sustainability

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Review

Sustainable Business Models through the Lens of Organizational Design: A Systematic Literature Review

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Abstract: The interest in sustainable business models has grown rapidly in recent years. Although some progress has been made in identifying this concept and making the practices more sustainable, little is known about the organizational design that is most appropriate for creating new business models or implementing changes in existing ones towards a sustainability approach. This paper presents a review of sustainable business models in terms of the key factors that influence firm design based on organization theory. We retrieved 394 Journal Citation Reports papers from the WoK and Scopus databases, identifying 19 papers that have addressed the interplay between both constructs. We used the Galbraith Star Model to analyze the selected papers. We discuss three key findings for the cross-fertilization of both literatures: (i) the extension of the design elements outside the firm boundaries at the inter-organizational and ecosystem levels; (ii) the emphasis on certain design elements (strategy, process, people, structure) rather than others (rewards); and (iii) the use of the organizational design construct as a tactic tool for strategy execution of the sustainable business model. We also present theoretical and practical implications for the use and further development of this framework, as well as future avenues of research.

Keywords: sustainability; business models; organizational design; Star Model; system boundaries

1. Introduction

Sustainability and business models are two of the most popular topics for managers, academics, and policy makers. The term "sustainability" was first linked with a negative impact on nature, human health, social harmony, and economic growth, but has recently been associated with the "triple bottom line" of people, planet, and profit concerning social, economic, and environmental issues [1,2]. Although there is consensus regarding the importance of sustainability for firms, the scientific discourse on how to create or transform into a sustainable organization remains blurred.

On one hand, business models refer to "the logic of the firm, the way it operates and how it creates value for its stakeholders" [3] and can be traced in the literature as far back as the writings of Peter Drucker, where he referred to it as "the theory of a business" [4]. In the last decade, there has been a shift towards proposing sustainable business models in which the value created and delivered by a firm should be not only appealing for the customer, but also fair for the society and friendly to

the environment [5]. Thus, the business model literature has recently extended into a sub-stream due to the increasing attention on sustainability and the popularity of topics such as circular economy, collaborative consumption, inclusive growth, targeting low-income consumers, and the sharing economy [6–9]. Along these lines, Geissdoerfer et al. [10] defined sustainable business models as "business models that incorporate pro-active multi-stakeholder management, the creation of monetary and non-monetary value for a broad range of stakeholders and hold a long-term perspective."

On the other hand, organizational theory identifies the organizational design elements that must be articulated; that is, organizational design aims to align the firm's strategy with its structures and processes to achieve organizational effectiveness [1]. This stream of literature describes a wide range of organizational design elements that need to be aligned, including coordination, corporate culture, power, human resources management, incentives, and performance measurements, above many others [11]. This stream of literature shows a clear trend: the importance of top management understanding how to design an organization in order to manage multiple stakeholders.

Apart from Fjerldstad and Snow [12], and despite the importance of contributions in the area of sustainable business models, scholars have placed little emphasis on the convergence of sustainability, business models, and organizational design. It remains unclear how the articulation of the organization makes it possible to deliver the value proposition to the stakeholders, allowing the success and survival of the business model itself. The goal of the present paper is to shed some light on the integration of these concepts, systematically identifying the state of the art on organizational design for sustainable business models. We also propose a conceptual framework to identify the organizational elements and the relationship among them and the sustainable pillars to close the loop when implementing a new sustainable business model or evolving an existing one.

The remainder of this paper is organized as follows. In Section 2 we define the notions of sustainable business models and organizational design, as well as the choice of the theoretical organizational design lens and research question. Section 3 describes the methodology used, before Section 4 presents the main findings of the study. We discuss the different implications identified in terms of organizational elements related to the strategy implementation in sustainable organizations in Section 5. Finally, Section 6 presents the conclusions, limitations, and agenda for further research.

2. Theoretical Framework

Scholars have called for either the integration of sustainability and organizational design [1] or the connection between business models and organization design [12] or sustainability and business models concepts [13]. This section explores the concepts of sustainable business models and organizational design and the rationale of how both are interlinked.

2.1. Sustainable Business Models

Concern for sustainability is now a global trend, but it can be traced back as far as its first mention in the 1970s by the Rome Club. Some current examples of the importance of sustainability initiatives are the Global Reporting Initiative (GRI) Standards, the United Nations' Global Compact, and the United Nations' Sustainable Development Goals (SDG). The GRI is an international organization based in Amsterdam that created the first and most widely adopted sustainability reporting standards in 1997. The United Nations Global Compact was launched in 2004 as a worldwide initiative encouraging businesses and other stakeholders to adopt environmental and socially responsible policies. In 2015 the United Nations proposed 17 SDGs and 169 targets to be accomplished by 2030, which have been agreed upon by 193 countries. Accordingly, researchers and practitioners have recently argued that companies must include sustainability within their main goals and processes [5,14]. Specifically, companies should not only pursue shareholders' interests, but also the interests and concerns of other stakeholders, using the well-known triple-bottom-line approach: (i) economic prosperity, (ii) social justice, and (iii) environmental quality [2].

While the importance of sustainability is accepted both by academia and practitioners, the strategic implementation of sustainable business models in companies remains unclear, with

researchers and practitioners struggling to propose solutions for different settings [15–19]. Implementing sustainability in companies on a global scale requires reliance on a holistic view, such as the shared value theory [5], which puts forward stakeholder concerns, shifting the priorities of the companies, which are now also starting to build their core business accounting for sustainability [13]. To do this, it is necessary not just to tailor certain processes or products in order to be more sustainable, but to embrace a complete redefinition of how the business is conducted. That is to say; the business model could be an output of the innovation process that allows for sustainability to permeate the companies' processes.

For this reason, scholars in the business model literature have recently pointed out the need for further research on business models that integrate the sustainability approach [6,10,14,20–24]. On one hand, a business model is "a simplified and aggregated representation of the relevant activities of a company" [21]. On the other hand, crafting a new business model (business model innovation) means designing the way in which a new company must create value in order to succeed in the market. According to Kaplan [25], "a business model describes the rationale of how an organization creates, delivers and captures value." In this sense, value proposition or delivering it relates to the concept of goods or services sold and the customer segments and relationships; value creation refers to key activities, resources, and processes; and finally, value capture summarizes revenue and cost streams [26].

When the concept of sustainability was first applied, its main objective was to get companies to undertake the transformation towards a more sustainable economic system and integrate sustainability considerations into organizations [14,27]. However, this concept has changed over time and a common feature of the definitions in the literature is that they see sustainable business models as a modification of the conventional business model concept, with certain characteristics and goals added to it; and they either (1) incorporate concepts, principles, or goals that aim at sustainability; or (2) integrate sustainability into their value proposition, value creation, and value delivery activities, and/or value capture mechanisms.

In this context, Bocken, Short, Rana and Evans [14] and Ritala et al. [27] proposed a categorization of nine archetypes of sustainable business models, as summarized in Table 1. The column focus refers to the sustainability pillar that is addressed and the archetypes are examples of practices (such as mechanisms and solutions) that make it possible to deliver the benefit associated with that specific pillar [27].

Table 1. Proposed sustainable business types.

Focus		Archetypes
Environment	(1)	Maximize material and energy efficiency
	(2)	Closing resource loops
	(3)	Substitute with renewables and natural processes
Social	(4)	Deliver functionality rather than ownership
	(5)	Adopt a stewardship role
	(6)	Encourage sufficiency
Economic	(7)	Repurpose for society/environment
	(8)	Develop sustainable scale-up solutions
	(9)	Inclusive value creation

Firms can create value for sustainability by adopting more sustainable practices to reduce or prevent the negative impacts on the planet or people, such as water and energy consumption, reducing waste, work place stress, etc.; or by creating new technologies that help to solve sustainable problems, such as renewable energy or green material *[20]*. Social benefits are represented by actions such as conservation projects to improve the physical space in which companies are located, considering slow-consumption as part of their business models or delivery functionality rather than ownership, as is done with car-sharing models [27]. The economic benefits that firms can capture include the use of mechanisms such as crowdsourcing platforms, focus on sustainable initiatives, scaling up solutions to maximize effects or sharing resources, knowledge, ownership, and wealth

creation via peer-to-peer product-sharing platforms [27]. Those examples show the relation between organizational design and business models, since a change in strategy to create, deliver, and capture value from these two forms of sustainable value proposition has a direct impact on the organizational process, which requires the realignment of the rest of the organizational elements such as structure, people, and rewards.

2.2. Organizational Design

Organizational design is a well-established field of business research [1]. According to Mohrman and Worley [28], design elements include the routines and work activities encompassed in different processes to deliver value for customers and other stakeholders; structures to provide decision-making, communication, and direction-setting to these processes; processes to attract and motivate talent with the skills they need; and an alignment of all these processes to the firm's strategy.

The rationale behind organizational design is that managers can apply policies to influence employees' behavior and organization's operations. Although the first contributions on organizational design date from the 1960s, recent years have shown a growing interest in the topic [29], leading to the development of models that struggle to represent the complexity and variety of environmental and organizational factors. In contrast, such seminal contributions as the 7-S Framework from McKinsey [30] or Galbraith's Star Model [30] are holistic models that account for a limited number of organizational dimensions, focusing on the relations among them. Despite their simple formulation, these holistic models are believed to be useful when used as analytical frameworks to study the ability of companies to adapt to novel environment. We have selected Galbraith's Star Model as a base for our analysis because it has evolved over time, incorporating elements from others models such as Waterman and Peter's or Nadler and Tushmans' [31], and because it has been selected in previous studies that have an analysis perspective on organizational design [11,31–33].

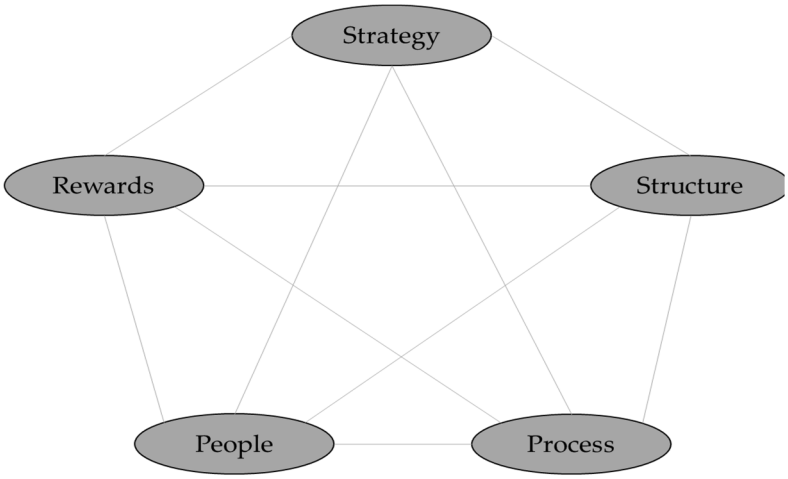

Figure 1. Star Model of organizational design, own development, based on [34].

Galbraith's organizational design is based on a five-factor schema (see Figure 1). These five factors are (i) strategy, (ii) structure, (iii) process, (iv) people, and (v) rewards. The company's strategy specifies the goals, products, and markets to be served, as well as the way of creating and delivering this value, not only to the customer, but also to all stakeholders. Therefore, it establishes the criteria for choosing among alternative organizational forms and it is the first organizational design to be addressed as it connects all of them. Structure stands for the hierarchies and distribution of decisions and responsibilities within the organization. Processes represent the flow of information needed for decision-making, and the implementation of information technologies in the company. People focuses on the human resources policies and is responsible for the level and quality of human capital available at the firm. Then, the rewarding system determines the motivation of the human resources

employed by the company, and, consequently, their commitment to achieving the goals of the organization.

Although this is not what the original model intended, thinking now of employees as the only actors addressed by the organizational element "people" does not adjust to the current business environment that includes dynamic markets. This is especially so considering that, for sustainability purposes, it is vital to deliver social and environmental factors, which must involve all stakeholders needed to create value to the planet and society, such as customers, employees, suppliers, distributors, investors, shareholders, governments, and non-governmental organizations (NGOs), as proposed by Lages [35]. All of these actors are interlinked and should be aligned to the strategy. Strategy scholars such as Kaplan and Norton have also suggested including actors beyond employees to implement a corporate strategy. Initially, in the Balanced Scorecard, these authors proposed a whole perspective to follow up the customer because, in their vision, the employee (internal perspective) has a constant interaction with the customer and the market [34]. The same authors later proposed that "linkages should be established across corporate boundaries" [36], specifically to external partners such as distributors, joint ventures, new ventures, and outsourcers. Finally, they pointed out that when it comes to intrinsically natural sustainability-oriented firms, such as nonprofit and government organizations, some perspectives of the balance scorecard should be modified to include more than one actor (that is, the payer of a service and the receiver of the service benefit) [37]. In their Value Creation Wheel, Lages addressed that the final output of a value chain becomes extremely rich when it involves input from both the internal and the external stakeholders [35]. Thus, we take this extended view in the present study to consider all stakeholders as part of the "people" organizational element, which allows us to take a structured "circular approach framework" [35] that is in line with sustainability.

2.3. Linking Sustainable Business Models and Organizational Design

Although the concepts of business models and organizational design may seem rather dispersed in most of the literature addressing these concepts, they share some common characteristics. First, the two concepts have the notion of design at the core of their definition and application. However, while design revolves around both business modeling and organizational design concepts, they are different conceptual frameworks. We argue that the former discusses business strategy, while the latter deals with the business tactics and strategy implementation (or execution) of the business model. In other words, and with a more holistic view, the business model lies in the center of gravity of Galbraith's Star Model, "holding the five areas together" [6] (see Figure 2).

The second, and more conceptualized, characteristic is the interlink that Foss and Saebi [6] addressed between business model innovation and organizational design. In brief, they posed that organizational design (organizational values, culture, top management team, leadership characteristics, power distribution) is a firm-level moderator of business model innovation, conditioned by internal antecedents (such as dynamic capabilities or change in strategy) and external antecedents (such as change in competition, technologies, network position, or stakeholder demands) and has a direct impact on the outcomes (financial performance, innovativeness, cost reduction, etc.).

Third, it is important to emphasize that when the concept of sustainability is introduced in the business model, it is necessary to orient the organizational design towards the challenges that this implies: the co-creation of profits, social and environmental benefits and the balance among them; the integration of technology innovation (such as clean technology); the commitment in extensive interaction with external stakeholders and business environment; and the use of business modeling methods and tools.

Fourth, and with a more integral and long-term perspective, the notion of strategy is a key shared factor between sustainable business models and organizational design [3]. More precisely, the dimension of strategy could be the definition of the direction taken by the company in order to achieve its objectives, and it is linked to customer segments, channels, and key activities. Although this last idea shows the potential complementarity of both frameworks, the literature discussing how

these two conceptual constructs may complement and support the design of a sustainable organization is limited.

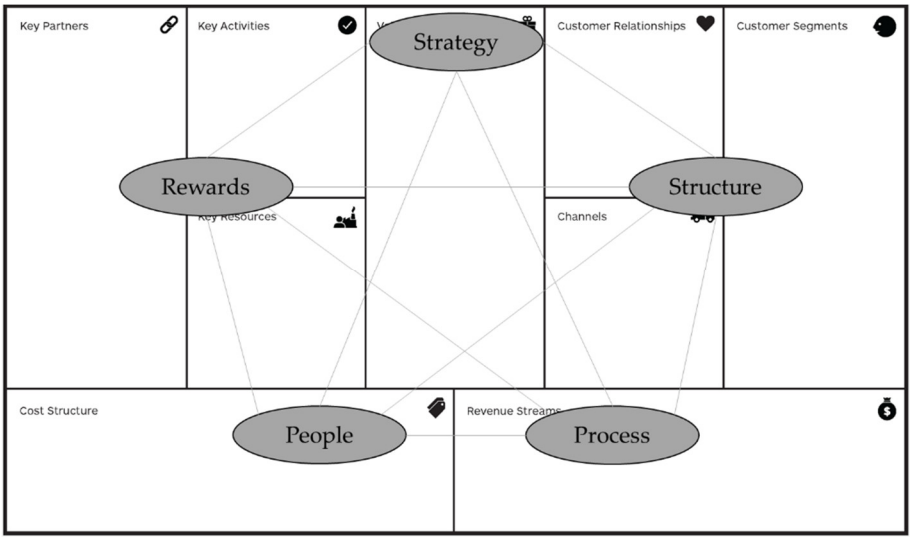

Figure 2. Star Model on the business model canvas setting, own development, based on [34].

2.4. Research Question

Recent reviews published on sustainable business models [10] and business model innovation for sustainability [23] have highlighted a gap in the design-implementation of sustainable business model innovation. This, together with the previous theoretical framework presented, suggests the following research question that guides this research: "What are the existing approaches in organizational design for sustainable business models?"

3. Research Methodology

For decades, an evidence-based approach in research has been the foundation of research in many disciplines [38]. One of the tools for this research category is the systematic review of the existing literature, which is an attempt to synthesize a field of knowledge reducing researcher bias regarding the inclusion or exclusion of certain studies [39]. It seeks to summarize existing research and also identify the conceptual foundations of a given topic by means of a three-stage general approach, as suggested by Tranfield et al. [38]: (i) planning the review, (ii) conducting the review, and (iii) reporting and disseminating results. The process adopted in our research follows the PRISMA statement [40], which is an update and expansion of the QUORUM statement [41]. It comprises the following phases: identification, screening, eligibility, and including (see Figure 3).

In this work, a systematic literature review was considered the most appropriate method for identifying the theoretical perspectives used for organizational design in the context of sustainable business models. The initial data collection contained 394 titles/abstracts found in the Web of Knowledge (WoK) and Scopus databases that were published by the retrieval date of May 8th, 2019. We decided not to limit the time frame of the search, with the oldest reference matched from 2002. The search was conducted with the following string: TITLE (business AND model*) AND TITLE-ABS-KEY (sustainability) OR TITLE-ABS-KEY (sustainable) AND TITLE-ABS-KEY (design).

From this initial sample, relevant cross-references were identified, which added 10 more articles to the database. We then analyzed the database to identify and eliminate duplicated references, which lowered the number of references under study to 284. The screening process then continued by reading the abstracts of the 284 papers and retaining only those that were deemed relevant for organizational design, ending with a final number of 48 papers. Of these, only the ones relevant for Galbraith's star model were finally included in the research, which meant a total of 19 papers. In order to avoid selection bias [42], these tasks (steps 2 and 3 from Figure 3) were performed by the first and second authors of this paper, who worked on independent spreadsheets, which were integrated after a joint discussion.

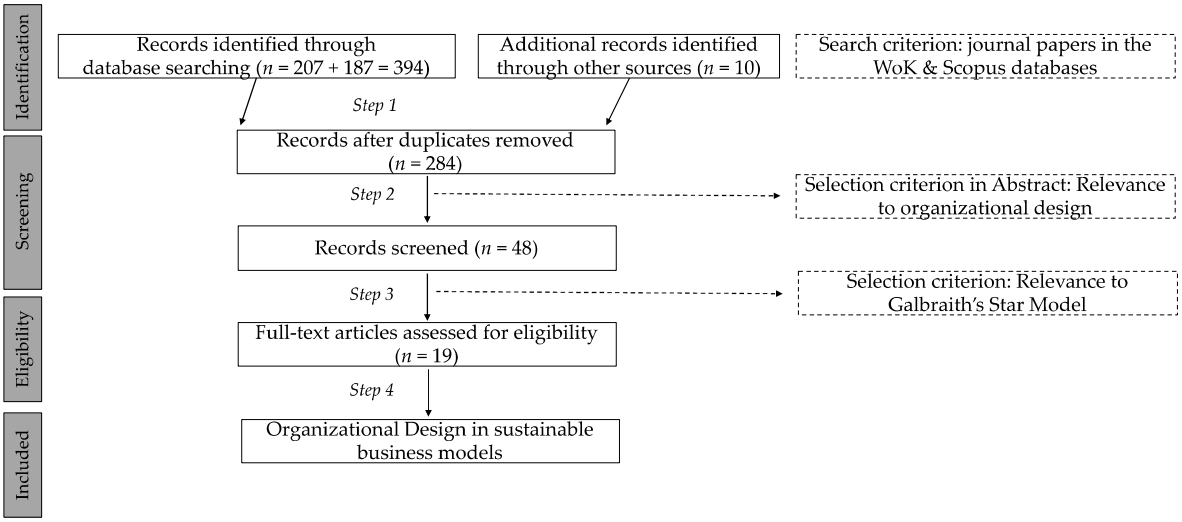

Figure 3. Research process flowchart.

It is worth mentioning that when dealing with sustainable business models, Professor Nancy Bocken from Lund University and the Cambridge Institute for Sustainability Leadership is an inevitable reference, due to the breadth and width of her contributions. Nevertheless, we filtered the publications from Bocken's network to only include the ones that truly provide insights to the topic. For instance, the value mapping tool [43] was included in the review, but the recent contributions on ecologies of business models [42] or consumer behavior [44] that deal with the forces acting from outside the company, and are not linked to organizational design, were not included.

4. Results

4.1. Descriptive Findings

This subsection presents the objective features of the papers included in the sample, as an interpretation of the calls of Moher et al. [42] and Liberati et al. [43] for an unbiased presentation of results. In this sense, year and journal of publication, together with the methods in use are summarized, while the interpretation of results in terms of organizational design follows in Subsection 4.2.

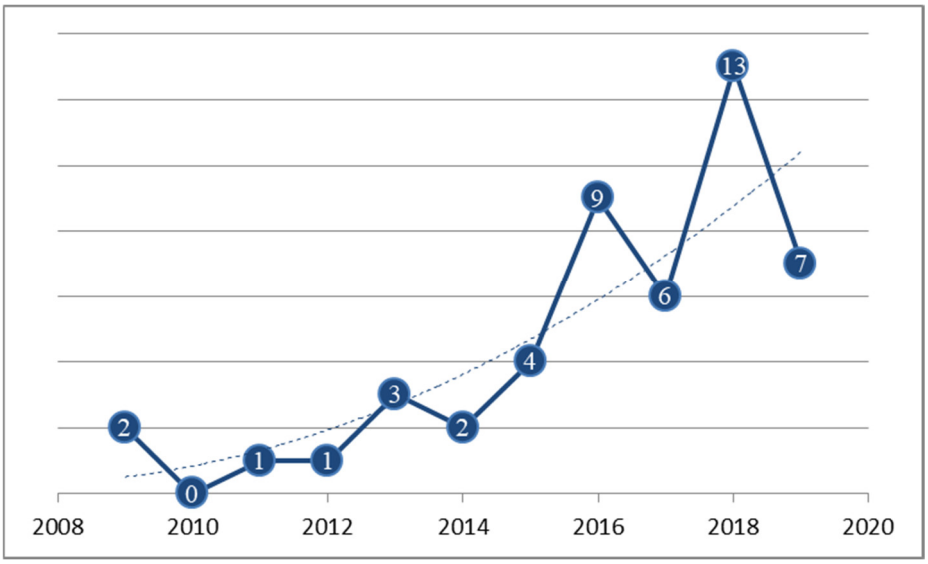

Figure 4. Distribution of research articles focusing on sustainable business models.

In terms of year of publication, the search was not restricted to a given period, as mentioned above. However, in terms of relevance to sustainable business models, the final sample comprises papers from 2009 to 2019, as displayed in Figure 4. The average number of articles per year during this study period is 4.8, with a remarkable increase in the number of articles published since 2013. This finding suggests that sustainable business models are a relatively new and growing research area.

Regarding the distribution by journals, *Sustainability* and *Journal of Cleaner Production* are the leading sources of published articles related to organization design in sustainable business models, with six and five papers included in the final sample, respectively. Figure 5 shows the distribution of the selected set of research articles per journal, in which those finally included are highlighted.

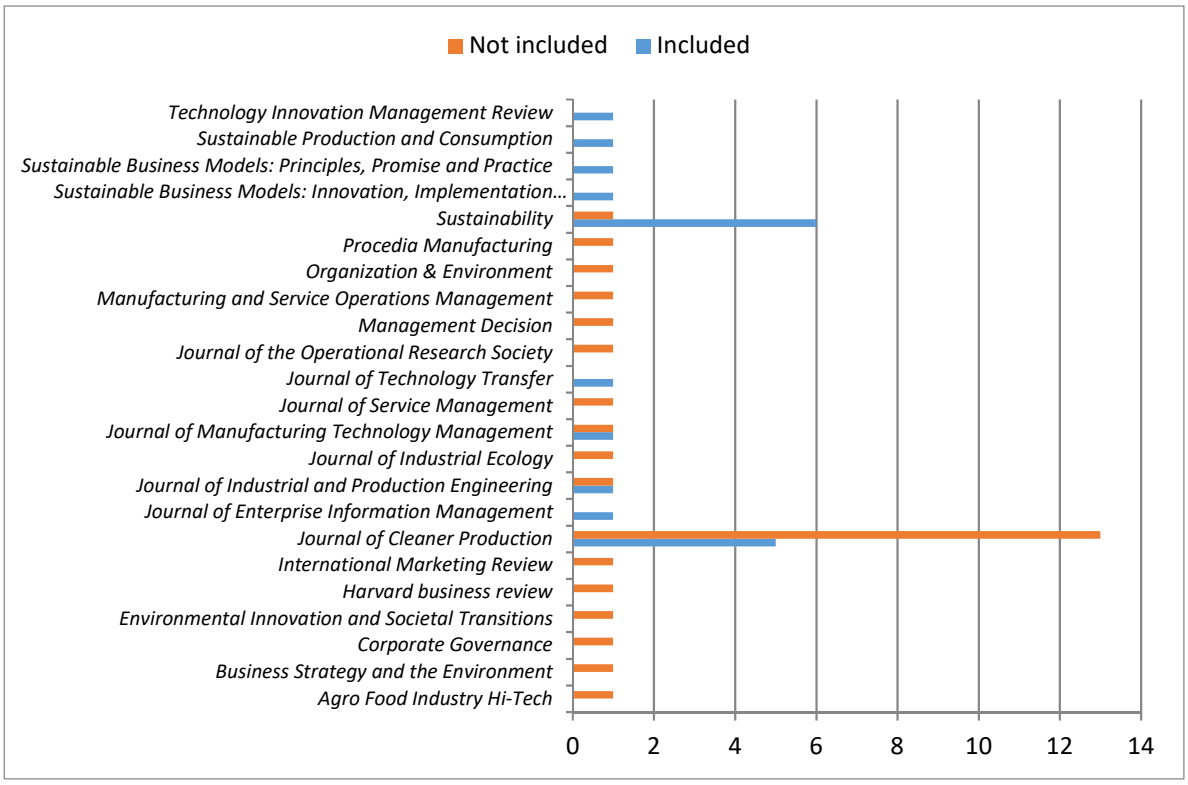

Figure 5. Distribution of research articles by journal.

The methodological approaches followed in the 19 papers of the final sample are summarized in Figure 6. Case study research is the most common methodology (eight references), closely followed by literature reviews (seven). Two other methodologies have been identified: conceptual papers (three references) and focus groups (one). The importance of qualitative methodologies in the sample highlights the novelty of the topic. The details of this methodological design analysis are included in Table A1 in the appendix.

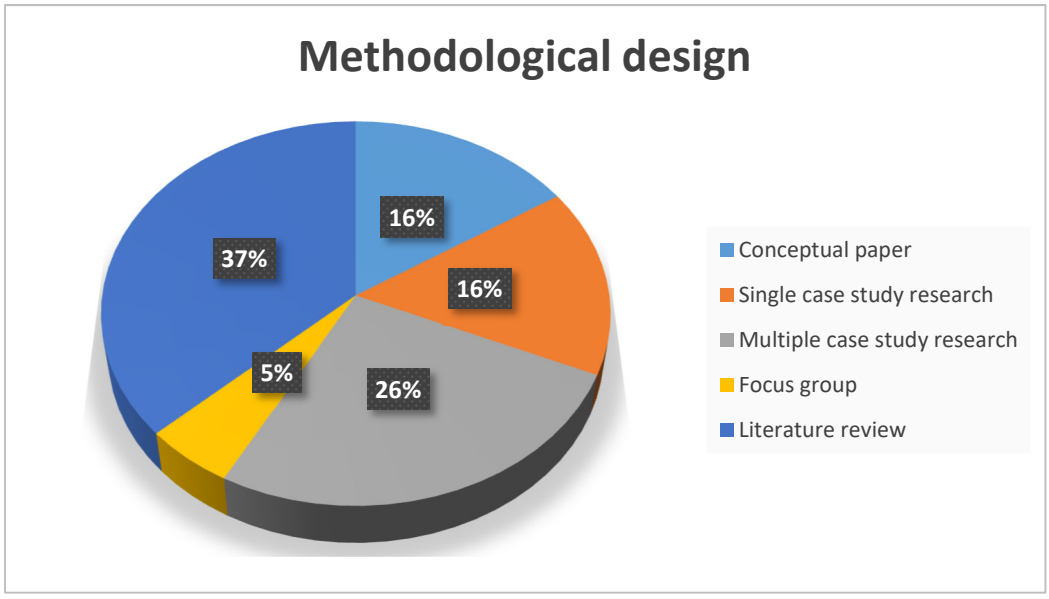

Figure 6. Distribution of methodological approaches in the sample.

Figure 7 summarizes the sustainability approach followed in the 19 papers according to the three pillars: economic, social, and environmental. The predominant pillar is environmental, for two main reasons: either (i) the examples used by the authors mainly concern company cases that enhance the benefits to the planet; or (ii) the scope of the sustainable business model is bounded primarily to environmental benefits such as the case of the sharing economy, circular business models, or product-service systems. The details of this sustainability analysis are included in Table A2 in the appendix.

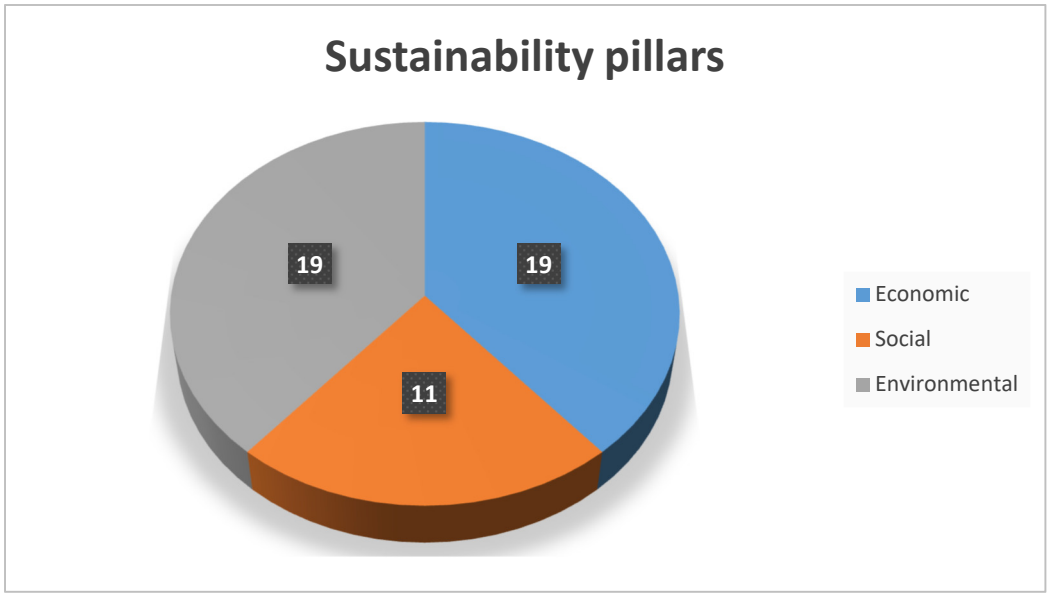

Figure 7. Distribution of sustainability pillar approaches in the sample.

Although these results favor the economic and environmental pillars, Borland argued that "when the triple bottom line is adopted, invariably, it is the economic dimension that dominates, and the social and environmental dimensions become token afterthoughts or measured against the economic dimension" [45]. Along these lines, McDonough and Braungart also suggested that "a triple bottom line approach improves the balance of the three, yet, the balance of the equation still favors humanity with two -economic and social- dimensions versus one -environmental- dimension. In fact, socio-cultural well-being is usually dependent on economic (financial) well-being" [46]. Therefore,

the social well-being is tightly associated with the economic well-being of a firm, which is why the social benefit might not appear explicitly in the selected papers.

4.2. Organizational Design Approach

The existing evidence is presented grouped in the five sections that form the Galbraith Star Model; namely: (i) strategy, (ii) structure, (iii) process, (iv) people and (v) rewards. Within the selected set of papers, four out of five factors of Galbraith's Star Model have been detected when dealing with sustainable business models, as summarized in Table 2.

Table 2. Results of the literature review.

Reference	Strategy	Structure	Process	Rewards	People
Geissdoerfer; Vladimirova; Evans (2018) [10]	X				
Bocken, Short, Rana, Evans (2014) [14]	X		X		X
Ünal, Urbinati, Chiaroni, (2019) [17]	X				X
Bocken, Rana, Short (2015) [44]	X				X
Borland (2009) [45]	X				X
Nidumolu et al. [47]	X				X
Duran-Encalada and Paucar-Caceres (2012) [48]	X				X
Girotra and Netessine (2013) [49]	X	X	X		
Zollo et al., (2013) [50]	X	X	X		X
Reim et al., (2015) [51]	X	X	X		
Antikainen and Valkokari (2016) [52]	X		X		X
Bocken, de Pauw, Bakker, van der Grinten (2016) [53]	X		X		X
Bocken, Short (2016) [54]	X		X		X
Geissdoerfer, Bocken, Hultink (2016) [55]	X		X		X
Jablonski and Jablonski (2016) [56]	X	X			
Jablonski (2016) [57]	X	X			
Joyce and Paquin (2016) [58]	X		X		X
Lewandowski (2016) [59]	X		X		X
Moreno et al., (2016) [60]	X		X		X

Note: Each X indicates that the content of the study is related to an organizational design element, otherwise it is blank.

4.2.1. Strategy

Strategy is the most common organizational design element covered among the sample of papers (accounting for the 19 references in the final sample, see Table 2) and is described in this section from two different views. The first view looks at the discourse's distance from the strategy formulation to the strategic implementation (related to the tactics at business level). In this sense, the contributions of the sample are divided among those that contribute with strategy at a high decision level on the company ("where we are, where we go"); those that present tools for managers ("if we know where we go, we need to decide how"); and those that propose tactics (that is, implementation plans, "what do we do, in our current setting, so that we can match these requirements"). Secondly, the contributions are grouped according to the type of business on which they focus (circular economy, social economy, service economy or general business type).

In terms of high-level strategy, the first two papers of the sample share the same view. On one hand, Borland [45] established that corporates are only one facet of sustainability: governments and consumers should also take part on it. On the other hand, Nidumolu et al. [47] posited, in their seminal paper from *Harvard Business Review* (cited 2050 times as of July 2019), that companies should get rid of the traditional paradigm linking the introduction of sustainability with an increase in costs. Contrarily, the implementation of sustainability via innovative products and processes should be understood as a competitive advantage for companies.

We consider authors contributing to the strategy of companies discourse at an intermediate level to those who struggle to settle frameworks that can be used to plan actions at different sub-systems

(departments) of the company. In our opinion, this is where tools such as the business model canvas [26] play a role. Four of the 19 papers deal with strategy at this level. Two of them [61,62] anchor on the model proposed by Osterwalder and Pigneur [26]. Lewandowski [62] adapted the business model canvas to be used for the circular economy by adding two new factors to the business model canvas. Similarly, Joyce and Paquin [61] proposed incorporating two more layers to the business model canvas. The first layer accounts for the environmental life cycle of products, while the second stands for social stakeholders' interests.

Girotra and Netessine [48] presented a new conceptual model that facilitates identifying how to innovate on a sustainable manner the business model, highlighting four elements of the decision context: what decisions are made, when they are made, who makes them, and why they are made. Contrarily, Zollo et al. [49] presented a framework for solving sustainability challenges of companies. They highlighted the importance of change initiative, which they linked with the strategic and organizational process through the presented framework.

Finally, the remaining 13 papers in the sample deal with concrete, detailed implementation ways of sustainable business models, where the company is usually taken as a unit of analysis. Attempts have been made to propose business archetypes and taxonomies [14,50], firstly for any business type, and secondly, for the circular economy. The contribution form Bocken, Rana and Short [43] is aligned with this taxonomy strategy in the sense that it deepens it with a "how to do" approach with a value mapping tool.

Educational approaches appear in Bocken and Short [51] and Geissdoerfer et al. [52], focused on sufficiency-based tactic for business, in which clients should not be driven to over-consume, but to buy responsibly [51], and on how to disseminate the generated knowledge that they implement through a workshop, based on design thinking [52]. The recent literature review presented by Geissdoerfer, Vladimirova, and Evans [10] focused on sustainable business model innovation. In a sense, it summarizes much of the work conducted by Bocken and her collaborators over the last five years, highlighting which strategies are to be used in order for business model innovation to be implemented for sustainability.

Other authors identified implementation measures that can be generalized, based on the reports produced by Global Reporting Initiative [53], in a product–service system [54], in hybrid organizations [55], along the life cycle of the company [56], or for the circular economy [17,57,58].

Regarding the second classification, most of the papers (13) draw on sustainability for any type of business. However, a growing number of papers (four) spring from the circular economy literature ([17,50,57,58]), one from the social economy [55], and one from the body of knowledge of servitization [54].

4.2.2. Structure

The structure feature was found in only five references of the final sample. In four of them, operational concerns are risen in terms of designing for sustainability [49,54–56]. Both Reim et al. [54] and Jablonski [55] identified the need for network structures to support the sustainable business model and its multiple stakeholders. Jablonski and Jablonski [56] explored the implications of a structure that enables value creation along the sustainable business model cycle, which should also consider the possible business model transformations over time.

Taking a different view, Zollo et al. [49] argued that the structure and systems of governance to coordinate and control the organization are necessary to organize processes and are components of the organizational adaptive capacity of business model innovation. On the other hand, Girotra and Netessine [48] dealt with who holds responsibility for decision-making in the company.

In all cases, structure is an organizational design element that enables internal and external value creation through the value network and connects stakeholders from within and outside the firm boundaries.

4.2.3. Process

The third most common feature in the sample is process, which can be found in 11 out the 19 references. Seven of these 11 papers propose different ways of organizing the processes within the company [49], either by changing operational practices [54], highlighting resource efficiency [57], closing resource loops [50], including key processes as a way of evaluating the business model [61,62], or using design thinking as a company tool [52].

Bocken, Short, and Rana [14] and Girotra and Netessine [48] both related how information flows in the company, while Moreno et al. [58] called for the implementation of an iterative process within the company for tuning the outcomes in terms of sustainability, and Bocken, Short, and Rana [43] highlighted the importance of marketing in the process.

4.2.4. People

The second most common feature of organizational design on the sample is people, which is accounted for in 14 references. When coding the references, those factors affecting the stakeholders have been included under the people tag. Although this was not meant with the original model, authors believe that organizational design for sustainable organizations should account for them. The rationale of the discussion of results relating to this topic can be seen in Figure 8.

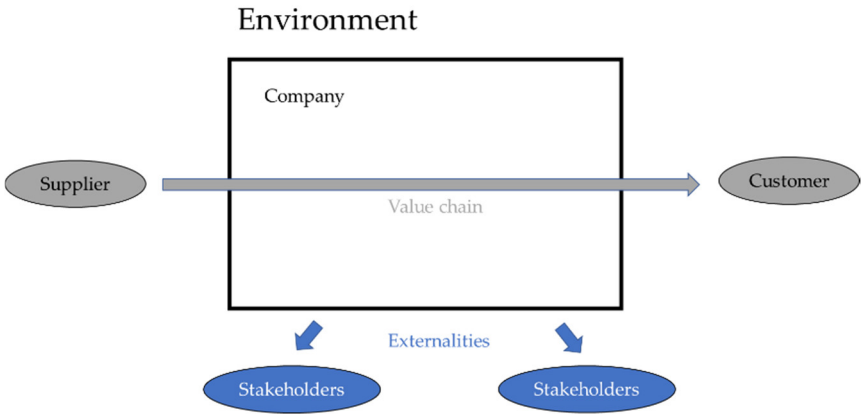

Figure 8. Framework for the people tag in the sample.

First, the original intended meaning of people in the Star Model will be discussed and understood as an internal feature of the company, related mainly to the topics of leadership and the motivation of employees, among others, which is accounted for in five papers. In this vein, Borland [45] paid particular attention to the importance of strong leadership for sustainability implementation, which aligns with the conclusions of Duran-Encalada and Paucar-Cáceres [53], who viewed leadership as one of the relevant indicators of the quality of human factor in the company. On the other hand, the technical skills inherent to the business archetypes proposed by Bocken, Short, Rana and Evans [14] are highlighted, similar to how Nidumolu et al. [47] emphasized human capital. Lastly, the paper that provides more insights regarding this view of the people factor is Zollo et al. [49], which dealt with employees' capabilities, resistance to change, and relational quality.

Secondly, six of the papers in the sample paid attention to clients. Bocken and Short [51] brought consumers to the center, claiming that companies try to educate their clients, in the sense of not over-consuming. Moreno et al. [58] proposed, among their set of issues to consider for circular economy designing, to "design with different participants in the value chain, including your final user". Likewise, the managerial practices proposed by Ünal et al. [17] are also centered on the clients. The final framework for the circular business model of Antikainen and Valkokari [57] also deals with clients, as do the Osterwalder canvas-focused papers from Joyce and Paquin [61] and Lewandowski [62].

Third, three of the papers mentioned the upstream of the value chain. Nidumolu et al. [47] stated that it is not possible to make value chains sustainable if some issues in terms of relation with

suppliers are not accounted for. In a similar manner, Joyce and Paquin [61] and Lewandowski [62] identified key partners as suppliers.

Finally, in three of the papers in the sample externalities are argued to affect stakeholders (other than companies' suppliers and clients). On one hand, Duran-Encalada and Paucar-Cáceres [53] mentioned stakeholder motivation as a key success factor for the implementation of sustainable practices. On the other hand, the value mapping tool presented by Bocken, Rana and Short [43] seeks to include the remaining stakeholders under the value generation concept. The educational approach followed by Geissdoerfer et al. [52] and their proposed workshop based on design thinking also called for the relevance of stakeholders. They claimed that stakeholders need to be involved for the appropriate success of the practices proposed. Finally, the circular business model of Antikainen and Valkokari [57] also accounts for stakeholders.

4.2.5. Rewards

Rewards express how intrinsic and extrinsic motivational factors are set at the company. According to our results, none of the studies on sustainable business models has explicitly addressed the organizational factor of Rewards. While the terms "incentives", "culture", or "motivation" can be found across the sample, they appear tangentially and can be attributed to the People factor, rather than to Rewards.

The Star Model claims that Rewards must be aligned with Structure and Process to accomplish the company's goals and objectives. The absence of this factor in our literature review suggests that the only part of corporate's human resources that need to be considered when developing a sustainable business model is managerial (leadership) and technical skills, with employee motivation not being a key factor in this case.

5. Discussion

5.1. The Extension of the Organizational Boundaries for Design Elements

When we look back to the history of managerial science, we can easily track the first mention to consider the effects of the environment over the company: how competitive forces shape strategy [59]. The effects of the oil crisis in the 1970s swept the previous definitions of strategy that did not account from effects arising from the environment, such as "Strategy is the determination of the long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals" [60]. The Star Model is one of those pre-Porter theories.

Nevertheless, organizational design encompasses the firm boundaries, the extent of the assets owned and controlled by the firm [63]. The evolution towards new business models – that is, sustainability-oriented or circular economy-oriented business models – requires changes to those boundaries, which can be translated into changes to activities, company culture, and control structures [64]. As indicated in the results sections and as shown in Table 3, in the case of sustainable business models, the design element "People" includes not only employees but other stakeholders outside the boundaries of the firm to play a role at the inter-organizational level to be part of the value network (suppliers or clients) or to a broader extent at the ecosystem level in an indirect way via policies and awareness or lobbying mechanisms (government and NGOs). A good example of this is the sustainable strategy followed by Unilever [65]. That company realized that is was not enough to redesign its internal structures and processes or to create an appropriate culture by training and rewarding employees to become a sustainable organization. It needed to extend its training and awareness programs to supplier and clients, it had to create structures to participate in international forums and political associations, and it had to convince its suppliers to also change internally to have a complementary synergy to implement Unilever's sustainability strategy.

Table 3. System boundaries of the papers in the literature review.

System Boundaries	Sustainable Business Models	Organizational Design Elements
Organizational	X	X
Interorganizational	X	-
Ecosystem	X	-

Note: An X indicates that the content of the studies are related to sustainable business models or organizational design elements at the respective system boundary, otherwise it is marked as -.

The results identifying the lack of studies encompassing ecosystem design elements are in line with the findings by Pieroni et al. [23] on sustainable business model approaches at the societal system boundary. With the exception of Schwaninger [66], who proposed a structure for sustainable regional organization, this avenue of research remains largely unexplored. Looking into the organizational design research stream, Mohrman and Worley [1] stated that the building of cross-functional connections and networks of value creation is necessary in order to organize for sustainability. Worley et al. [67] provided an example of this regarding the development of a multi-stakeholder collaboration capability at GAP Inc, as well as Bradbury-Huang [68] on the sustainability by collaboration SEER Case. Figure 9 proposed the addition of the "External Linkages" organizational element to cover up for the orchestrating processes to articulate the organizational design of a firm with its environment, both the direct value network and the ecosystem. Results supported the theoretical position about a constant circular interaction between internal and external actors to the firm's boundaries to nurture the sustainability initiatives, thereby reinforcing the impact of all organizational design elements to deliver and capture economic, social, and environmental value towards people and the planet. Therefore, we encourage that this extended view, including all stakeholders (employees, customers, suppliers, distributors, government, NGOs, users, partners, etc.) be a key point when designing sustainable organization and summing up the calls made by previous scholars [34–37].

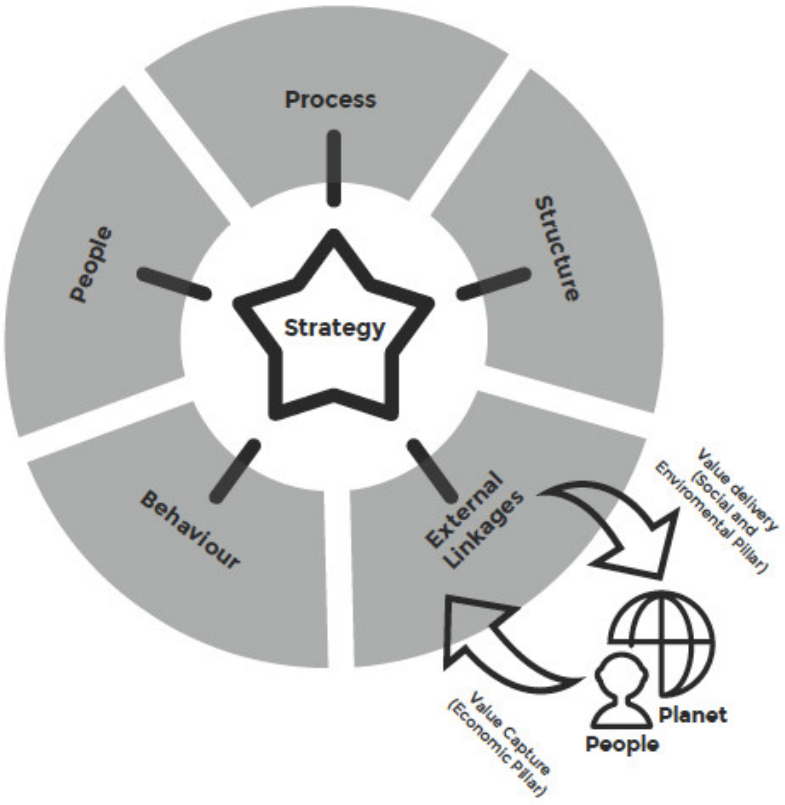

Figure 9. Organizational design for sustainability framework.

5.2. The Lack of Studies Related to the Rewards Organizational Element

It is worth mentioning that Rewards does not appear in any of the papers of the sample. This may be explained in light of the initial view of Galbraith [30] about employees having a pecuniary retribution to keep them motivated in the company. However, we agree with other scholars who preferred to consider a Behavior organizational element that includes not only rewards, but also other types of motivation such as acknowledgements, social incentives, culture, and even leadership [31]. These topics are already being considered in some studies on sustainability and organizational design as well [69,70], with culture being one of the key factors for success. We have included this Behavior element in our framework in Figure 9

It is important to address this research gap because rewards process are also associated with a dynamic capability view to facilitate coordination and organizational transformation, which is fundamental in order to guarantee that the sustainable and circular values are embedded from the beginning in the business model architecture or after the implementation of a new business model [23]. Moreover, people need to learn to think and make decisions differently to incorporate the sustainability approach in their daily work activities [1].

5.3. The Implications of Organizational Design for Strategy Implementation of Sustainable Business Models

As in Casadesus-Masanell and Ricart's paper [3], which highlights the relation and differences between business model and strategy, authors have posited that a business model and the organizational design are also different constructs, but both related to strategy. Business models are conditioned by the firm´s strategy to compete in the market and condition the firm's tactics, which are the residual choices that the firms choose to implement the strategy [3]. We argue that organizational design is a good lens through which to understand these tactics and answer questions such as how the organization form enables firms to execute their intended strategy and why they chose that particular organizational configuration, what are the lessons learned, and, more importantly, whether the organizational design is still evolving along the business model evolution and how it is aligned accordingly. In other words, we consider the organizational design as the tactical logic of the firm that interconnects the strategy, represented in a business model, and the operational level where the strategy is implemented.

This standpoint is in line with recent views on the role of organizational design for business model innovation, such as the mediator characteristic proposed by Foss and Saebi [6], or as a connecting framework in the strategic management posed by Ritter and Lettl [71]. Scholars in the sustainability field have also claimed that strategy can be implemented using different configurations to transform the existing organizational design towards the new sustainable business model [70,72–75]. Finally, making the link between these two concepts more explicit could support other relevant perspectives for creating sustainable value by organizations. For instance, understanding the role that organizational design has for business model creation or reconfiguration could be complemented with the use of tools and methodologies that help operationalize business model innovation [76] or even assess business model sustainable innovations [77] to capitalize on new business opportunities.

6. Conclusions, Limitations, and Avenues for Further Research

This research has sought to shed light on the underlying concepts behind successful sustainable business modeling, and their strategic implementation. Three key findings can be derived from the results obtained:

- First, there is a need to extend the organizational design elements beyond the borders of a firm. Most studies recognize the need for collaboration when it comes to sustainable business models. The integration of value networks is of the utmost importance and requires the identification of inter-organizational and societal design elements.
- Second, there is a lack of studies related to the Rewards organizational element discussing aspects such as incentive systems and human-behavior constructs.

- Third, a common feature of the final selected articles is that they all provide examples of the strategy implementation related to a change in strategy that originated a new business model focused on sustainability. Consequently, we consider that this strategy execution is possible thanks to the configuration of an organizational design that is aligned to the business model. This could indicate that as business models are useful to explain the business logic at the strategic level, organization might be a useful lens to explain the business logic at a tactical level that enables the implementation of the desired strategy.

Implications for academics are the starting point for understanding the foundations of approaches of the design of sustainable organizations, providing guidance for the future. This study provides practitioners with an overview of the importance of organizational design to realize the strategy that they have formulated with their sustainable business model, as well as a set of approaches that could already apply in their firms. Moreover, our results could provide a holistic view to managers to guide their decisions to shift the firm's priorities towards implementing more sustainability-oriented goals and strategies in their organizations' business models. Policy makers need to create mechanisms that enable sustainable companies to better align their business models and organizational design at the network, ecosystem, and sectorial levels.

Despite the present study's contributions, certain limitations are derived from the techniques applied to conduct the systematic literature review. First, the search was done in academic journals, which generates a selection bias by not including books, commercial journals, or practitioner reports. Second, the article search was limited to two scientific databases (Scopus and WoK), while other sources may have covered the subject area. Finally, an interpretation biased on the analysis of the selected articles might affect the results and discussion, despite the effort to triangulate information among authors.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix.

Table A1. Methodologies in use in the final sample.

Reference	Conceptual Paper	Single Case Study Research	Multiple Case Study	Focus Groups	Literature Review
Borland (2009) [47]	X				
Nidumolu et al., (2009) [62]			X		
Duran-Encalada and Paucar-Caceres (2012) [48]		X			
Girotra and Netessine (2013) [49]			X		
Zollo et al., (2013) [50]	X				
Bocken, Short, Rana, Evans (2014) [14]					X
Bocken, Rana, Short (2015) [44]				X	
Reim et al., (2015) [51]					X
Antikainen and Valkokari (2016) [52]		X			
Bocken, Short (2016) [54]			X		
Bocken, de Pauw, Bakker, van der Grinten (2016) [53]					X
Geissdoerfer, Bocken, Hultink (2016) [55]			X		
Jablonski (2016) [57]					X
Jablonski and Jablonski (2016) [56]			X		
Joyce and Paquin (2016) [58]	X				
Lewandowski (2016) [59]					X
Moreno et al., (2016) [60]					X
Geissdoerfer; Vladimirova; Evans (2018) [10]					X
Ünal, Urbinati, Chiaroni, (2019) [17]		X			

Table A2. Triple bottom line approach.

Reference	Environmental	Social	Economic
Borland (2009) [47]	X		X
Nidumolu et al., (2009) [62]	X		X
Duran-Encalada and Paucar-Caceres (2012) [48]	X	X	X
Girotra and Netessine (2013) [49]	X		X
Zollo et al., (2013) [50]	X	X	X
Bocken, Short, Rana, Evans (2014) [14]	X	X	X
Bocken, Rana, Short (2015) [44]	X	X	X
Reim et al., (2015) [51]	X		X
Antikainen and Valkokari (2016) [52]	X		X
Bocken, Short (2016) [54]	X	X	X
Bocken, de Pauw, Bakker, van der Grinten (2016) [53]	X		X
Geissdoerfer, Bocken, Hultink (2016) [55]	X	X	X
Jablonski (2016) [57]	X	X	X
Jablonski and Jablonski (2016) [56]	X	X	X
Joyce and Paquin (2016) [58]	X	X	X
Lewandowski (2016) [59]	X		X
Moreno et al., (2016) [60]	X		X
Geissdoerfer; Vladimirova; Evans (2018) [10]	X	X	X
Ünal, Urbinati, Chiaroni, (2019) [17]	X		X

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