

Review

Building a Theoretical Framework for Corporate Sustainability

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Abstract: Literature about sustainability and sustainable businesses has become a large field of study during the last years. This field is growing so fast that there are sub-areas or bodies of literature within the sustainability which scopes with clear boundaries between each other. This has caused the apparition of several methodologies and tools for turning traditional companies into sustainable business models. This paper aims to develop the descriptive stage of the theory building process through a careful review of literature to create the first phase of a theory about corporate sustainability. It provides the following classification of concepts retrieved from the observation of the state of art: holistic sustainability, sustainable business models, sustainable methodologies, sustainable operations, and sustainability-oriented innovation. In addition, it seeks to establish relationships between the sustainable concepts and the expected outcomes that their implementation can generate among companies and organizations. Finally, it gives an overview of possibilities for managers that want to embed sustainability in their firms and clear paths of research for keeping the building of the theory about corporate sustainability as a process of constant iteration and improvement.

Keywords: sustainability; holistic sustainability; sustainable business models; theory building process; literature review; eco-innovation; sustainable operations; sustainable methodologies; sustainability-oriented innovation



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1. Introduction

The impact of sustainability in our society is so profound that some authors call this phenomenon the sustainability revolution [1]. From a managerial point of view, sustainability comprises the amount of sustainable practices implemented by companies as a response to new challenges and stakeholder pressures. These practices can be applied in several areas of the company, from corporate strategy to business processes [2]. In fact, there is a debate between researchers who state that sustainable practices are only able to reduce costs or improve the company's environmental, social, and governance (ESG) ratings but are not able to build competitive advantage. On the other hand, there are those who defend companies that can integrate sustainability into their strategy and lead them to a better performance and a competitive advantage generation [3].

A survey that analyzed the opinion of more than 1000 global executives has been published, the results of which state that 99% of the surveyed state that "sustainability issues are important to the future success of their businesses" [4]. Moreover, 94% of the executives consider they should link their company's purpose and role within society. The number of CEOs (chief executive officers) that hold that there is no link between sustainability and value generations represents a quarter of the surveyed and only 8% of them consider the lack of knowledge for moving forward to a more sustainable scenario a problem.

Despite of these encouraging results, just 21% of global executives believe their companies are contributing to the UN Global Goals (Sustainable Development Goals) in a significant way.

From an academic point of view, research about the field of corporate sustainability has been increasing gradually since 1996 reaching the peak of 3338 publications in 2019. Figure 1

contains a visual diagram that shows the number of publications about sustainability retrieved from the academic database Web of Science.

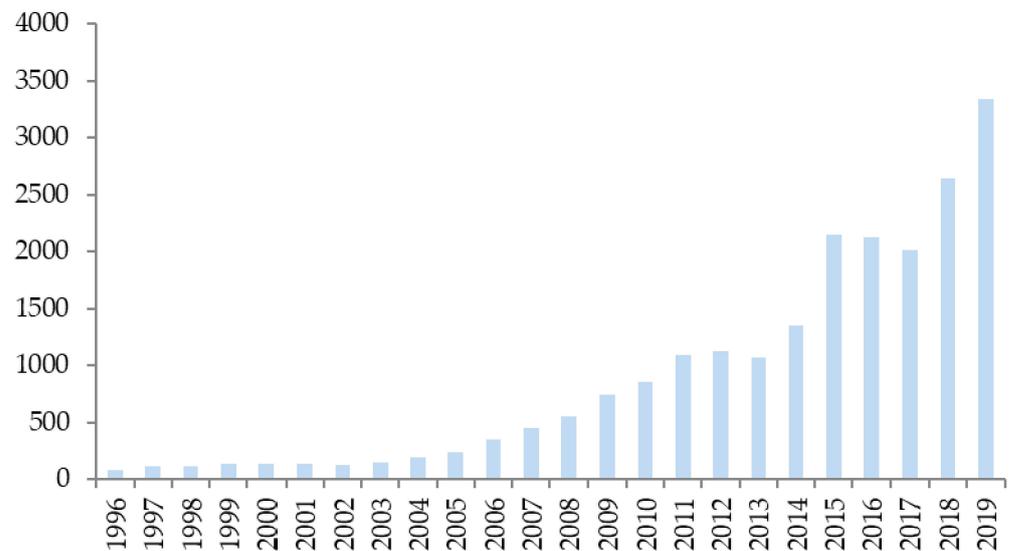


Figure 1. Overview of the evolution of research papers on sustainability (retrieved from Web of Science).

Therefore, this work tries to establish the relationship between the sustainable practices adopted by organizations and the results achieved. The analysis of this relationship has been performed under the frame of the theory building process [5]. Specifically, it aims to analyze the literature about corporate sustainability in order to know the way that managers embrace environmental practices across their processes, business models, innovation orientation, and strategic planning.

We have identified that academic literature on corporate sustainability can be classified in several research fields. The main feature that allows identification of each research field or body of knowledge is the scope of the publications. As was shown above, on one hand, some researchers analyze sustainable practices that only affect concrete business units or business processes. On the other hand, there are researchers that state that sustainable practices need to have a broader unit of analysis and should be handled as managerial issues. Therefore, these research fields offer different strategies and techniques for companies to embrace sustainability.

In addition, sustainable companies, which are those companies that develop their activities according to the ESG (environmental, social, and governance) criteria and measure their impact based on the ESG metrics, are more profitable than those companies that do not care about the environment; investors analyze companies also considering the sustainable practices they carry out. Hence, there are some authors that classify and categorize environmental practices deployed by companies in order to help investors evaluate the degree of adoption of sustainable policies among the organization [6].

There are several areas of study in the field of management that try to help managers make better decisions for their businesses. The field of corporate sustainability or sustainability management shows a similar pattern to the field of management. This area of study was originated by Taylor with his seminal work *Principles of Scientific Management* in 1911 [7], published after the Industrial Revolution. After that, other important works about management were published during the mid-20th century (as e.g., Schumpeter in 1942 [8] or Weber in 1947 [9]). Currently, management is a field of study with a wide range of publications, scientific works, books, and educational programs.

For instance, Porter [10] states that there are two different fields that managers need to take into account when they are going to make decisions: strategic decisions and operational effectiveness decisions. Kaplan and Norton [11] deployed the Balanced Scorecard with the aim of helping executives to align their business's purpose with the strategy and

operations of the organization. Even the field of strategy holds different sub-areas like “corporate strategies”, “competitive strategies”, or “growth strategies” [12].

On the other hand, there are even authors that have developed some proto-theories about sustainability [13,14]; those works have not reached the acceptance like the theories or frameworks published in the traditional management field. Nevertheless, as this topic is getting more complex, it is giving birth to more sub-fields or sub-areas of study and leading to a new way to do business. The establishment of robust frameworks and theories is needed.

For this reason, and using the research works from management field as a mirror to know which is the best way to move forward, researchers working on sustainability topics should make an effort to study the causal mechanisms that lead companies to embrace sustainability in a successful way and to figure out the causality relationships between sustainable variables that will lead to expected outcomes. Therefore, this paper develops the descriptive stage of the theory of corporate sustainability framed in the social sciences [5]. This work might help managers to make their firms more environmentally friendly and improve the efficiency of sustainability programs that might be implemented among their organizations.

The deployment of this theory has made it possible to outline and classify the state of the art about sustainability in order to provide a common language for the literature needed to analyze and implant in organizations depending on the unit of analysis.

The results section shows an approach of how the data retrieved can fit within the first phases of the theory building process. Thus, the theory of corporate sustainability will allow managers to know what actions to develop in their companies in order to obtain expected outcomes.

Finally, the discussion and conclusion sections explain how the process of building a theory can improve the decision-making process of managers and new lines of research.

2. Materials and Methods

In order to classify the literature about sustainability and to build the theory of corporate sustainability it was necessary to deploy two systematic literature reviews about the following research fields:

- Theory about the theory building process.
- Corporate sustainability.

2.1. Literature Review of Sustainability

The main objective of the literature review of sustainability was the identification of the most important publications in order to establish a classification of different types of units of analysis in the topic of sustainability.

To facilitate the process of selection criteria, it was necessary to create a review protocol. Figure 2 shows the process followed and explanations can be found in the next sections.

The literature review process took place from September 2018 to April 2019. During this process, authors identified publications related to sustainability through a bibliographic search. The information retrieved was selected from peer-reviewed literature, and from reports and publications from gray literature.

The academic databases employed were Web of Science and Google Scholar using the following combination of keywords: sustainability, strategic sustainability, sustainable business model, eco-innovation, and sustainable methodology.

The research process followed a broad strategy in order to create a wide point of view of the current state of the art on sustainability. The gray literature was also necessary because this is a topic which is rapidly expanding and there is a remarkable interest from several players. In fact, there are non-academic organizations like companies, foundations, and non-governmental organizations (NGOs) (listed in Appendix A) publishing rigorous data which deserve to be examined.

The research retrieved a total of 138 publications.

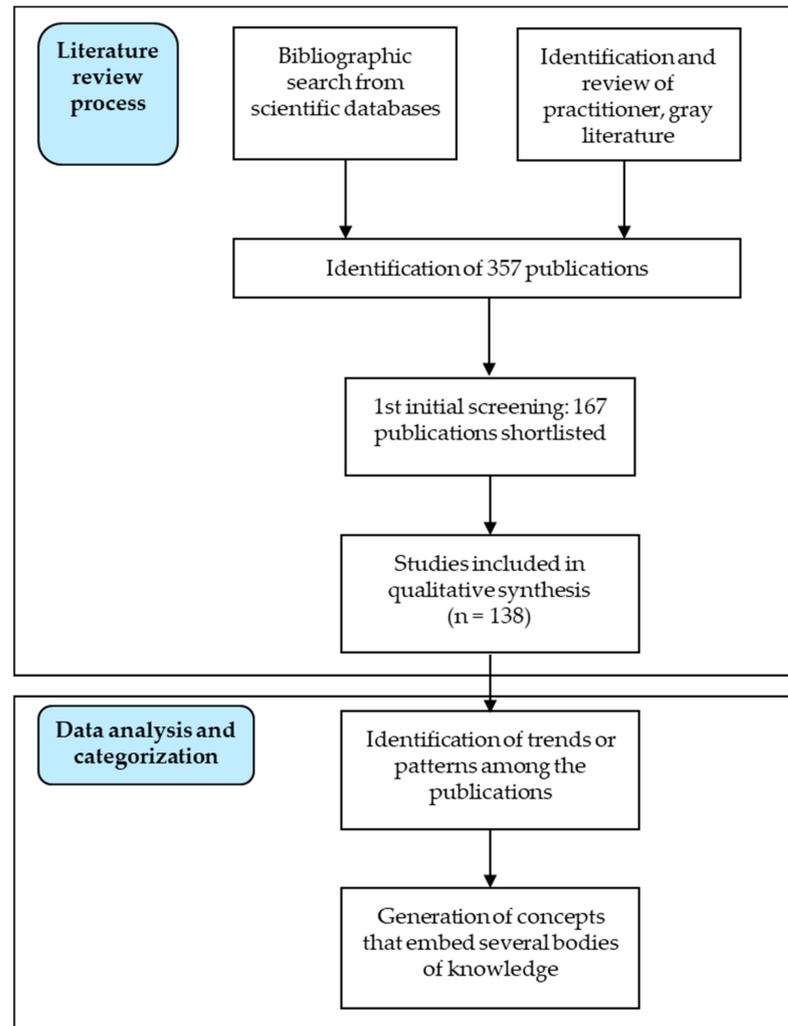


Figure 2. Overview of the literature review and analysis process deployed in this paper.

Shortlisting of Sustainability Topics

Sustainability or corporate sustainability is a broad concept that encompasses numerous sub-topics. Although this review process needed a wide scope, it was necessary to establish boundaries and develop a filtering process with the aim of selecting the most rigorous works. Table 1 summarizes the selection criteria of the publications that were analyzed during the process of literature research.

Table 1. Overview of the selection criteria of the publications.

No.	Criteria	Description
1	The publication must be relevant to sustainability.	The initial screening was focused on the corporate sustainability or how companies embrace sustainability in their day a day.
2	The scope of the publication encompasses one or more business areas.	The scope of the publication needs to be addressed to companies and businesses from a managerial point of view.
3	The publication must contain data rigorously documented.	Data used in these publications need to be rigorous and results need to be replicable by other researchers.
4	Tools and procedures need to be validated in practice.	Tools and procedures need to be tested and documented in the publication. In addition, authors have to illustrate the results obtained through the application of the tool or procedure.
5	Tools and procedures are ready to use.	Tools and procedures need to be replicable by experts in other businesses or organizations.

After the shortlisting process, 138 publications met the requirements of the selection criteria. The list of the final selection of publications is provided in the Appendix B. To ensure the accuracy of the literature review process, all the publications were independently examined by the authors.

2.2. Literature Review of Building Theories in Social Sciences

The literature research on theory building processes was conducted through a snowballing procedure [15]. This technique has been used in other works related to the analysis of sustainable business models like Geissdoerfer et al. [16] and Weissbrod and Bocken [17].

The keywords used for deploying the research were: theory building, social sciences, and theoretical framework.

Data were retrieved from publications in peer-reviewed literature and were also complemented by research across gray literature. Web of Science and Google Scholar databases were used for this process using a combination of these keywords: theory, theory building, theoretical framework, research guidelines, conceptual framework, concepts, and grounded theory.

During the process of snowballing, those papers that established a specific theory and did not show the theory building process were excluded. In total, 20 publications were selected.

There are several works on the theory building process in social sciences [18–26]. One of the main sources of information about the theory building process comes from the work developed by Carlile and Christensen in 2009 [2]. Aside from that, these authors have developed their own theories (i.e., Christensen developed the theory of disruptive innovation [27] and the theory of interdependence and modularity [28], among others).

In addition, to move forward towards the theory building process, it was necessary to develop concepts and frameworks. That was possible through the analysis of the work of Whetten [29], Jabareen [30] and Meredith [31].

The reason for combining the sustainability classification with theory building processes comes from the importance of developing publications that enable managers to know what actions will lead them to the outcomes they expect depending on the circumstances in which they find themselves [5].

3. The Theory Building Process

The theory building process lies in the identification of the causal mechanisms that lead to specific results. The theory building process deployed for this paper is based on the formal definition of theory [32–34] using the empirical research process [35].

The descriptive stage of the theory building process was developed according to the methodology proposed by Carlile and Christensen [5] (Figure 3).

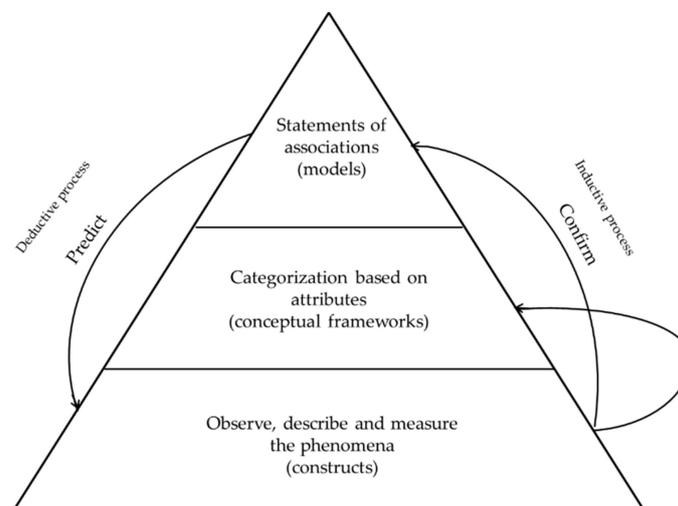


Figure 3. Process of building theory [5].

Figure 3 shows that there are two sides to every lap around the theory-building process: an inductive side (descriptive stage) and a deductive side (normative stage).

Within the descriptive stage researchers have to go through the following steps:

- **Observation:** During this process, researchers observe phenomena, and describe and measure all the details they perceive. The data extracted from the phenomena analysis often generate abstractions that can be termed “constructs”.
- **Categorization:** This categorization attempts to simplify and organize the information in order to detect relationships between the phenomena and expected outcomes. During this process, researchers can refer to these schemes as either “concepts” or “conceptual frameworks”.
- **Associations:** During this step, researchers analyze the correlation between attributes and the outcomes observed. This gives birth to statements of associations, which can be also called “models” [36] (p. 30).

Descriptive Theory Stage

The phase of observation was developed through the careful literature review process explained above. Then, the classification phase consisted of the organization of the results identified during the observation phase into concepts. In the results section, there is the set of concepts that was designed.

Meredith [31] (p. 5) presents the following approach to defining a concept: “a concept is a bundle of meanings or characteristics associated with certain events, objects, or conditions and used for representation, identification, communication, or understanding”.

During the last phase of the descriptive stage, it was necessary to deploy an analysis of the correlation between attributes and outcomes observed. This gave birth to statements of associations.

4. Results

This section shows the results obtained in the development of each stage of the building process of the theory of corporate sustainability (observation, classification, and definition of relationships) and what the relationships are between them.

4.1. Observation

In this case, the phase of observation was carried out through a meticulous process of literature review of academic papers, publications from private companies, and reports.

Sustainability has evolved dramatically over the last years. Decades ago, public administrations and governments started to develop environmental legislation that needed to be accomplished by corporations, especially large corporations like companies from oil industry or big pollutants. Then, international organizations created voluntary certificates like ISO 14001 (International Standard Organization) or EMAS (Eco-Management and Audit Scheme). In addition, those corporations that wanted to go one step beyond had the chance to design eco-innovative practices among their business processes. These kinds of practices allowed companies to make products decreasing the environmental impact or launching new products whose consumption does not harm our planet.

Currently, new business models that place sustainability in their core and purpose are emerging. Hence, those companies try to offer value to customers enhancing a sustainable society.

During the observation phase, it was remarkable to notice that there are numerous ways to tackle sustainability from a business point-of-view and, apparently, all of them lead to better results for companies, such as more turnover, higher number of customers, better customer engagement, or more operational efficiency.

4.2. Classification

The analysis of the state of the art showed that there are different types of bodies of literature about sustainability. These fields of research are framed under the area of

sustainability because they pursue the improvement of environmental practices through all the areas of the company's value chain.

However, setting boundaries between each body of literature is determined by the researchers' different perspectives on their works to tackle climate change. For instance, the environmental policies and practices suggested by researchers can affect only a specific area of the company or they can be transversal throughout the organization. Some groups of policies can be just focused on reshaping processes whilst others have a holistic approach and transform the relationship between the company and its stakeholders.

There have been some attempts to draw the boundary between different concepts or bodies of knowledge from academic literature, the aim of which is to classify the sustainable practices that companies can implement in their organizations to become more sustainable [37,38].

Consequently, those groups of bodies of literature, according to the literature of theory building process, may generate concepts that will lead to further relationships between each other.

In order to offer an accurate classification of the different ways companies can become sustainable, it is necessary to determine the appropriate level of abstraction of each of the concepts, which will allow researchers to classify each type of sustainable action in its concept.

4.2.1. Concepts

According to Jabareen [30], concepts need to be deconstructed to identify their main attributes, characteristics, assumptions, and role. The bodies of literature detected in the classification phase have clear boundaries with their own attributes and characteristics, so they can be considered "concepts". The following table (Table 2) shows the name of the concepts, a description of each concept, a concept categorization according to its ontological, epistemological, or methodological role, and the most important references for each concept.

Table 2. Name, description and concept categorization from each sustainability related concept.

Concept	Description	Concept Categorization	References
Holistic sustainability	Policies with a long-term vision with a broad perspective that encompass sustainable actions to reshape the interaction of the company with its stakeholders.	Ontological concept	Porter and Kramer, 2011; Nidumolu et al., 2009; Ioannou and Serafeim, 2019
Sustainable business models	Business model that creates competitive advantage through superior customer value and contributes to sustainable development of the company and society.	Epistemological concept	Lüdeke-Freund, 2010; Schaltegger et al., 2016; Bocken et al., 2014
Sustainable methodologies	Methodologies and tools designed for managers to improve the company's performance and sustainability.	Methodological concept	Joyce and Paquin, 2016; França et al., 2016; Bocken et al. 2013; Rodríguez-Vilá and Bharadwaj, 2017
Sustainable operations	Activities and business processes that reduce the environmental impact only focusing on specific areas of the organization (i.e., product development, waste management, eco-innovation, etc.).	Methodological concept	Segarra-Oña, 2012; Cheng et al., 2014
Sustainability-oriented innovation	Research field that combines two or more concepts to improve sustainability among corporations.	Methodological concept	Hansen and Große-Dunker, 2013; Geradts and Bocken, 2019

The creation of these concepts sets boundaries which are essential to decide which areas the company will innovate in and what the scope will be [39]. For instance, sustainable practices classified in the concept of sustainable operations, such as life cycle assessment (LCA), need a clear scope that determines the areas of the company that will be studied in order to calculate the environmental impact [40].

However, it is harder to identify if some activities are only circumscribed to the concept of sustainable operations or they surpass the boundaries to the concept of sustainable

business models. This issue was studied back in 1971 by Habermas and Luhmann [41], who defended human beings' work to reduce complexity through the implementation of system boundaries. In fact, the design of those boundaries and concept creation are essential stages of the theory building process presented previously.

Holistic Sustainability

The concept of holistic sustainability refers to those works that state that sustainability is another component of companies' strategies. These types of papers or reports conceive sustainability as a transversal topic that should be a part of the corporate culture and all the departments (from operational level to the board of directors).

Since this concept considers sustainability as a part of companies' strategy, it also includes the relationship between the company and its stakeholders. For this reason, literature encompassed in this concept shows practices that strengthen the link between company success and community improvement. In fact, these authors state that companies need to work closely with all the stakeholders in order to achieve superior levels of environmental care.

One of the most prominent authors on holistic sustainability is Michael Porter through his work on shared value [42]. Other contributors to this concept are Nidumolu, Prahalad, and Rangaswami [43], who demonstrate how companies that want to become sustainable need to go through five stages, from taking compliance as an opportunity to develop sustainable business models and creating next-practice platforms. Therefore, these authors hold that companies, on their way to becoming environmentally respectful, first need to look into internal aspects and improve their operational effectiveness and to introduce new processes and methodologies. Secondly, once those stages have been overcome, the next stages are to transmit the sustainable culture from the company to stakeholders and the rest of the community.

The work being done by Ioannou and Serafeim [3,44] is also remarkable; they are contributing to the elevation of corporate sustainability to a strategic topic that managers need to consider conscientiously. In this case, they are developing their research in several ways. On one side, their studies determine how ESG ratings and metrics can help investors to analyze companies. On the other side, they are also working to compare the performance between companies from the same sector that are implementing sustainable practices.

Sustainable Business Models

The literature about sustainable business models is abundant and it has become more abundant due to the creation of the business model canvas designed by Osterwalder and Pigneur [45]. In fact, Osterwalder's canvas was adapted by Joyce and Paquin [46], who created the "triple layered business model canvas" as a tool for turning traditional business models into sustainable business models (which will be explained in the section "Sustainable Methodologies").

Some of the most prominent researchers on sustainable business models have defined this topic as "a business model that creates competitive advantage through superior customer value and contributes to a sustainable development of the company and society" [47] (p. 23).

Traditionally, companies used to hold profit maximization as their mission and main purpose [48]. For this reason, one of the most important challenges and hurdles that sustainable business models have to deal with is to design an organization able to capture value through delivering social and environmental benefits and increase profits at the same time [49].

Bocken, Short, and Evans [50] proposed a classification of sustainable business models according to the type of sustainable innovation developed (Table 3). These innovations entail:

Archetypes included in the technological group are those based on manufacturing processes, redesign, etc. The social archetypes include innovations based on consumer behavior or consumer offering. Organizational archetypes are innovations focused on changing the fiduciary responsibility of companies.

Table 3. Groups of archetypes and examples proposed by Bocken, Short, and Evans [50].

Group	Archetype	Examples
Technology	Maximize material and energy efficiency	Low carbon manufacturing/solutions
	Create value from waste	Circular Economy
	Substitute with renewables and natural processes	Move from non-renewable to renewable energy resources
Social	Deliver functionality rather than ownership	Result oriented-pay per use
	Adopt a stewardship role	Biodiversity protection
	Encourage sufficiency	Product longevity
Organizational	Repurpose for society/environment	Not for profit
	Develop scale up solutions	Crowd sourcing/funding

In addition, there is a simpler classification that divides sustainable business models into four categories [51]. This classification is based on the revenue streams of the company and the way that costumers deal with products and services:

- Circular economy: Seeks to replace linear production-consumption systems for circular systems reducing, reusing, recycling, and recovering materials [52,53].
- Sustainable production: Creation of goods and services using processes and systems that are non-polluting; conserving of energy and natural resources; economically viable; safe and healthful for employees, communities, and consumers; and socially and creatively rewarding for all working people [54].
- Servitization: Process of shifting from a product-oriented business to a service-oriented business [55].
- Sustainable consumption: This is a decision-making process from the consumer's point of view that involves the consumption of products and services taking into account their needs and also the social and environmental impact of their decisions [56].

Sustainable Methodologies

The concept of sustainable methodologies encompasses not only methodologies but also the certificates and tools that managers use to implement sustainability in their companies. On one hand, this concept includes those methodologies and tools that affect several areas of the business and their objective is the integration of sustainability in the business model. On the other hand, those techniques that can only be applied in a single unit of business will be classified under the concept of sustainable operations.

Nonetheless, even in the strategic and entrepreneurial field, there are several methodologies widely accepted by entrepreneurs, consultants, researchers, and company owners (i.e., business model canvas, value chain or Porter's five forces). However, there are still no methodologies regarding the sustainability field that are well-known by experts.

Some of the benefits of the sustainable methodologies are that they offer a guide with the steps that need to be accomplished by managers and they can give rise to decisions that need to be made by board members.

Some of the sustainable methodologies that are included in this concept are:

- Sustainable business model canvas: Variation of the business model canvas [45] that adds new layers in addition to the original. New layers are based on sustainable and social attributes for developing sustainable innovation programs and sustainable business models [46].
- Framework for strategic sustainable development: This methodology has several intervention areas for embracing sustainability. It is necessary to perform an analysis of some of the business areas (i.e., value chain) to establish a new mission and vision, and develop actions and tools that will help to achieve the new sustainable objectives [57].

- RESTART: These authors designed a framework to help managers turn their companies into sustainable business models. RESTART categorized three groups of categories of features that, according to authors, are easily found among sustainable business models. These features are redesign, experimentation, service-logic, circular economy, alliances, results, and three-dimensionality [58].

In addition, this concept also includes the methodologies deployed to monitor the integration of sustainability within the company. For instance, the GRI (global reporting initiative) would be an example of methodology that fits with the definition of the concept of sustainable methodologies (GRI is a well-known procedure to standardize the way that companies deploy sustainable practices and the expected outcomes they try to achieve [59]).

Additionally, there is a certain body of literature that identifies the sources of sustainable value creation. Sustainable value is defined as the generation of value through social and environmental improvements addressed to the company's stakeholders [60].

The most common tool used by entrepreneurs, consultants, and company owners in order to unravel the way organizations can create value for a long term is Porter's well-known "value chain" [61]. According to him, organizations can create value in the following ways:

- Reducing costs for customers (not only monetary costs, but also reducing waste production, reducing labor time, reduction of required resources, reduction of maintenance, risk failure reduction, reduction of the time required for doing the job, etc.).
- Improving the customer's performance.
- Increasing the value chain singularity.

Currently, no methodology for analyzing sustainable value creation is as widely accepted as Porter's value chain. However, some authors have created methodologies for generating value through the value network of a sustainable business model.

- Shareholder-value framework: Model built using two dimensions that create tension for companies. One dimension reflects the timeline for executing actions (short- or long-term actions) and the other dimension reflects the need to grow from an internal and external perspective. Therefore, depending on those dimensions, the sustainable value creation will be deployed across different types of drivers [62].
- Value mapping tool: This methodology is focused on shifting the value proposition of companies to a sustainable value proposition. Therefore, it identifies sources of value creation for customers, society, environment, and the rest of the stakeholders [60].

Sustainable Operations

The concept of sustainable operations refers to those actions and practices that are circumscribed to a specific business unit (i.e., production, logistics, etc.). Unlike the concept of holistic sustainability, the implementation of sustainable operations does not need a transversal intervention from the board members, middle managers, and employees. In fact, research on sustainable operations is focused on improving the sustainability of certain processes of the company. This concept includes papers and reports about these groups of actions:

- Green certificates (e.g., ISO 14001, EMAS, or BREEAM—Building Research Establishment Environmental Assessment Methodology).
- Analytic tools (e.g., life cycle analysis, sustainable supply chain management).
- Eco-innovative practices (e.g., energy efficiency practices, lighting the packaging, using electric vehicles instead of combustion engines, etc.).

In these cases, companies that implement this kind of action (i.e., developing a life cycle analysis) do not shift their strategic plan. The basis of competition for that company remains intact: the strategy of cost or differentiation will not be changed, the company's value chain will be modified in just a few areas, board members will not need to lead a dramatic change for employees, etc.

In addition, one of the largest fields of research which is embedded in the sustainable operations concept is the study of eco-innovation.

Although there are several ways to define eco-innovation, it can be defined as innovation on products, processes, services, management, or business models that leads to an improvement of the economic and environmental performance. The improvement of the environmental performance comes from a reduction of pollution, environmental risks, and other negative impacts of used resources compared to the alternatives [63,64].

Two types of eco-innovation have been classified: external and internal eco-innovation [65]. On one hand, internal eco-innovation considers the practices and processes that are developed within the company to manage the eco-innovation processes in an effective way. On the other hand, external eco-innovation includes the sustainable activities that involve the relationship between the company and its stakeholders (e.g., suppliers, regulators, etc.). Moreover, depending on the field of action of each eco-innovative practice, it can be classified as:

- Eco-process innovation: Modification of the operational processes and systems of the company which leads to a reduction of the environmental impact [66].
- Eco-product innovation: Reduction of the environmental impacts generated during all the phases of the life cycle of the product [67].
- Eco-organizational innovation: Administrative efforts that will help the eco-process and eco-product innovation to arise more gently from the departments involved in these tasks [68].

Eco-innovation is based on numerous methods that help companies to integrate sustainability among different business areas. Managers need to deal with high levels of uncertainty and complexity for keeping the companies' performance. Therefore, these techniques give managers guidance on how to focus their efforts to achieve their goals regarding the reduction of the companies' environmental impact [69]. However, the implementation of these techniques is not enough to turn a traditional company into a sustainable company. Eco-innovative practice implementation involves a managerial issue that needs to be handled taking into account the corporate strategy from a broad point of view [70].

4.3. Definition of Relationships

During the third step of the theory building process, the concepts presented above were examined with the purpose of finding relationship between them. Thereupon, it was necessary to measure the impact of implementing actions that are encompassed in different concepts in order to know if that combination of actions leads to better results.

There is a line of research called "sustainability-oriented innovation" that has already observed the relationship between different sustainable practices implemented in firms and measuring its impact.

Sustainability-Oriented Innovation

Sustainability-oriented innovation can be defined as an innovation practice that can take different forms, such as the creation of new business models or the modification of business processes that will benefit the environment and society [71,72]. Papers on sustainability-oriented innovation are based on a combination of practices, which could be classified in the sustainable concepts presented above. These papers study the impact of the implementation of these activities.

The range of sustainable practices analyzed by researchers vary from works that only focus on a few concepts [73] to other works that include several concepts in their research and unravel interactions between them and the future expected outcomes [71–75].

One of the most important contributions to this field was the work done by Adams et al. [76]. These authors created a framework which explains what kind of strategy, processes, learning activities, and linkages must be developed to achieve an operational optimization, organization transformation, and system buildings.

Thus, from the point of view of the theory building process, research about sustainability is moving forward toward the next stages of the theory building process. However, the boundaries and scope of this field are still diffused. According to Ulrich (2003) [77], complex interactions where setting boundaries might be difficult need continuous work, which implies that these boundaries could be redrawn. For this reason, sustainability-oriented innovation cannot be considered a concept in the same way as the concepts presented above. Sustainability-oriented innovation, following the work of Flood (2002) [78], presents an approach where corporations and stakeholders define their own boundaries depending on the factors they take into account. Therefore, this approach will assist in the process of the sustainability integration among organizations through the inclusion of practices classified in different sustainable concepts depending on the value creation process and interactions with stakeholders.

In the context of business models, those companies that want to deliver value through sustainability need to develop plans that will need interaction from other stakeholders. Companies cannot become sustainable dealing as an isolated entity [79]. For this reason, corporate sustainability needs to be understood from a broad perspective [39].

5. Discussion

The capability of linking those sustainable concepts with the concepts of strategy and operational effectiveness developed by Porter (1985) [61] is remarkable. Thus, practices embedded in holistic sustainability, sustainable business models, and the literature about sustainable-oriented innovation should be classified as strategic issues, because of their attempt to achieve a perdurable competitive advantage in differentiating the company from its competitors. According to Porter, organizations that hold competitive advantage are able to perform different activities from competitors or develop similar activities as those of rivals in different ways [61].

In addition, sustainable methodologies and sustainable operations are concepts that will fit in the concept of operational effectiveness because these kinds of actions allow companies to deploy a myriad of business processes (production, marketing, delivering, and so on) in a faster way or using fewer resources than rivals.

From a managerial point of view, sustainability should not be siloed or regarded as a department with clear boundaries and tasks. The effect of eco-innovative processes or environmental certificates may report results in the short-term. However, in order to tackle the basis of competition, it is necessary to integrate sustainability within the business model because consumers consider sustainability another performance attribute of the product or service [80,81].

The state of the art on sustainability shown above has generated a deep understanding of how environmental practices transform companies. There are clear hints in the literature that establish causal mechanisms between the implementation of sustainable practices among companies and its performance improvement [3].

However, the results expected by managers will be different depending on the sustainable practice implemented. For instance, corporate social responsibility initiatives increase operational effectiveness within the company and economic context. Consequently, managing sustainability this way ignores the depth of the corporate sustainable field and it does not place sustainability at an appropriate level in a strategic decision [82].

Making decisions about sustainability as a silo without taking into account the strategic decisions made by board members is an example of the separation fallacy [83–85]. Separation fallacy is the belief that business decisions should be made independently from broader ethical concerns, such as the environment and social issues. This is the reason management areas like finance and accountability are treated independently from sustainability. In fact, as Ioannis and Hawn state [44], it has not been possible to successfully integrate environmental issues into strategy.

One example of the importance of positioning sustainability as a strategic element for managers comes from the research done by Ioannis and Serafeim [1], who state that

companies that implement unique sustainable practices are more likely to differentiate themselves from their competitors and report more benefits. However, those companies that adopt ‘common’: practices are more likely to be associated to companies that try to survive instead of outperforming. Another conclusion that emerged is that organizations that led the adoption of sustainable practices in its market niche and were able to remain leaders through the adoption of unique sustainable practices achieve higher levels of performance, since these companies have built barriers to imitation and gained a good position in their client base hard to copy by competitors.

Research about the theory building process in social sciences holds that the third step consists of defining relationships, so, the concepts presented above may have relationships and even synergies among companies when implemented in a combined way.

Additionally, sustainable practices included in various concepts cannot be implemented separately if managers are looking to achieve both a sustainable and a profitable company [1]. Hence, to turn a traditional company into a sustainable one, it is necessary to embed sustainability through a holistic point of view which should enhance executives to boost a cultural shift among employees. It is then necessary to reshape its business models in a deep way to deliver superior value to customers improving the environmental and social impact. In order to transform a traditional business model into a sustainable business model, it is necessary to use sustainable methodologies and redefine processes which could be accompanied by sustainable-oriented innovation policies. Therefore, the element that will help the new company perform and achieve better results will be a sustainable design of the operations carried out in the company.

Consequently, the actions included in each of the concepts presented above will lead the company to obtain different types of results (Figure 4).

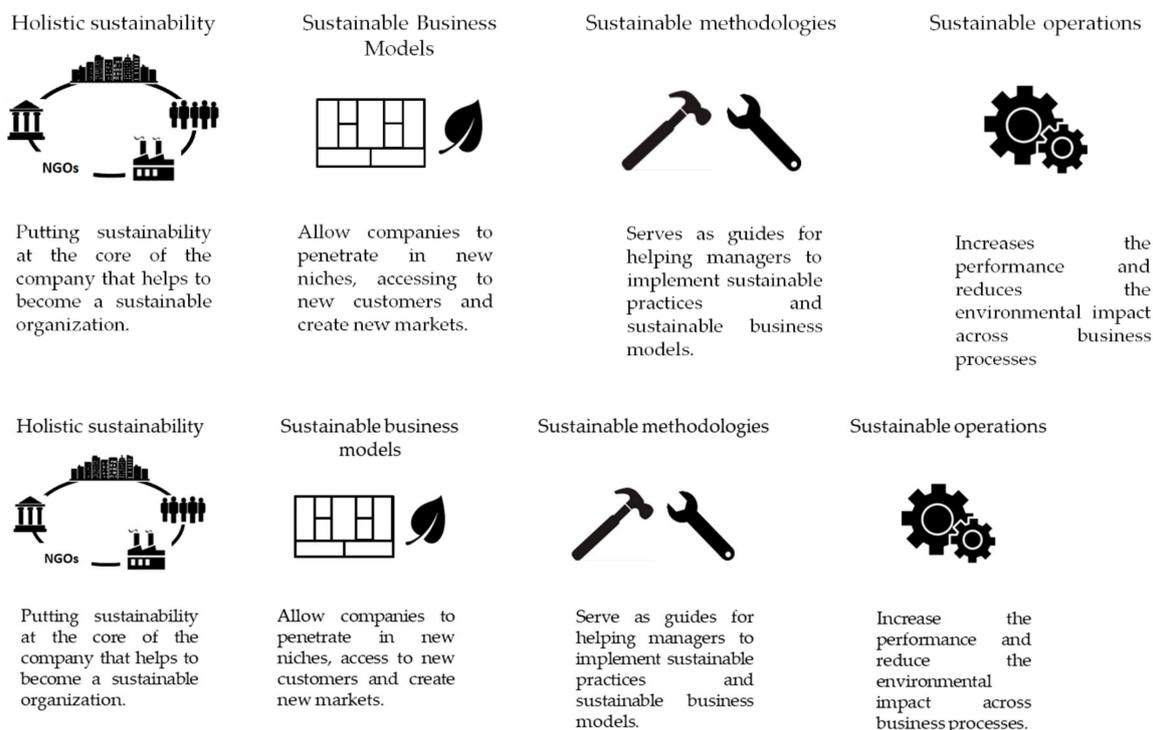


Figure 4. Diagram that shows a brief description of the results that managers can expect after the implementation of activities fitted in each sustainable concept. Own elaboration.

Only the combination of activities provided from different sustainable concepts will lead organizations to turn their traditional business into a sustainable company, capable of surpassing their competitors, targeting new customers, penetrating new markets and launching new products and services. Turning a traditional business into a sustainable

one is a hard job and a challenge for managers and consultants. Although sustainable methodologies are helpful tools in overcoming that challenge, people responsible for leading this change need to have a framework that allows them to shift the strategy of the business, the business model of the company, and the whole range of processes carried out across the organization.

Integrating sustainability through those concepts into the strategy and operations of a company is a long-term proposition. An adequate sustainable strategy will align the activities and operations of the organization sharing a sustainable culture that will lead to an improvement in economic performance. The longer the firm chases value creation through sustainability, the more it will learn about meeting customer and social needs in a profitable way and the better it will integrate new sustainable operations, methodologies, and even business models into every area of the company [86].

6. Conclusions

This research aims to contribute to the development of sustainability through the classification of different bodies of literature and the development of a theory of corporate sustainability. Firstly, a careful and deep review about sustainability was carried out, which led to the classification of the concepts of “holistic sustainability”, “sustainable business models”, “sustainable methodologies”, and “sustainable operations”.

Secondly, the phase of relationship definition has been analyzed through the review of the literature on the line of the research called “sustainability-oriented innovation”, since these works focused on the study of the results generated in companies that implement activities encompassed in different concepts.

Finally, there is a need to enhance sustainability as a strategic topic for those companies that are heading towards becoming sustainable. Currently, companies that want to reshape their business model need to modify numerous aspects: from the company’s culture to the most basic business process and they will need support from the board member to the operators. Therefore, only the proper combination of concepts will lead companies to better performance and more satisfying results.

6.1. Future Research

This paper has focused only on the descriptive stage of the theory building process for the theory of corporate sustainability. We encourage the scientific community to improve this process, look for anomalies, and move forward to the normative stage.

The development of the theory of corporate sustainability seeks to determine what actions will lead to the expected outcomes depending on the circumstances in which the company is through the development of the normative theory.

The transition from descriptive to normative theory will require researchers to deploy field work to generate statements of correlation that will define what causes the result or outcome of interest. This requires researchers to observe specific actions and they will expect specific outcomes that they have observed in the previous phase of observation from the descriptive stage. In case those outcomes do not happen, researchers will have found an anomaly, which means an opportunity to improve the theory.

Anomalies

During the review of this work by other researchers, anomalies can be found in this early theory development. An anomaly happens when theory is not able to explain a specific outcome. Most researchers consider anomalies as weak points of their theories and they decide to hide them. However, anomalies are opportunities to improve the theory [5].

We encourage researchers to improve the classification of concepts presented above, to look for anomalies, and also, to move to the prescriptive stage of the theory of corporate sustainability building process in order to start the transition from descriptive theory to normative theory.

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Appendix A

The field of sustainability is expanding quickly. For the literature review process, we also took into account the list of organizations below. These publish works that show a high expertise and deep knowledge in this field:

- McKinsey & Co
- Accenture
- Ellen MacArthur Foundation
- Boston Consulting Group
- Laboratorio de Eco-innovación
- Sustainable Business Models Blog
- Sustainability an ERM Group Company

Appendix B

Table A1. List of references classified according to the sustainable concepts.

Concept	References
Holistic sustainability	[6,72,87–113]
Sustainable business models	[39,47,49–53,56,58,81,114–141]
Sustainable methodologies	[46,57,62,68,74,75,142–153]
Sustainable operations	[60,63–67,154–185]
Sustainability-oriented innovation	[71–73,76,186]

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