the Variety of Sustainable Business Models: A Prolific Field of Research and a Future Research Agenda.” *Journal of Cleaner Production* 194: 695–703. <https://doi.org/10.1016/j.jclepro.2018.05.156>.
- Diaz-Moriana, V., E. Clinton, and N. Kammerlander. 2022. “Untangling Goal Tensions in Family Firms: A Sensemaking Approach.” *Journal of Management Studies* 59, no. 5: 69–109. <https://doi.org/10.1111/joms.12845>.
- Donner, M., and H. De Vries. 2023. “Business Models for Sustainable Food Systems: A Typology Based on a Literature Review.” *Frontiers in Sustainable Food Systems* 7: 1160097.
- Drempetic, S., C. Klein, and B. Zwergel. 2020. “The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review.” *Journal of Business Ethics* 167: 333–360.
- Dunford, R., I. Palmer, and J. Benveniste. 2010. “Business Model Replication for Early and Rapid Internationalisation: The ING Direct Experience.” *Long Range Planning* 43, no. 5–6: 655–674.
- Eisenhardt, K. M. 1989. “Building Theories From Case Study Research.” *Academy of Management Review* 14, no. 4: 532–550.
- Eisenhardt, K. M. 2021. “What Is the Eisenhardt Method, Really?” *Strategic Organization* 19, no. 1: 147–160.
- Eisenhardt, K. M., and M. E. Graebner. 2007. “Theory Building From Cases: Opportunities and Challenges.” *Academy of Management Journal* 50, no. 1: 25–32.
- Elkington, J. 2013. “Enter the Triple Bottom Line.” In *The Triple Bottom Line*, 1–16. Routledge.
- Evans, S., D. Vladimirova, M. Holgado, et al. 2017. “Business Model Innovation for Sustainability: Towards a Unified Perspective for Creation of Sustainable Business Models.” *Business Strategy and the Environment* 26, no. 5: 597–608. <https://doi.org/10.1002/bse.1939>.
- Figge, F., and T. Hahn. 2021. “Business- and Environment-Related Drivers of Firms’ Return on Natural Resources: A Configurational Approach.” *Long Range Planning* 54, no. 4: 102066. <https://doi.org/10.1016/j.lrp.2020.102066>.
- Filser, M., S. Kraus, M. Breier, I. Nenova, and K. Puumalainen. 2021. “Business Model Innovation: Identifying Foundations and Trajectories.” *Business Strategy and the Environment* 30, no. 2: 891–907.
- Foss, N. J., and T. Saebi. 2017. “Fifteen Years of Research on Business Model Innovation: How Far Have We Come, and Where Should We Go?” *Journal of Management* 43, no. 1: 200–227.
- Gallo, P. J., and L. J. Christensen. 2011. “Firm Size Matters: An Empirical Investigation of Organizational Size and Ownership on Sustainability-Related Behaviors.” *Business & Society* 50, no. 2: 315–349.
- Geissdoerfer, M., S. N. Morioka, M. M. de Carvalho, and S. Evans. 2018. “Business Models and Supply Chains for the Circular Economy.” *Journal of Cleaner Production* 190: 712–721.
- Gómez-Mejía, L. R., K. T. Haynes, M. Núñez-Nickel, K. J. Jacobson, and J. Moyano-Fuentes. 2007. “Socioemotional Wealth and Business Risks in Family-Controlled Firms: Evidence From Spanish Olive Oil Mills.” *Administrative Science Quarterly* 52, no. 1: 106–137.
- Hahn, T., F. Figge, J. Pinkse, and L. Preuss. 2010. “Trade-Offs in Corporate Sustainability: You Can’t Have Your Cake and Eat It.” *Business Strategy and the Environment* 19, no. 4: 217–229.
- Hahn, T., J. Pinkse, L. Preuss, and F. Figge. 2015. “Tensions in Corporate Sustainability: Towards an Integrative Framework.” *Journal of Business Ethics* 127: 297–316.
- Henisz, W. J., S. Dorobantu, and L. J. Nartey. 2014. “Spinning Gold: The Financial Returns to Stakeholder Engagement.” *Strategic Management Journal* 35, no. 12: 1727–1748. <https://doi.org/10.1002/smj.2180>.
- Herrero, I., C. López, and R. Ruiz-Benitez. 2024. “So Are Family Firms More Sustainable? On the Economic, Social and Environmental Sustainability of Family SMEs.” *Business Strategy and the Environment* 33, no. 3: 4252–4270. <https://doi.org/10.1002/bse.3699>.
- Holt, D. T., A. W. Pearson, and T. Barnett. 2017. “Family Firm (s) Outcomes Model: Structuring Financial and Nonfinancial Outcomes Across the Family and Firm.” *Family Business Review* 30, no. 2: 182–202.
- Hörisch, J., R. E. Freeman, and S. Schaltegger. 2014. “Applying Stakeholder Theory in Sustainability Management: Links, Similarities, Dissimilarities, and a Conceptual Framework.” *Business Strategy and the Environment* 23, no. 5: 328–346. <https://doi.org/10.1002/bse.1772>.
- Huang, S. K., and R. T. Watson. 2015. “The Role of Information Systems in Sustainability: A Stakeholder Perspective.” *Journal of Business Research* 68, no. 5: 1033–1045. <https://doi.org/10.1016/j.jbusres.2014.11.019>.

- Inigo, E. A., and L. Albareda. 2019. "Sustainability Oriented Innovation Dynamics: Levels of Dynamic Capabilities and Their Path-Dependent and Self-Reinforcing Logics." *Technological Forecasting and Social Change* 139: 334–351. <https://doi.org/10.1016/j.techfore.2018.11.023>.
- Jabbour, C. J. C., A. B. L. De Sousa Jabbour, K. Govindan, A. A. Teixeira, and W. R. De Souza Freitas. 2013. "Environmental Management and Operational Performance in Automotive Companies in Brazil: The Role of Human Resource Management and Lean Manufacturing." *Journal of Cleaner Production* 47: 129–140. <https://doi.org/10.1016/j.jclepro.2012.07.010>.
- Karhu, S. 2015. "The Parallels of Family Business Research and Cooperative Studies." *Journal of co-Operative Organization and Management* 3, no. 2: 94–95.
- Kleine, A., and M. von Hauff. 2009. "Sustainability-Driven Implementation of Corporate Social Responsibility: Application of the Integrative Sustainability Triangle." *Journal of Business Ethics* 85, no. 3: 517–533. <https://doi.org/10.1007/s10551-009-0212-z>.
- Krasnokutskaya, N., A. Merino, C. Escudero Guirado, and E. M. Díaz-Carmona. 2025. "Open Innovation for Sustainability in the Agri-Food Sector: Why, Who and How?" *European Journal of Innovation Management* 28, no. 6: 2532–2557.
- Le Breton-Miller, I., and D. Miller. 2016. "Family Firms and Practices of Sustainability: A Contingency View." *Journal of Family Business Strategy* 7, no. 1: 26–33.
- Lozano, R. 2018. "Sustainable Business Models: Providing a More Holistic Perspective." *Business Strategy and the Environment* 27, no. 8: 1159–1166. <https://doi.org/10.1002/bse.2059>.
- Lüdeke-Freund, F. 2010. "Towards a Conceptual Framework of Business Models for Sustainability." In *Knowledge Collaboration & Learning for Sustainable Innovation*, 14th European Roundtable on Sustainable Consumption And Production (ERSCP) & 6th Environmental Management for Sustainable Universities (EMSU), 25–29. Oktober, Delft, Nederlande.
- Lüdeke-Freund, F., and K. Dembek. 2017. "Sustainable Business Model Research and Practice: Emerging Field or Passing Fancy?" *Journal of Cleaner Production* 168: 1668–1678. <https://doi.org/10.1016/j.jclepro.2017.08.093>.
- Massa, L., and C. L. Tucci. 2013. "Business Model Innovation." *Oxford Handbook of Innovation Management* 20, no. 18: 420–441.
- Massa, L., C. L. Tucci, and A. Afuah. 2017. "A Critical Assessment of Business Model Research." *Academy of Management Annals* 11, no. 1: 73–104.
- Mehrabi, S., J. C. Perez-Mesa, and C. Giagnocavo. 2022. "The Role of Consumer-Citizens and Connectedness to Nature in the Sustainable Transition to Agroecological Food Systems: The Mediation of Innovative Business Models and a Multi-Level Perspective." *Agriculture* 12, no. 2: 203.
- Miranda, F. J., J. M. Garcia-Gallego, A. Chamorro-Mera, V. Valero-Amaro, and S. Rubio. 2023. "A Systematic Review of the Literature on Agri-Food Business Models: Critical Review and Research Agenda." *British Food Journal* 125, no. 12: 4498–4517.
- Mitchell, D., and C. Coles. 2003. "The Ultimate Competitive Advantage of Continuing Business Model Innovation." *Journal of Business Strategy* 24, no. 5: 15–21.
- Morioka, S. N., I. Bolis, S. Evans, and M. M. Carvalho. 2017. "Transforming Sustainability Challenges Into Competitive Advantage: Multiple Case Studies Kaleidoscope Converging Into Sustainable Business Models." *Journal of Cleaner Production* 167: 723–738. <https://doi.org/10.1016/j.jclepro.2017.08.118>.
- Morioka, S. N., and M. M. de Carvalho. 2016. "A Systematic Literature Review Towards a Conceptual Framework for Integrating Sustainability Performance Into Business." *Journal of Cleaner Production* 136: 134–146. <https://doi.org/10.1016/j.jclepro.2016.01.104>.
- Ortiz-de-Mandojana, N., J. Aguilera-Caracuel, and M. Morales-Raya. 2016. "Corporate Governance and Environmental Sustainability: The Moderating Role of the National Institutional Context." *Corporate Social Responsibility and Environmental Management* 23, no. 3: 150–164.
- Oskam, I., B. Bossink, and A.-P. de Man. 2021. "Valuing Value in Innovation Ecosystems: How Cross-Sector Actors Overcome Tensions in Collaborative Sustainable Business Model Development." *Business & Society* 60, no. 5: 1059–1091. <https://doi.org/10.1177/0007650320907145>.
- Osterwalder, A., Y. Pigneur, and C. L. Tucci. 2005. "Clarifying Business Models: Origins, Present, and Future of the Concept." *Communications of the Association for Information Systems* 16, no. 1: 1.
- Ozanne, L. K., M. Phipps, T. Weaver, et al. 2016. "Managing the Tensions at the Intersection of the Triple Bottom Line: A Paradox Theory Approach to Sustainability Management." *Journal of Public Policy & Marketing* 35, no. 2: 249–261. <https://doi.org/10.1509/jppm.15.143>.
- Patton, M. Q. 1990. *Qualitative Evaluation and Research Methods*. Sage Publications.
- Pedersen, E. R. G., L. Tiburzi, R. Costa, F. Rosati, and A. Calabrese. 2025. "Those Who Mind Matter: The Relationship Between Stakeholder Demands, Business Model Innovation, and Corporate Sustainability." *Corporate Social Responsibility and Environmental Management* 32, no. 1: 1016–1030. <https://doi.org/10.1002/csr.70207>.
- Pieroni, M. P., T. C. McAloone, and D. C. Pigosso. 2019. "Business Model Innovation for Circular Economy and Sustainability: A Review of Approaches." *Journal of Cleaner Production* 215: 198–216.
- Preghenella, N., and C. Battistella. 2021. "Exploring Business Models for Sustainability: A Bibliographic Investigation of the Literature and Future Research Directions." *Business Strategy and the Environment* 30, no. 5: 2505–2522.
- Rahi, A. F., J. Johansson, M. Blomkvist, and F. Hartwig. 2024. "Corporate Sustainability and Financial Performance: A Hybrid Literature Review." *Corporate Social Responsibility and Environmental Management* 31, no. 2: 801–815. <https://doi.org/10.1002/csr.2600>.
- Reinhardt, R., I. Christodoulou, B. A. Garcia, and S. Gasso-Domingo. 2020. "Sustainable Business Model Archetypes for the Electric Vehicle Battery Second Use Industry: Towards a Conceptual Framework." *Journal of Cleaner Production* 254: 119994.
- Ritala, P., L. Albareda, and N. Bocken. 2021. "Value Creation and Appropriation in Economic, Social, and Environmental Domains: Recognizing and Resolving the Institutionalized Asymmetries." *Journal of Cleaner Production* 290: 125796. <https://doi.org/10.1016/j.jclepro.2021.125796>.
- RRN. 2023. "Le sfide globali del made in Italy agroalimentare. Fattori di competitività e prospettive in un contesto di crisi."
- Schaltegger, S., F. Lüdeke-Freund, and E. G. Hansen. 2012. "Business Cases for Sustainability: The Role of Business Model Innovation for Corporate Sustainability." *International Journal of Innovation and Sustainable Development* 6, no. 2: 95–119.
- Stubbs, W. 2019. "Strategies, Practices, and Tensions in Managing Business Model Innovation for Sustainability: The Case of an Australian BCorp." *Corporate Social Responsibility and Environmental Management* 26, no. 5: 1063–1072. <https://doi.org/10.1002/csr.1786>.
- Stutz, L., F. Janz, S. Jordanow, and S. Heidenreich. 2025. "Transforming Business Models for a Better Future: Investigating Effects of Sustainable Business Model Archetypes on Consumer Adoption Behavior." *Corporate Social Responsibility and Environmental Management*: 1–19. <https://doi.org/10.1002/csr.70371>.
- Tantalo, C., and R. L. Priem. 2016. "Value Creation Through Stakeholder Synergy." *Strategic Management Journal* 37, no. 2: 314–329. <https://doi.org/10.1002/smj.2337>.
- Testa, S., K. R. Nielsen, S. Vallentin, and F. Ciccullo. 2022. "Sustainability-Oriented Innovation in the Agri-Food System: Current

Issues and the Road Ahead.” *Technological Forecasting and Social Change* 179: 121653.

Ullmann, A. A. 1985. “Data in Search of a Theory: A Critical Examination of the Relationships Among Social Performance, Social Disclosure, and Economic Performance of US Firms.” *Academy of Management Review* 10, no. 3: 540–557.

Van Bussel, L. M., A. Kuijsten, M. Mars, and P. Van't Veer. 2022. “Consumers’ Perceptions on Food-Related Sustainability: A Systematic Review.” *Journal of Cleaner Production* 341: 130904.

Wirtz, B., and P. Daiser. 2018. “Business Model Innovation Processes: A Systematic Literature Review.” *Journal of Business Models* 6, no. 1: 40–58.

Yin, R. K. 2009. *Case Study Research: Design and Methods*. 4th ed. Sage.

Zott, C., R. Amit, and L. Massa. 2011. “The Business Model: Recent Developments and Future Research.” *Journal of Management* 37, no. 4: 1019–1042.

Zufall, J., S. Norris, S. Schaltegger, F. Revellio, and E. G. Hansen. 2020. “Business Model Patterns of Sustainability Pioneers-Analyzing Cases Across the Smartphone Life Cycle.” *Journal of Cleaner Production* 244: 118651.

### Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Appendix S1:** Interview protocol. **Appendix S2:** Selection of explanatory quotes.