

Review

A Review of Sustainable Business Models: Past Accomplishments and Future Promises

Koen van Bommel *, Marleen Blanson Henkemans, Tammo Brinkhorst,
Marnix Meurs

Vrije Universiteit Amsterdam, de Boelelaan 1105, Amsterdam, The Netherlands

* Correspondence: Koen van Bommel, Email: k.van.bommel@vu.nl;

Tel.: +31-20-5987-614.

ABSTRACT

Sustainable business models have become a prominent feature of organizations in their quest towards sustainability. The current study takes stock of the SBM field through a systematic review of the literature. Drawing on a qualitative content analysis of 104 articles published in the period 2008–2019, the main aim of the article is to analyze (1) the central characteristics of studies within the SBM field to date, and (2) promising avenues for further research by the SBM community. The review shows that SBM research is proliferating but that there is a persistent emphasis on qualitative work based primarily on case studies. Quantitative studies highlighting causalities, correlations, and generalizations remain scarce. Moreover, the SBM field needs to broaden its empirical focus in terms of sectors and countries studied. A systematic analysis of the future research suggestions proposed in extant work points to three main dimensions of a research agenda: (1) broadening the scope and methods of studies, (2) gaining further insights into developing and managing SBMs, and (3) better understanding the outcomes of SBMs. This study contributes to the literature by offering a reflection on the focus of the SBM community to date, and proposes empirically grounded concrete directions for future research to provide a comprehensive and forward looking SBM research agenda.

KEYWORDS: business models for sustainability; corporate sustainability; literature review; sustainable business models; sustainable business model innovation

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ABBREVIATIONS

SBMs, sustainable business models

INTRODUCTION

Recent accounts about the dire state of our planet [1] and persistent social injustice, poverty and inequality [2,3] highlight the need to find more sustainable pathways. Scholars increasingly are recognizing that solutions to the current sustainability challenges require a fundamental

overhaul of both business objectives and how business is conducted [4,5]. A fast growing stream of literature within the broad realm of corporate sustainability that has emerged as a result of this recognition involves work on sustainable business models (SBMs) [5–9] (In addition to SBM, authors use “sustainability business model”, “business model for sustainability”, “sustainable business model innovation” and “business model innovation for sustainability”. In this paper the term “sustainable business model” (SBM) is used).

An offshoot of the more general business model literature [10–12], SBM research recognizes that the business model is “important in driving and implementing corporate innovation for sustainability, can help embed sustainability into business purpose and processes, and serve(s) as a key driver of competitive advantage” [4]. Central, here, is the creation of value through the integration of economic prosperity, environmental integrity and social equity among society at large, rather than prioritization of organizational profit [9,13–15].

Over the last few years, SBM research has proliferated and been published in a wide range of journals, including various special issues [5,9,16]. This has resulted in a variety of insights into SBM antecedents [17,18], definitions and building blocks [8,15], outcomes [19,20], and recommendations about the development, implementation and management of these business models [21–23]. Overall, the SBM literature is burgeoning and is showing the “traits of an emerging field” [24]. Furthermore, various excellent reviews have looked at highly relevant sub-domains within the SBM literature, such as definitions [8], SBM archetypes of mechanisms and solutions [4], SBM innovation types and strategies [6,7], and the application of SBMs in various domains such as hospitality, energy, fashion, innovation and supply chain management [25].

While all these studies have shown very skillfully the state-of-the-art by zooming in on specific *sub-domains* of the SBM research field, what seems missing is a review that actually zooms out and takes more of a bird’s eye view of the SBM field. Such a study makes it possible to see the wood for the trees and find an answer to the question of “what have we done and where to go next?” as a broader SBM community. Moreover, it is important to do so in an academically systematic and robust manner. Such systematic empirical analysis of the paths travelled so far and the new roads yet to be explored allows SBM scholars to have a clear view of the field and offers suggestions about the SBM research program. Therefore, this review systematically takes stock of research on sustainable business models.

The study is underpinned by two broad initial research questions, made more specific by various sub-questions. The first main research question is “*What are the dominant characteristics of SBM studies to date?*” This question is broken down into the following sub-questions:

- Which research design and methods have been used?

- What has been the sectoral focus of SBM studies?
- What has been the geographical focus of SBM studies?

The second main research question asks “*What directions for further research do SBM scholars consider promising to explore?*” Based on an inductive analysis of future research sections we identify the main contours of a future research agenda.

The analysis is based on a qualitative content analysis of 104 articles in primary outlets for SBM research. The study’s main findings around dominating research designs (qualitative), sectoral focus (energy, manufacturing, food and beverage), geographical focus (northwestern Europe) and a future research agenda contribute to our understanding of the achievements of the SBM literature to date and offer insights into where the field could move next. Moreover, the study highlights the need to consider more deeply the theoretical foundations of SBM studies and the position of the SBM field vis-à-vis other, yet related, academic domains.

The remainder of the article is structured as follows. First, we discuss the background to the dimensions and definition of SBMs, after which we describe the methods employed to conduct the analysis. We then present the main findings of the study after which the implications of these findings for the SBM literature are discussed and some conclusions are presented.

THEORETICAL BACKGROUND

Defining a Sustainable Business Model

Business model research has proliferated over recent decades [11,12]. However, there are various positions towards understanding the concept [7]. One of the most frequent understandings is provided by Osterwalder and Pigneur [26] who describe the building blocks in the business model architecture. In general, it is acknowledged that the business model refers to how the firm makes a profit, and that “the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit” [27] is an essential part of the firm’s business model. This leads to business models as “simplified representations of the value proposition, value creation and delivery, and value capture elements and the interactions between these elements within an organisational unit” [7].

Oftentimes borrowing from the general business model literature, work on SBMs examines the integration in the business model of sustainability objectives to increase competitive advantage. SBMs are aimed at providing a sustainable value proposition for stakeholders through the integration of economic prosperity, environmental integrity and social equity [9,13–15]. Debates over the definition of SBMs are ongoing [8] and rather than offering our own definition we briefly discuss some of SBMs central aspects that have been identified [15,28], and that in

fact contain striking similarities with the definitions used by most articles in this study's sample.

First, there is an *explicit focus on sustainability which emphasizes environmental/ecological, social/ethical and economic considerations*. SBMs are not one-dimensional but consider the so-called triple bottom line approach in which social justice, economic prosperity and environmental integrity are interlinked [4]. For instance, Boons and Lüdeke-Freund [13] argue that the value proposition of an SBM is more than just economic; rather it hinges on a dialogue between business and society regarding the balance among social, environmental and economic needs. The definitions proposed by Geissdorfer et al. [29], Karlsson et al. [30], Piscelli et al. [31] and Kurucz et al. [32] include similar sentiments as part of a three-pillar approach.

Second, central to the SBM is an *extended notion of value and value creation which questions more traditional conceptualizations of success and value*. Current sustainability problems force organizations to abandon 'business as usual' and adopt a more expansive and potentially non-monetary value form. Kozlowski et al. [33] emphasize that the neo-classical model should be abandoned and that concern over financial success and profit must be accompanied by a system in which environmental and social responsibility drive economic business models and underpin financial ideals. In this context, we need to consider 'value destruction' and its mitigation [32,34–36]. As Kurucz et al. [32] argue, a singular focus on the financial aspects of the value proposition, and value creation, capture and delivery can lead to the social and environmental harm inflicted being overlooked.

Third, paramount to the SBM must be an *explicit emphasis on a broad range of internal and/or external stakeholders*. Stubbs and Cocklin [15] highlight that while SBMs need to continue to deliver value to shareholders and clients, they must not ignore a broader stakeholder approach. In addition to creating shareholder value, fundamental to the SBM is that it also considers employees, local communities, suppliers and the impact of the firm on society and the environment, or on nature more generally [4,15,37].

Finally, *emphasis is put on the wider system in which a SBM is embedded*. SBMs see firms as actors that are connected to and interrelated with other actors in the socio-economic system [13]. Therefore, rather than employing an organization-centric view, they promote a systems-based view which includes a more long-term perspective [8]. Hellstrom [38] argues that a SBM requires cooperation among various partners to take advantage of opportunities to innovate. In turn, this requires a shift in focus from the firm to the network of firms. Ultimately, the idea here is that organizations can only be truly sustainable if the broader social-economic system of which it is a part is sustainable [34,39].

SBM Research Foci

SBM scholars have addressed a range of questions. There is a stream of work which aims for consensus around a definition of SBM [7,8]. Others focus on the development of theoretical and conceptual frameworks for SBMs, i.e., the anatomy of the SBM [15,34]. Abdelkafi and Tauscher [34] develop a model to advance understanding of the basic functioning of SBMs by applying a systems perspective and combining value with the organization, its stakeholders and the natural environment. Others focus on the contours of variations of the SBM. For example, Nair and Paulose [40] refer to green business models and Randles and Laasch [41] propose the foundations to a normative business model. Jinkuté and Staniskis [42] develop a new type of SBM: the SUstainable and RESponsible COMPANY (SURESCOM) model while Joyce and Paquin [43] develop the triple layer business model canvas tool and describe its key features.

There is another stream of work which examines how SBMs can be developed and how firms can navigate the process of implementing and managing them. The focus here is on understanding business model innovation and the change and learning processes involved as business models are developed and transformed [23,44–47]. These works address questions such as how to successfully manage the paradoxical tensions that are part of SBMs [22], how to integrate circular business models and circular supply chain management for sustainable development [48] and the importance of reframing the business models' existing product and service offerings [46]. Long et al. [49] set out to “explore and identify critical success factors and barriers for the transition from traditional business models to business models for sustainability”.

Particularly influential in this respect are SBM studies drawing on an innovation perspective. Boons and Lüdeke-Freund [13] focus on the interrelations between the sustainable innovation and business model literatures. Bocken et al. [4] offer a categorization of business model innovations which results in SBM archetypes that describe the mechanisms and solutions that can help firms embed sustainability in their business models and Evans et al. [6] examine successful adoption of SBMs through business model innovations. Similarly, from a dynamic capability perspective, Pieroni et al. [50] review approaches to business model innovation for a circular economy and/or sustainability, and the review of Geissdoerfer et al. [7] focuses on SBM innovations and bridging the design-implementation gap.

In sum, the SBM research community is maturing and SBM increasingly can be seen as a diverse and integrated research field in itself [24]. As insightfully analyzed by Lüdeke-Freund and Dembek [24], the debate is ongoing on whether SBM is, or should become, a stand-alone field, a sub-field of a different domain or an integrative field “that depends on and at the same time goes beyond established fields”. Still, keeping in mind the nature of sustainability and SBMs, disciplinary boundaries need to be traversed. Hence, this study looks beyond specific niche journals and

analyzes SBM studies regardless of the specific field they belong to (e.g., business model, innovation, corporate sustainability or design research journals) and simply analyzes and reflects on the SBM research program's composition, empirical focus and future trajectory.

METHODS

Rather than providing an expert review based on ad hoc selection, this study adopts a systematic review approach similar to the work of Dawkins et al. [51], Caldera et al. [52] and Agositini and Nosella [53]. This allows an analysis of the state-of-the-art on SBM and identification of research gaps in an objective, comprehensive and transparent way [54,55]. To this end, the review follows a specific process. First, the research questions are formulated (see previous sections). Next, in this methods section first the relevant studies are selected based on a rigorous search process and inclusion and exclusion criteria, after which a description of the data analysis and qualitative content analysis is discussed. Finally, the findings of the review are reported and discussed.

Article Selection

Following Zott et al.'s [12] seminal business model review, the online literature database EBSCO Business Source Complete was used to collect articles. This database includes more than 1300 business journals and is one of the most complete sources in the business studies field [12]. The key search terms used to identify the data take account of the fact that different authors use different terminology to refer to SBMs. The following keywords, and their variations, were chosen to ensure complete coverage of the literature: "Sustainab* Business Model*"; "Business Model* for Sustainab*"; "Business Model Innovation' AND Sustainab*" (while innovation as such is not the focus of this review, some scholars use the label of business model innovations towards sustainability, hence the use of these keywords). Searching in title, abstract and keywords yielded 1093 results.

These were reduced by defining publication types and applying the following criteria: (a) English language, (b) scholarly (peer-reviewed) journal publication and (c) academic articles (excluding magazines, trade publications, reports, etc.). The time period was set to January 2008–July 2019. The start year was chosen based on the motivation provided by Stubbs and Cocklin's [15] "Conceptualizing a 'Sustainability Business Model'". This can be seen as originating SBM research since before its publication very few articles refer to SBM. Next, to the resulting 456 articles another set of criteria related to the journals was applied. Those included needed to have an official ranking or classification. The journal quality was assessed (judged on the 5-year impact factor, Google Scholar H5-index; SCImago Journal Rank/SJR indicator and position in SJR quartiles) and consistently high quality journals selected, resulting in a sample of 195 articles.

To ensure the relevance of these articles, additional inclusion and exclusion criteria were applied. To be included in the sample, the core of the article must refer to SBMs, BMfS or BMiFS. Articles with more general references to sustainability were excluded. The second selection criterion was reference to the concept of sustainability combined with triple bottom line (economic, environmental and social); reference to sustainability combined only with financial viability meant the article was excluded. The titles, keywords and abstracts of all 195 articles were read to ensure compliance with all of these criteria. If there was any level of uncertainty, the whole article was read to ensure inclusion or exclusion. This selection process was conducted with help of three research assistants, to resolve single coding issues. The researchers first individually analyzed 15 articles and cross-referenced outcomes to ensure similar understanding of inclusion and exclusion criteria. The remaining articles then were also analyzed individually. Following this, there was discussion about the selection, especially in cases where there were some doubts or where opinions differed about inclusion or exclusion in the research. The final selection included 104 articles to be sampled for this review (see Supplementary Material). The steps followed are depicted in Figure 1.

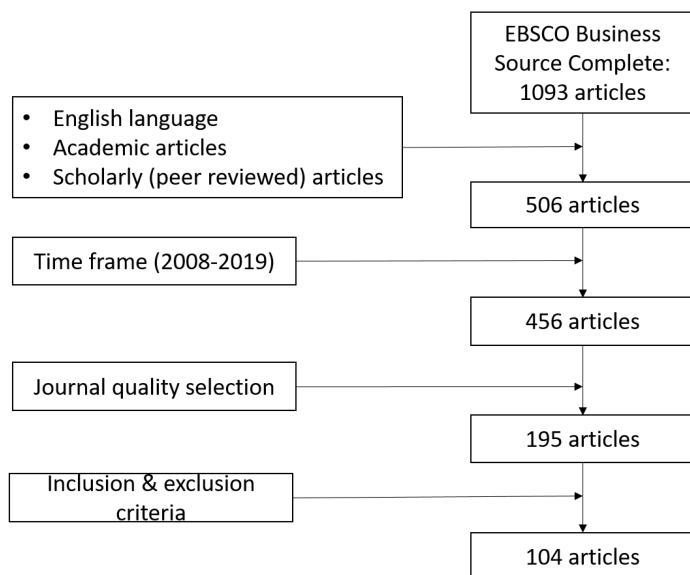


Figure 1. Article selection process.

Data Analysis

The literature was analyzed using qualitative content analysis [56], a method commonly used for literature reviews [54,57] and well suited to “the systematic classification process of coding and identifying themes or patterns” [58]. First, a descriptive overview of all 104 articles was made which included title, author(s), year of publication and outlet. Next, the articles were imported into NVivo, a qualitative data analysis computer software package, this formed the basis for the subsequent analyses. To address the first research question regarding identification of dominant

characteristics of SBM studies, a deductive form of content analysis was applied. The analysis began with development of an a-priori categorization matrix [56] which allowed for the coding of several essential features of the output from SBM research over the previous ten years. These features were the research design and methods used, the countries and industries studied and the geographical clustering of the SBM research community. The articles were read, and the categorization matrix was prepared to enable systematic classification of the various aspects of the SBM studies in the sample (Table 1). Classifying the articles based on the criteria presented in Table 1 was performed independently by the researchers, then differences were discussed until agreement was reached on all classifications.

Table 1. Categorization scheme for characteristics of SBM studies.

Category	Sub-categories
1. Year of publication	Record year of publication
2. Research design	(1) Quantitative; (2) Qualitative; (3) Mixed method; (4) Conceptual; (5) Other
3. Research method	(1) Case study; (2) Interviews; (3) Document analysis; (4) Survey/database; (5) Literature review; (6) Other
4. Sector	Record sector(s) researched
5. Geographic focus	Record country/countries of focus

To address the second research question on promising directions for further SBM research, an innovative method was used that drew on an inductive form of qualitative content analysis. As well as scrutinizing the usual sections on “suggestions for future research” included at the end of a study, any suggestions for future research included in the main bodies of the studies were extracted. This allowed systematic and robust analysis of ideas for future research within the SBM community. In this case, the review focused on 85 articles published between 2016 and 2019 to guarantee for the future research suggestions to be relatively recent.

Drawing on Elo and Kyngas [56] and Caldera et al. [52], a first round of open coding was applied to create tentative labels which were then discussed by the two researchers involved in the coding. Next, axial coding identified interconnections between the first order codes, and a first set of generic categories was established. Finally, the main dimensions were abstracted through selective coding. Between coding rounds the researchers compared their findings, discussed and settled differences to achieve a consensual result to guarantee trustworthiness [59]. Based on this inductive coding, three main dimensions with sub-dimensions, were identified: (1) Scope and methods, (2) Developing and managing SBMs, (3) Outcomes of SBMs. These are discussed below and presented in Table 2 (see **RESULTS** Section).

RESULTS

Descriptive Findings

In 2008, one of the first SBM conceptualizations was by Stubbs and Cocklin [15] which states that “organizations will only be sustainable if the dominant neoclassical model of the firm is transformed, rather than supplemented, by social and environmental practices”. Figure 2 is a chronological summary of the articles published since 2008. Their number has grown particularly since 2016, with over 80% of the articles in the period published after that date. This suggests that the concept is gaining traction. Three journals account for 80% of all the publications in the sample, namely *Journal of Cleaner Production* (70 articles), *Organization & Environment* (10 articles) and *Business Strategy and the Environment* (6 articles). These journals publish a great deal on sustainability but SBM studies are included also in more general business and management journals such as *Long Range Planning* and *Research Policy*.

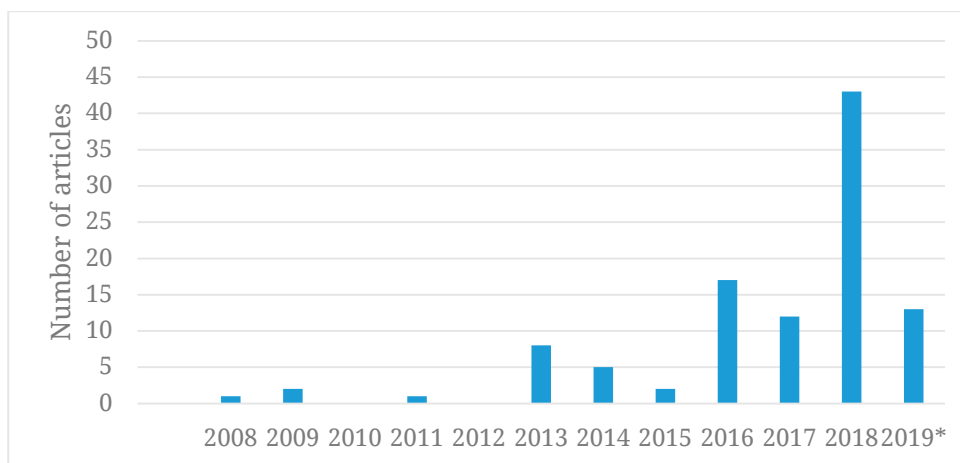


Figure 2. Articles published per year ($n = 104$ —2019 includes January until July).

RQ 1: Key findings on dominant characteristics of SBM studies

In what follows, first a brief overview of the key descriptive findings related to the first main research question and related sub-questions are discussed.

Finding 1: Strong reliance on qualitative case studies; scarcity of quantitative studies. Inevitably, a new phenomenon such as SBM draws heavily on illustrative examples, and case and interview-based studies to obtain insights into what the concept means and how it is put into practice. A total of 66 studies are based on a qualitative research design (Figure 3). Of these studies, 56 self-identify as case studies with interviews their main source of data, supported sometimes by documents. For instance, Flodén and Williamsson [60] map business models for the transport of biofuel in Sweden and offer suggestions about how these models could be applied to intermodal transport. They combine interviews with site visits to observe the SBM in practice. This type of qualitative research draws on small

samples but can provide detailed and rich insights to add to our understanding of SBMs. They are valuable and there are no fundamental objections to a qualitative research design and case studies. However, to judge whether the field is maturing requires other methods that allow generalization and causalities, as will be discussed below.

At the same time as an abundance of qualitative studies, an underrepresentation of quantitative studies is visible. Only seven of the studies in the sample are based on quantitative research, mostly surveys, with four others based on a combination of quantitative and qualitative analysis as part of a mixed methodology. One example of a quantitative study is Rantala et al. [61] who examine the sustainability aspects affecting the willingness to innovate the business model, and adopt innovative services and technology in the equine sector. This study is based on a survey of 139 Finnish horse industry operators which revealed that the greater the value that the actor puts on economic sustainability, the more likely the adoption of business model, technological and service innovations. Although the small number of studies employing quantitative methods might be due to the recent emergence of SBM research, more quantitative studies are welcome to allow the application of different methodologies and the exploitation of different research opportunities.

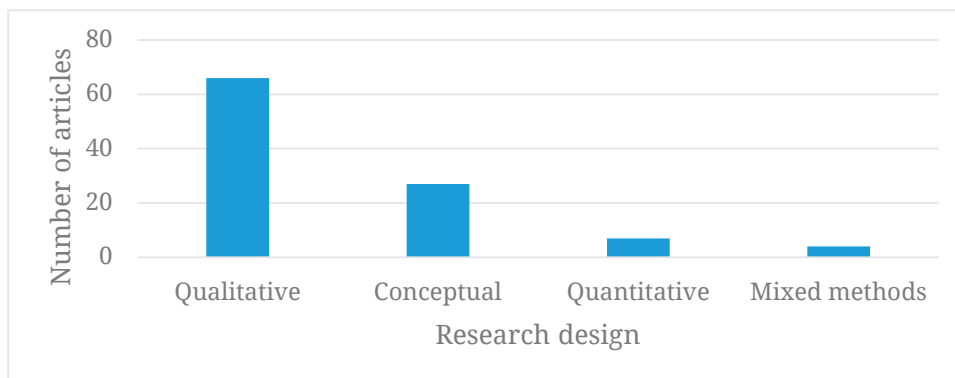


Figure 3. Research design ($n = 104$).

Finding 2: Dominant empirical focus on the energy, manufacturing and food sectors. In the sample of empirical papers, 79 specify the sector on which the research focused, with most studied sectors being energy, manufacturing and food (Figure 4). The focus on the energy sector can be expected in light of the relevance of SBMs in this sector. Nair and Paulose [40] investigate algae biofuel for aviation; Hellstrom et al. [38] look at distributed energy ecosystems; Gauthier and Gilomen [44] examine energy efficiency in urban districts; and Tolcamp et al. [62] provide a study of energy efficiency services in the Netherlands. Also, while the manufacturing sector is diverse, its relevance in the context of SBMs is clear. The materials used, the high energy consumption involved in most manufacturing processes, the role of the supply chain and the pivotal position of manufacturing in recycling and circular initiatives all make SBMs particularly relevant. For instance, Stubbs and Cocklin [15] examine

Interface, a carpet manufacturer which is the subject also of the paper by Rajala et al. [47] which focuses on the greening of the firm's business model. Yang et al. [63] examine six manufacturing firms - from China, the United States and the United Kingdom to validate their uncaptured value framework in the context of for SBM innovation. Finally, the food and beverage sector is relevant due largely to the major environmental impacts of growing and producing many food products (e.g., meat) and the high levels of waste in that sector. For instance, Long et al. [49] examine critical success factors and barriers for the transition to SBMs in the sector, while Gallo et al. [64] discuss SBMs to make the chocolate industry more sustainable and Ribeiro et al. [65] adopt a SBM perspective to develop a tool to diminish waste of "ugly fruits" in Portugal.

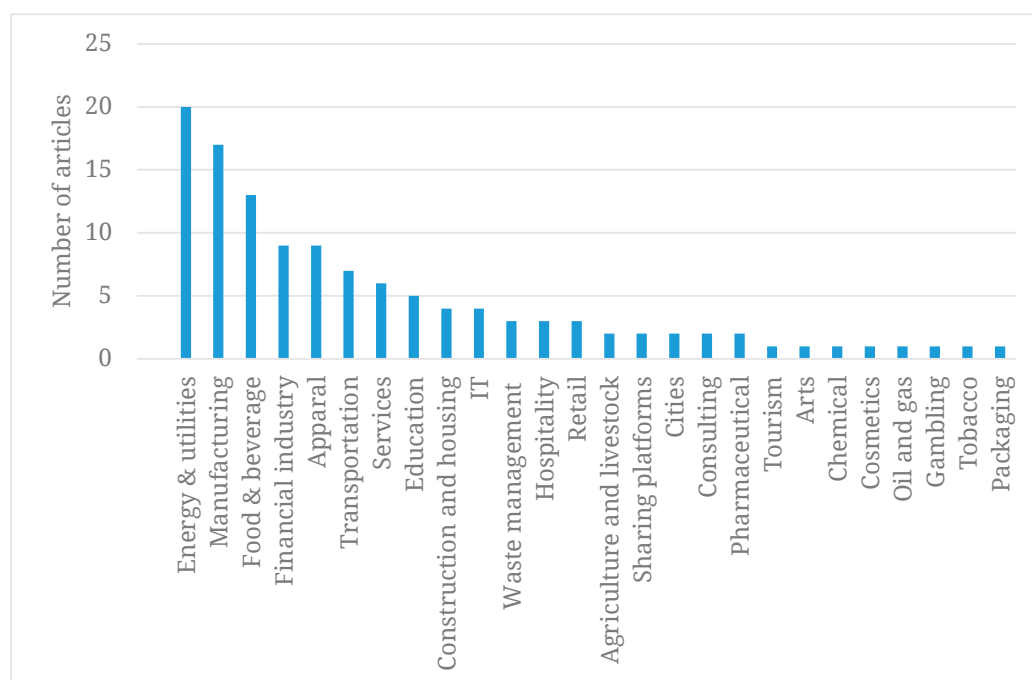


Figure 4. Industry focus ($n = 79$).

Finding 3: The empirical focus of SBM scholars is strongly concentrated on northwest Europe and the Nordic countries. The sample includes 71 articles that mention their empirical geographical of focus. In total 27 unique countries are covered out of the 88 times countries are mentioned (Figure 5). The regions referred to include northwest Europe (the United Kingdom, Netherlands, Germany, Belgium Germany and Austria) which is the scope of most of the empirical research (39 times/44%), followed by North America (12 times/14%) and the Nordic countries (11 times/13%). The geographic concentration of this research on a very specific, and relatively small part of Europe is noteworthy. Also, in the sample of journals included in this review, there are some evident 'empirical blind spots'. Africa stands out in this regard although it is an area where arguably, SBMS would bring huge value and contribute to the continent's development allowing it to leapfrog some western regions with

less SBMs. This applies also to Asia which offers potential for benefiting from SBMs due to its huge populations, high growth-rates and large manufacturing presence. Thus, in terms of the empirical focus of SBM research, the interest in Europe is encouraging but the SBM community should widen its empirical focus and research.

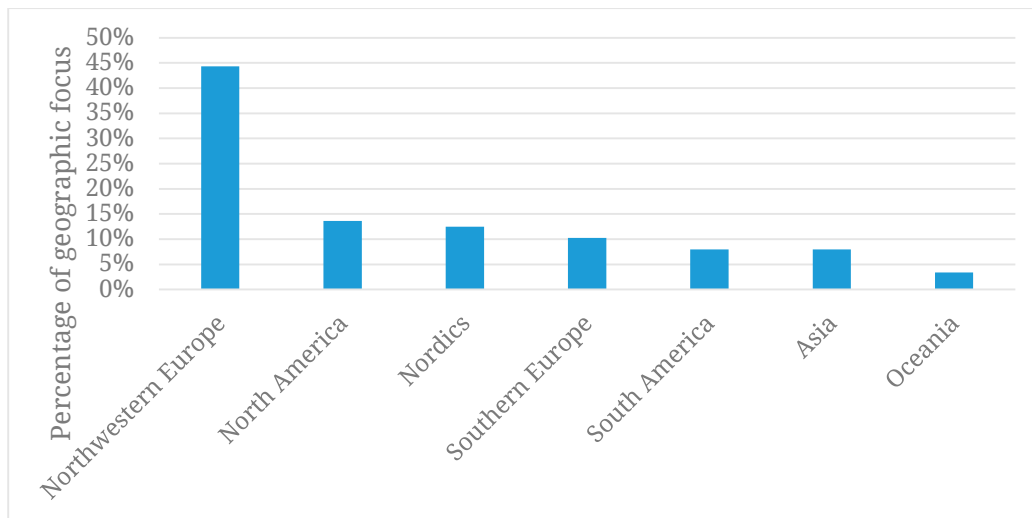


Figure 5. Geographical focus ($n = 88$).

RQ 2: Key findings on future research agenda

This study's second research question inductively analyzes what the academic SBM community, by means of their own future research suggestions, considers the most important areas for future study. Among the sample of articles published between 2016 and 2019 (85 articles), three main directions were highlighted for future investigation as the result of qualitative content analysis (Table 2). These are discussed below and illustrated with sub-categories and examples.

Table 2. Directions for future research ($n = 85$).

Broadening scope and methods (60 articles—71%)		
	Number of articles	%
Test findings in different industries & countries	37	44%
Conducting more case studies	31	36%
More quantitative studies	17	20%
SBM context and how to develop, implement and manage SBMs (48 articles—56%)		
	Number of articles	%
Prerequisites and contingencies of SBMs	35	41%
Managing SBMs: strategies, tactics and mechanisms	33	39%
Outcomes and impact of SBMs (35 articles—41%)		
	Number of articles	%
Meaning of sustainability & impact of SBMs	26	31%
Research financial and non-financial values and indicators that are created and distributed among stakeholders	17	20%

Finding 4: Research scope and methods need to be expanded by broadening the range of countries and industries studied, and conducting more case studies and quantitative research.

Several of the sample studies highlight the need for research to **cover more countries and industries** in order to get a better understanding of how SBM transformation and operationalization takes place [47]. Also, the research needs to be conducted in a broader international context [37] which would reveal the different institutional and cultural factors influencing the business model [18,61]. Long et al. [49] suggest that: “further research on different sized businesses, within different sectors or geographical contexts will be required to confirm whether the success factors identified in this research are applicable to different contexts”. Palomares-Aguirre et al. [66] and Piscicelli et al. [31] suggest a focus on both case studies and large scale surveys in other industries and countries to test these differences. Replicating studies and preliminary theories within settings beyond the usual countries and sectors (see Findings 3 and 4 above) would reduce bias [67] and prevent replication crises that have occurred in other fields such as psychology [68,69].

Also, despite the large number of case studies, there is a need for more **case study research**. Case studies are useful to bridge between theory and practice, and provide insights into the nature of SBMs, their core mechanisms and processes, how they should be managed and their outcomes. It is essential when conducting case study research to take account of a wide range of stakeholders to ensure valid and generalizable data [37,44]. Case study data are useful also for firm managers wanting to innovate their business models. Insights from case studies can help managers to identify substitutes and to choose the most suitable business model option [63]. However, over-reliance on case study data reduces the generalizability of SBM theories. Therefore, more and different qualitative research would be useful. For instance, Karlsson et al. [30] and Kozlowski et al. [33] exploit an action research design in their studies of respectively the business model innovation process for sustainability at a biogas-producing farm cooperative in southern Sweden, and the elaboration of the reDesign canvas to support design entrepreneurs to develop sustainable fashion enterprises. Similarly, more longitudinal case studies could “shed light on dynamics, changes and outcomes” [70] while efforts have been made to experiment with how best to understand success and failure of the value proposition related to new business models [19,71].

Finally, as the SBM field matures there will be a need for **quantitative and mixed-methods research**. Research so far is mainly explorative with few data points [49]. Therefore, more quantitative research is needed to shed a better light on causalities, correlations and generalizations and bring SBM research to a greater stage of maturity [5]. For example, by applying the previously proposed models and themes in a quantitative research design prior research can be validated [72]. Stal and Corvellec [73] suggest the need for more quantitative data to complement and support

the qualitative results and reveal some of the moderating factors which explain SBM success or failure. Mendoza et al. [74] suggest that quantitative studies could provide “evaluations of the potential implications and expected benefits” of SBMs, and Pieroni et al. [50] consider that developing quantitative methods and tools would support decision-making since “such tools could propose indicators and measures to assess different concepts of BM economically, environmentally and socially”. Finally, Dentchev et al. [5] refer to the potential of quantitative techniques in the context of experiments and simulations which so far are scarce in this literature (but see [75]).

Finding 5: A deeper understanding is required about the importance of context (i.e., prerequisites, ecosystems, institutions) and how to develop, implement and manage SBMs. First, we lack **knowledge about the contextual factors that affect the transition from the traditional business model to a SBM.** A better understanding is needed of the internal and external contingencies required to provide a context conducive to a SBM. This includes which factors need to be in place to allow the transition to a SBM, and which institutional, political, cultural and organizational settings favor SBMs [5,34,47,76]. The influence of regulation and governance is important [5,77]. Schaltegger et al. [76] highlight the “wider socio-technical system”, Rotondo et al. [67] stress the importance of culture and Abdelkafi and Täuscher [34] point to the need to identify the contingencies which make certain organizations better able to deal with issues that arise when transforming their business models. Drawing on institutional theory, Laasch and Pinkse [78] discuss the enabling and constraining effects of institutional spaces and explain why particular models emerge in specific institutional spaces. However, Gauthier and Gilmon [44] claim that a better understanding is needed about “the extent to which BM transformations can be integrated into, and become dominant within, actors’ organizations, displacing established BM and modifying decision-making processes and management behaviors”. In sum, we need to know more about the factors which enable organizations to be prepared for the transition to a SBM. How do SBMs differ across sectors, countries, cultures, regulatory environments, business systems, types of firms (e.g., large vs small; challenger vs. incumbent; private vs. public; profit vs. non-profit etc.) and what are the consequences of these differences for developing and managing SBMs? This needs a focus on one of the definitional pillars of a SBM, namely the wider system in which the model is embedded (see Section “**Defining a Sustainable Business Model**”). This requires the SBM to be considered as part of the ecosystem [79] or understood as belonging to an ecology of business models allowing “business models ... to be understood in their wider context” [71].

More work is needed also to **identify the strategies, tactics and mechanisms related to changing towards and managing SBMs** [18,22,23,34,52]. For instance, Abdelkafi and Täuscher [34] call for a better understanding of “the mechanisms by which the environmental value

proposition, value to customer and captured value can reinforce each other”, Khmara and Kronenberg [80] highlight the “urgent need to study transition pathways from the current growth centered economic system to a sustainable degrowth one” while Rauter et al. [18] argue for the importance of deeper knowledge about the development of business models to allow firms to develop their business models into models that support sustainable value creation. In this respect researching scalability can be worthwhile as it is essential to truly advance such models (see e.g., [81]), as can an assessment of practical tools can guide the transition to, and development/management of SBMs? The implementation of SBMs needs more research to gain more insights into the mechanisms, process models etc. that are involved [4,30,52]. Moreover, which conceptual models and underlying mechanisms help to better understand the development, implementation and management of SBMs? There are a number of theoretical lenses that could be drawn upon to guide these analyses, including paradox theory [22], institutional logics [82], transition theory [83], and resource dependence theory [84].

In the context of identifying models, tactics, strategies and mechanisms for managing SBMs successfully, Ritala et al. [85] and Van Bommel [22] suggest the utility of a longitudinal approach or an action research methodology. Again, more quantitative research would provide information on how to manage SBMs in different industries, contexts and countries [5,22]. More research is needed also on stakeholders whose input is critical for the business framework and resolution of the firm’s problems [62]. This would allow the development of a SBM ecology [71].

Finding 6: Limited knowledge about the outcomes and impact of SBM. First, a SBM must be really sustainable. A deceptively easy question that follows from this is **What is meant by a sustainable organization and therefore by a truly sustainable business model** [86]? Is there a risk that the SBM concept and the potential of SBMs could be regarded as greenwashing? Evans et al. [6], Caldera et al. [52] and Merli and Preziosi [87] argue that more research is needed into what is fundamentally meant by sustainability and a truly sustainable organization, the criteria for SBM success and how it can actually be measured/determined. For example, Biloslavo et al. [88] contend that businesses should publicize how they intend to achieve sustainability and make information accessible on how economic, social and environmental issues are handled. Also, integration of a comprehensive life cycle sustainability assessment into a SBM will be required to assess the impact of the SBM from a triple bottom line perspective [89]. We need also to consider for whom these sustainability effects are relevant—the effects on stakeholders will vary. Future research could identify which stakeholders benefit most, and how the effects can be measured. Researchers such as Dembek et al. [90] and Brehmer et al. [91] suggest widening the research when examining the effects of different SBM aspects. Which measurement- and control systems need to be in place to support a successful SBM.

Second but related, **SBM scholars could investigate both the financial and non-financial value being created or destroyed, and distributed among stakeholders.** For instance, Abdelkafi and Täuscher [34] suggest the construction of a database on the environmental value proposition, the added customer value and the additional product value created by SBMs. Relevant financial and non-financial indicators should be examined in more detail to guide the measurement of SBM effects [50]. A deeper understanding is needed about how companies need to evolve and what they need to do to create value in addition to monetary value. Investigating the additional value added provided by a SBM would provide information on its positive and negative effects [18]. Stubbs [39] argues that a major focus should be on measuring the underdeveloped social impacts. Finally, this raises questions about the predominantly financially focused management control and performance models and whether these include a sufficient number of sustainability indicators [74]. Moreover, which measurement- and control systems need to be in place to support a successful SBM?

DISCUSSION

This review was aimed at providing an overview of a decade of SBM research published in primary outlets, to improve our understanding of the current state of work on SBMs. The study was guided by two main objectives: (1) to identify the dominant characteristics of SBM studies, and (2) to analyze the recommendations for further research and identify a research agenda.

In terms of the first objective, the study shows that interest in SBMs has proliferated during the last few years. A dominant focus in many SBM studies is also clear. For example, qualitative research dominates quantitative and mixed-methods, and the industries studied are mainly the most high profile in terms of sustainability. They include energy, manufacturing and the food and beverage sectors. Also, the geographical focus of most of these studies is northwestern Europe. As examined above, applying different research designs and adopting a different empirical focus in terms of geography and sector would provide more robust and generalizable insights which would advance both our understanding of SBMs and the practical impact and resonance of SBM research.

In relation to future research opportunities recommended by SBM scholars, in this paper this is formulated as a research question that is addressed empirically through a systematic analysis of the recommendations for future research sections of the studies in the sample. First, a broadening of scope and methods would be useful. In addition to the useful and insightful existing case studies, it would be informative to employ quantitative or mixed-methods to establish causalities, correlations and generalizations which are more difficult, yet not impossible, to derive from qualitative case studies. Also, expanding the empirical focus of studies to more countries and sectors could lead to a

more robust understanding of the differences and commonalities of developing and managing SBMs. Second, this review shows the importance of context and the value of opening up the black-box of SBMs. Obtaining a better understanding of how these models are developed, implemented and managed by identifying successful strategies, tactics and mechanisms is vital. Exploring the prerequisites, contextual factors and ecologies of the transition from a traditional business model to a SBM also deepens the understanding of these models. Finally, rather than assuming that SBMs lead to successful organizations and a more sustainable society, scholars should investigate the outcomes and impact of SBMs. This will require scrutiny of the meaning of a SBM and when it can be deemed to be successful. Scholars should analyze both the financial and non-financial forms of value which are created or destroyed, and distributed among stakeholders by SBMs, and the indicators that can measure these forms of value.

Overall, these findings offer relevant contributions to the SBM literature and how it can help advance sustainable development. The contributions are twofold, with the first addressing what is ‘being said’ in the analyzed articles, and the second in fact zooming in on the “unsaid”. First, at its most general level, this study follows the words of former US president Harry S. Truman: “There is nothing new in the world except the history you do not know”. This review’s purposefully broad focus on the emerging SBM field, combined with its systematic methodological rigor builds further on, and extends, the very useful existing reviews that are either more ad-hoc or narrow in their focus on particular sub-domains of the SBM literature, such as SBM archetypes [4], SBM application in various domains and sectors [25] or business model innovation for sustainability [7,50]. Offering a sense of order in the relatively nascent and fragmented SBM field is an important contribution of this study. On the one hand, the insights gathered in this review about past achievements ideally push scholars to reflect more on their research designs and sectoral and geographical focus of their future work. Moreover, drawing on systematic and rigorous methods, the research agenda proposed in the findings contains various suggestions that can further enhance the quality of the emerging SBM field and at the same time improve the practical application of its findings. In that respect, this review builds on recent work that aims to strengthen the overall SBM field and its research community [5,24].

Second, while the first contribution is clearly one that breathes positive encouragement, the second contribution this study seeks to make is more critical and contains a message of caution and concern. That is, when reflecting on what the articles in this study’s sample omitted, i.e., the “unsaid”, in particular the relatively underexplored theoretical embeddedness of SBM studies becomes apparent. That is, many SBM studies remain more descriptive and phenomenon-based and seem to lack a broader theoretical underpinning or contribution (see also [5]). Opportunities for a stronger theoretical grounding of SBM research do

exist though, as it is possible to borrow from a broad array of existing theories and research fields. That is, considering the inherently complex and multi-faceted nature of sustainability and SBMs, requiring collaboration within and across academic disciplines and practice, the success of SBM research to make a meaningful contribution to theory and sustainability hinges on scholars drawing on multi-, inter- and transdisciplinary research to address issues which “in principle are interdisciplinary by nature given the complexity of the problems currently faced by our society” [5].

Relevant here is recent work by Lüdeke-Freund and Dembek in which they examine whether SBM as a field of research and practice should be regarded as a stand-alone field, a sub-field of a broader field or an integrated field. They rightfully argue that an integrated field perspective is most fruitful as SBM studies “may borrow and merge the required ingredients from existing fields, linking these in new ways and feeding the resulting experiences back to renew and inspire researchers and practitioners across various fields” [24] in order to “break existing academic niches and silos and maximise practical impact” [24].

However, to do so effectively a more explicit consideration of the theoretical underpinnings of SBM studies may be helpful as it helps to better understand the phenomenon and eventually leads to “integrative theories of sustainability management that can effectively contribute to sustainable development of the economy and society” [9]. Following Kuhn [92], moving towards a normal science of shared theoretical beliefs, values, and methods around SBMs will take time, if attainable and desirable in the first place, and will be preceded by a pre-paradigmatic stage of various theoretical perspectives being drawn upon. In that sense, recent SBM studies drawing on institutional theory [73,78,82], evolutionary economics [76], paradox theory [22], actor-network theory [93], system dynamics [34], network theory [79], and resource dependence theory [84] are good examples of what could be the beginnings of a more profound theoretical engagement of SBM scholars towards a cumulative theory for studying SBMs. An overarching question here is to keep on asking “Which theories can help to better understand SBMs and their antecedents, processes, mechanisms and outcomes?”

CONCLUSIONS

This paper analyzed and systematized the characteristics and focus of SBM research to date. Based on a qualitative content analysis of 104 articles, this review reveals some important findings. While it provides evidence of a proliferation of SBM studies in terms of output, it also shows a persistent emphasis on qualitative work which draws primarily on illustrative case studies. Quantitative studies highlighting causalities, correlations and generalizations are scarce. Moreover, SBM research should expand its empirical focus in terms of the sectors and countries studied. Systematically analyzing the future research suggestions

contained in the existing literature points to three main dimensions which require more investigation: (1) the scope and methods of studies, (2) developing and managing SBMs, and (3) understanding the outcomes of SBMs. At the same time, the theoretical grounding of the SBM research program remains a concern. Overall, this study contributes to the literature by offering a reflection on the focus, and blind spots, of the SBM community to date, and proposes concrete directions for future research to provide a comprehensive and forward looking SBM research agenda that has theoretical and practical impact.

This study has some limitations which future reviews can address. First, the number of articles in the sample sets the scope of the review. The focus was on articles published in high quality scholarly journals examining SBMs. This approach is frequent in literature reviews since a focus on primary outlets offers some guarantee of robust and rigorous work. However, future research could still use larger samples of articles. Second, the level of analysis was the broader SBM research program and its achievements which has provided a general overview of SBM research. As a result, possibly some finer details are less developed. This review should be seen as the first milestone in a series of reviews of SBMs. Future reviews could analyze the state-of-the-art in sub-domains of SBMs research program (e.g., building blocks, outcomes and impact, mechanisms, tactics and strategies, SBMs contextual factors or theoretical lenses applied on SBMs). Taken together, the SBM field is fertile ground for another ten years of interesting research to provide theoretically robust and practically relevant answers to society's pressing challenges.

SUPPLEMENTARY MATERIAL

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AUTHOR CONTRIBUTIONS

The first author wrote all sections. The Second, third and fourth author contributed primarily to the analysis of the data and writing the results section.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

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