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Uncaptured value in sustainable business model innovation: the missing link

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Abstract

Purpose – The purpose of this systematic literature review is to understand what the phenomenon of uncaptured value is, identify where it is operationalized and explore how it can be transformed into value opportunities. Uncaptured value in sustainable business model innovation can lead to new value creation which, in turn, can promote practices of innovation, sustainability and inclusiveness.

Design/methodology/approach – A systematic literature review was conducted using eight databases to identify 47 articles using the phrase sustainable business model innovation along with the terms value uncaptured, value surplus, value absence, value missed and value destroyed.

Findings – The findings have identified that uncaptured value is reoccurring in sustainable business model innovation but is left as the missing link. This paper outlines the novelties of uncaptured value in sustainable business model innovation into a framework that can be used for future research, which is also discussed, concluded and suggested.

Originality/value – A framework for the continued research on uncaptured value in sustainable business model innovation with an emphasis on influences, operationalization and practices has been created to further the research frontier and capture the missing link.

Keywords Uncaptured value, Sustainable business model innovation, Sustainability, Systematic literature review, The missing link

Paper type Literature review

1. Introduction

Novel identification of uncaptured value in business models can lead to new insights for value opportunities where sustainable business model innovation (SBMI) can be realized (Yang *et al.*, 2017a). As an emerging, multidimensional and complex endeavor, SBMI has been researched in a variety of academic and professional domains (Kurek *et al.*, 2023; Molina-Castillo *et al.*, 2021; Sinkovics *et al.*, 2021). Different coping pathways and paradoxical tensions are present during the transition from traditional business models to sustainable business models where the degree of sustainability may eventually rise over time (Di Paola and Russo Spena, 2021; Endregrat and Pennink, 2021; van Bommel, 2018). Endregat and Pennink (2021) add that opposing demands inside organizations may encompass economic, environmental and social priorities, which can result in sustainable development.

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Various value building blocks and perspectives are part of SBMI. Ferlito and Faraci (2022) emphasize value sections, consisting of different value building blocks, whereas Yang *et al.* (2017a) provide an explanation of uncaptured value as an effect of value sections, which involves value perspectives such as value surplus, absence, missed and destroyed. Evans *et al.* (2017a) add that uncaptured value can lead to new value creation, with new opportunities for entrepreneurs, where a relationship of different value flows interplay. From the outlooks by Evans *et al.* (2017a), Ferlito and Faraci (2022) and Yang *et al.* (2017a), this paper will focus on uncaptured value in SBMI due to the possible benefits in the areas of economy, environment and society, where avoiding uncaptured value or transforming it into new value creation can lead to innovation, sustainability and inclusiveness. Galvagno and Dalli (2014) explain that this can be accomplished in various ways, such as value co-creation amongst stakeholders, where novel insights can lead to new value opportunities. Moreover, uncaptured value has lately garnered attention in social enterprises with a focus on traditional business models, which is noted by Borchardt *et al.* (2024), and also in socially involved entrepreneurship and start-ups, as implied by Wagner and Kabalska (2023), but less orientation is toward uncaptured value in SBMI.

SBMI has been emerging as a research topic and several reviews already exist, where some are partially intercepting different value flows (Attanasio *et al.*, 2022; Geissdoerfer *et al.*, 2018; Pan *et al.*, 2023; Sinkovics *et al.*, 2021; van Bommel *et al.*, 2020). Impacts on society have been highlighted by Molina-Castillo *et al.* (2021) and design thinking has been the focus of Kurek *et al.* (2023), but less orientation has been turned on values, and in particular uncaptured value. However, it is also noted that uncaptured value is relevant in the circular economy, with a specific focus on circular business models, but receives less attention than other value flows (Galvão *et al.*, 2024). The lack of specified attention toward what uncaptured value in SBMI is, or where it can be identified in business models, leaves a research gap where the limited knowledge of how the phenomenon can be transformed into value opportunities, leaves an area to be further studied. Our intention is to explore the possible novelty, and this lays the foundation for the research question:

RQ. What is the phenomenon of uncaptured value, where can it be identified and how can it be transformed into value opportunities?

To answer this research question, we need to outline the underlying aspects of uncaptured value in SBMI. Firstly, we need to understand *what* the phenomenon of uncaptured value is and attach it to influences, with descriptions, explanations or definitions in the present theoretical framework. Secondly, we need to identify *where* uncaptured value exists, with the operationalization giving us recognition, realization or acknowledgment of its status. Finally, we need to connect *how* the concept of uncaptured value has been linked with practices, such as frameworks, tools or methods, that focus on the transformation into new value opportunities.

We undertake a systematic literature review of uncaptured value in SBMI to address the aforementioned problematization, amend the current research gap, advance the theoretical framework and suggest potential areas for future studies. This is aligned with Ferlito and Faraci (2022) and Geissdoerfer *et al.* (2018), who emphasize future research in SBMI to advance the current frontier. The introduction of this paper will be followed by a theoretical outline of uncaptured value in SBMI containing influences, operationalization and practices. Then a methodological approach will be presented, followed by the findings in the systematic literature review. Subsequently, we are having a discussion surrounding the findings in order to reconnect to the research question, where conclusions and suggestions for future research will finalize this paper.

2. Uncaptured value in sustainable business model innovation

2.1 Influences

SBMI can be used for designing and implementing new solutions to create value since environmental and social facets of entrepreneurship are added to the economic factor, where the emergence of SBMI is due to the necessity of integrating sustainability in traditional business models (Bocken *et al.*, 2019; Ferlito and Faraci, 2022; Pan *et al.*, 2023). Business models, an approach used for planning, communication and systematic analysis as well as a competitive advantage, strategic asset and firm performance in organizations, have had theoretical development since the 1990s and have incorporated practices to create value for entrepreneurship by adding sustainability and innovation approaches (Geissdoerfer *et al.*, 2018; Pan *et al.*, 2023; Schneckenberg *et al.*, 2022; Yang *et al.*, 2017a). The development suggests that several strategies, processes and structures can be found and described in the current body of literature, which also emphasizes how innovation and sustainability interact to create value, where the rise in academic and industrial interest has subsequently expanded into improving and refining new techniques, methods, tools, canvases and frameworks (Geissdoerfer *et al.*, 2018; Osterwalder and Pigneur, 2010; Yang *et al.*, 2017a).

Value flows are employed and utilized differently depending on whether the research approach is more concerned with the innovation or sustainability approaches of business models, or with other empirical, theoretical or conceptual aspects like drivers, barriers, inclusiveness, design and implementation of SBMI (Bocken *et al.*, 2019; Broccardo *et al.*, 2023; Lüdeke-Freund *et al.*, 2020; Snihur and Bocken, 2022; Yang *et al.*, 2017a). The working definition of uncaptured value in SBMI in this systematic literature review is extracted from Yang *et al.* (2017a), where the authors explain that by identifying uncaptured value in business models, SBMI can be achieved by turning the new insights into value opportunities with higher sustainable value. Hence, the focus is not generally on value flows, but specifically on the phenomenon of uncaptured value in SBMI. The research question is based on the working definition and further problematized by using the constraints of challenges, tools and implementation in SBMI, which Evans *et al.* (2017b), Geissdoerfer *et al.* (2018) and Yang *et al.* (2017a) have underlined, which in this paper carries on to the methodological approach to refine the review protocol and establish inclusion and exclusion criteria.

SBMI practices need to consider environmental and social aspects in addition to the economic, where it aims for a positive sustainable development or reduced consequences of the economic, environmental and social impacts in order to be recognized as SBMI, where adoption of practices that support sustainability for value creation and the acquisition of value network components is crucial for the business and its stakeholders' sustainable growth and inclusiveness (Bocken and Geradts, 2020; Molina-Castillo *et al.*, 2021; Snihur and Bocken, 2022). It is explained by Shakeel *et al.* (2020) that the primary rationale of SBMI practices is value creation, whereas Galvagno and Dalli (2014) add that value co-creation can be facilitated by stakeholder interaction that includes entrepreneurs and customers and can lead to innovative services, goods and products, where it is noted that through collaboration, the inclusiveness in question may have a constructive influence on innovation. During the transformation from traditional business models to sustainable business models, different paradoxes can occur during the coevolution since the degree of sustainability increases over time, where the paradoxical tensions of stakeholders, mindset, competition, culture, resources, staffing and training have different coping pathways that can lead to proactive or defensive approaches towards the transformation (Endregrat and Pennink, 2021). van Bommel (2018) also notes that when transforming towards sustainable business models, solutions for handling paradoxical tensions can concentrate on acceptance, suppression or resolution, where different tensions are linked to environmental innovation in organizations that exhibit attributes of modes, forces and types, according to Di Paola and Russo Spena (2021).

A gap between the design and implementation of SBMI has been noted by Geissdoerfer *et al.* (2017) and (2018), where it has the potential to impact practices that can affect value flows in both new and established entrepreneurship. The aforementioned gap has barriers in the form of challenges that consist of technology innovation, resources, mindset, external relations, triple bottom line, and tools and methods (Evans *et al.*, 2017b; Geissdoerfer *et al.*, 2018). Reconnections can be made to the working definition of uncaptured value in SBMI in this systematic literature review, where Yang *et al.* (2017a) highlight the importance of identifying uncaptured value in business models and turning the knowledge into value opportunities with higher sustainable value, which can enable solutions toward the design and implementation gap, and lead to novel outlooks for the operationalization and practices towards uncaptured value in SBMI.

2.2 Operationalization

To understand the operationalization surrounding uncaptured value in SBMI, an outline of the phenomenon will be provided with recognition, realization or acknowledgments, which contextualizes the operationalization. A framework for SBMI that takes into account the value sections of the value proposition which focus on relationships, customers, services and products, of value creation and value delivery that is oriented towards partners, channels, resources, technologies and key activities, and of value capture that aims at revenue streams and cost structures, has been developed by Ferlito and Faraci (2022), where the practices in the framework incorporate economic, environmental and social factors. The foundation of value sections is comprised of distinct principles that have evolved from previous research on business models, where Richardson (2008) introduced the concepts, followed by Osterwalder and Pigneur's (2010) who outlined the building blocks and then Bocken *et al.* (2013) that identified different stakeholder categories, which has progressed and been incorporated into SBMI practices.

In the context of SBMI, it is necessary to acknowledge that value can take on various forms since value propositions are based on the interplay of opportunities for new value creation, which is subsequently connected to value destroyed and missed, where value propositions can generate value opportunities (Evans *et al.*, 2017a; Ferlito and Faraci, 2022; Stark *et al.*, 2017). Evans *et al.* (2017a) explain that multiple forms of value exist that can be used for analysis, where the initial form consists of value propositions, as in the framework presented by Ferlito and Faraci (2022). This is followed by value destroyed, value missed, value surplus and value absence, which is the uncaptured value, according to Yang *et al.* (2017a). Value opportunities make up the final form, which presents chances for new value creation, where the multiple forms of value can be analyzed through identifying value forms, matching value surplus and absence, and lastly seizing new value opportunities from value missed and destroyed, according to Evans *et al.* (2017a), which has similarities to the working definition from Yang *et al.* (2017a) that aligns with the notion of identifying uncaptured value. Moreover, Wagner and Kabalska (2023) also outline a value uncaptured chain that consists of three phases, starting with primary business activities, followed by the founder's duties and ending with ecosystem alignment deficits. The value uncaptured chain integrates value destroyed, value missed, value surplus and value absence, as highlighted by Yang *et al.* (2017a), where the different value parts interplay with each other when an entrepreneurship moves through the phases. Recognizing that multiple forms of value exist in SBMI is furthermore emphasized by the fact that value can also be integrated across stakeholders and in value networks (Evans *et al.*, 2017b; Freudenreich *et al.*, 2020; Lüdeke-Freund *et al.*, 2020).

The realization from the theoretical framework is that uncaptured value in SBMI needs to be identified, where the phenomenon is integrated amongst different value flows, part of a dynamic context and an integral part of the operationalization, where going deeper into

uncaptured value unravels separate perspectives, divided into value surplus, value absence, value missed and value destroyed (Evans *et al.*, 2017a; Yang *et al.*, 2017a, b). It is described by Yang *et al.* (2017b) that value surplus is the existence of anything that is not needed, including overproduction and waste, whilst value absence is anything required that does not exist, which can be a shortage of storage or labor. Value missed describes anything that exists but is not utilized, including inadequate use of human resources or waste exploitation, where value destroyed is explained as anything that reduces value, such as issues with pollution or poor working conditions (Yang *et al.*, 2017b). An important aspect of the phenomenon of uncaptured value in SBMI is to primarily identify it, and then with the novel insights turn it into new value creation through value opportunities (Evans *et al.*, 2017a; Yang *et al.*, 2017a, b).

2.3 Practices

The transformation from uncaptured value to new value opportunities has practical implications that are limited by the challenges, tools and implementation in SBMI, as noted above by Evans *et al.* (2017b), Geissdoerfer *et al.* (2018) and Yang *et al.* (2017a), which demands attention toward the practices in order to make the transformation possible. The practical implications of strategies, processes and structures are explained by Miles *et al.* (1978), where the focus is on continuous transformation due to organizations engaging in assessing their goals, where the immediate environment is attached to the redefining, verifying and questioning of interactions. It is further noted that the environment brings uncertainty where the dynamics of transformations need to be adjusted accordingly since strategies, processes and structures are connected to administrative, engineering and entrepreneurial problems, where Miles *et al.* (1978) label it the adaptive cycle that demands a synchronized approach from the organization. Furthermore, Miles *et al.* (1978) add that the synchronized approach can be met with a strategic typology consisting of analyzers, prospectors, defenders and reactors, with characteristics that are either stable or fail, which are intertwined with the aforementioned problems. The problems in the adaptive cycle can be reconnected to the challenges, tools and implementation in SBMI, where a gap exists that needs to be bridged in order to transform the identified uncaptured value into new value opportunities (Evans *et al.*, 2017b; Geissdoerfer *et al.*, 2017, 2018; Yang *et al.*, 2017a).

Respective problems in the adaptive cycle include various solutions, where the administrative problem relates to coordinating operations, optimizing efficiency and accommodating dynamics and stabilization, whilst the engineering problem is oriented toward solutions based on the efficient production of services and goods, staying clear of extensive commitments to particular technologies and the ability to stay dynamic and stable in different areas (Miles *et al.*, 1978). Identifying and obtaining new product and market opportunities, as well as seizing a portion of the market whilst simultaneously preserving a solid base of established products and customers are connected to the entrepreneurial problem, where the solutions presented by Miles *et al.* (1978) have alignments to the practices for the transformation of uncaptured value to value opportunities when gaining new insights, as explained by Yang *et al.* (2017a).

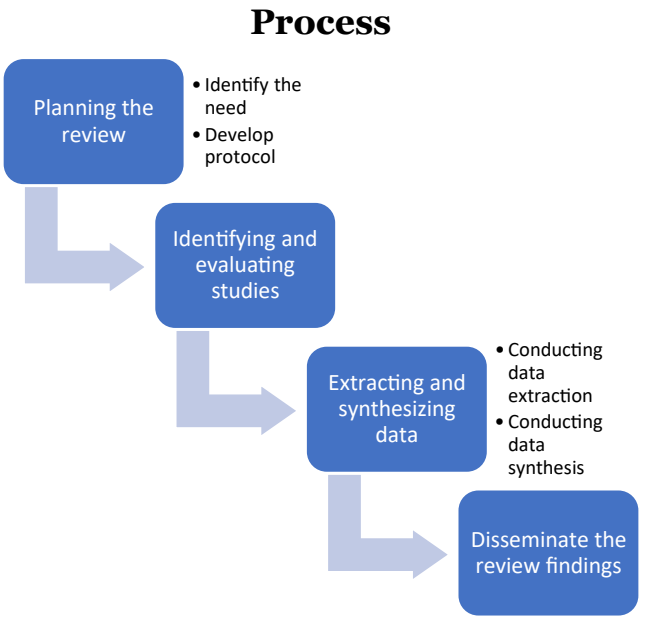
The significance of practices, such as processes, sources, impacts and outcomes are highlighted in the emerging innovation model by Ávila-Robinson *et al.* (2022), with the development of organizational processes, including platforms, services, products and business models, where the authors explain that the impacts could result in commercial, economic and social values. Organizational transformation and its growth can be viewed through distinct lean management lenses, where the interaction between processes, networks, flows and organizational lenses can lead to the leveling of waste, according to Hopp and Spearman (2021), and the authors add that time scales are significant and can be managed by emergency responses, contingency planning, doing nothing or buffering and flexibility. This aligns with the adaptive cycle that Miles *et al.* (1978) highlight, where the time

scales can be reconnected to the paradoxes when moving from traditional business models to sustainable business models, as implied by Endregrat and Pennink (2021) and van Bommel (2018), while the acting or non-acting can be compared to the tensions or strategic typology which Di Paola and Russo Spena (2021) and Miles *et al.* (1978) mention. Several useful practices that concentrate on transformations, inclusiveness, business modeling or value flows have been developed over the years, which include frameworks, canvases and mapping tools, where Osterwalder and Pigneur's (2010) business model canvas and the value mapping tool by Bocken *et al.* (2013) have gained attention.

The influences, operationalization and practices surrounding uncaptured value in SBMI, where different underlying perspectives of the phenomenon interplay with each other, have been outlined in this chapter and set the stage for the upcoming methodological approach.

3. Methodological approach

The methodological approach in this paper is inspired by the guidelines of other researchers, including Booth *et al.* (2021), Hart (2018), Kraus *et al.* (2020) and Xiao and Watson (2019), where the methodological approach outlined is to be able to provide an answer to the research question. There are four phases involved in conducting a systematic literature review, the planning phase, identify and evaluate studies, extract and synthesize data, and dissemination of the findings, according to Kraus *et al.* (2020), where the phases will be follow in the methodology for this study in order to outline the current body of literature of the academic field and identify gaps in research that can be investigated further. Kraus *et al.* (2020) describe systematic literature reviews as an evaluation of the body of current literature that adheres to a repeatable and transparent technique for finding, observing and integrating it with an increased degree of objectivity. These words lay the foundation for the methodology in this paper and the operational process we follow is visualized in Figure 1.



Source(s): Kraus *et al.* (2020)

Figure 1.
Process for systematic literature review

Creating a protocol and identifying the necessity to plan the study is the initial phase, as explained by Kraus *et al.* (2020), where there is a need to conduct a systematic literature review that focuses on uncaptured value in SBMI to understand and explain where the current research frontier is. As noted in the introduction, different reviews that focus on SBMI have been produced over the years, which partially incorporate various value flows, but a specific orientation towards uncaptured value in SBMI is lacking (Attanasio *et al.*, 2022; Geissdoerfer *et al.*, 2018; Pan *et al.*, 2023; Sinkovics *et al.*, 2021; van Bommel *et al.*, 2020).

Selecting the inclusion and exclusion criteria for the review protocol has been conducted in this phase, which is highlighted by Xiao and Watson (2019), where the review is based on a sample of eight databases, each with a unique and varied profile to scan a multidisciplinary academic landscape and include articles from different theoretical backgrounds, which are offered through the university library. The included databases are presented in Table 1 with type, date, search words and number of hits, where the databases that have been selected include diversity and heterogeneity due to SBMI can be found in a variety of academic disciplines and industry sectors (Evans *et al.*, 2017b; Ferlito and Faraci, 2022; Geissdoerfer *et al.*, 2018).

The search words used in each database were split into two distinct components because of the criteria and different ways the databases' search engines work, where in order to obtain hits for the phrase SBMI as a concept, we utilized the search with citation marks and when possible, truncations were employed to account for spelling variances. The term uncaptured value was combined with truncations to include and incorporate various interpretations and

Profiles Database	Type	Date	Search words	Hits
Academic Search Premier	Subject area	2 September 2023	"sustainable business model* innovation*" AND *value* OR uncapture* OR absence OR surplus OR destroyed OR missed	15
Emerald	Subject area/ publisher	2 September 2023	"sustainable business model innovation" AND (*value*) AND (uncapture* OR absence OR surplus OR destroyed OR missed)	68
JSTOR	Subject area/journal storage	2 September 2023	(("sustainable business model* innovation*") AND (*value* OR uncapture* OR absence OR surplus OR destroyed OR missed))	4
Science Direct	Publisher	2 September 2023	"sustainable business model innovation" AND value AND uncaptured AND absence AND surplus AND destroyed AND missed	6
Scopus	Citation	2 September 2023	"sustainable business model* innovation*" AND *value* AND uncapture* OR absence OR surplus OR destroyed OR missed	207
Taylor and Francis	General/ multidisciplinary	2 September 2023	"sustainable business model* innovation*" AND *value* OR uncapture* absence surplus destroyed missed	12
Web of Science	Citation	2 September 2023	(ALL=("sustainable business model* innovation*") AND ALL=(value* OR uncapture* OR absence OR surplus OR destroyed OR missed))	41
Wiley	General/ multidisciplinary	2 September 2023	"sustainable business model* innovation*" AND *value* OR uncapture* OR absence OR surplus OR destroyed OR missed	22

Source(s): Authors' own creation

Table 1.
The profiles of the systematic literature review

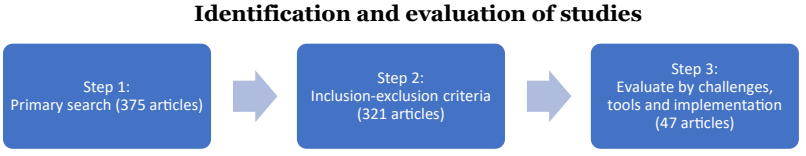
wordings of the phenomenon, whilst value destroyed, missed, surplus and absence were added to obtain articles that might focus on only one or a few of the aforementioned perspectives.

Identifying and evaluating studies is the second phase, according to Kraus *et al.* (2020), where peer reviews, the English language and the presence of the search words are inclusion criteria for the articles, whereas all of these have to be met, which is based on guidelines from Xiao and Watson (2019). There are three steps in this process. We began with using the search terms in the selected databases; a total of 375 articles were found in the primary search and was followed up with exclusion criteria where duplicate publications and articles involving other value flows than the uncaptured value in SBMI were removed from consideration, leaving 321 articles. Subsequently, after reading the abstracts, the remaining articles were included or excluded based on the incorporation of challenges, tools and implementation in SBMI, as explained by Evans *et al.* (2017b), Geissdoerfer *et al.* (2018) and Yang *et al.* (2017a), in order to specify and narrow down the phenomenon of uncaptured value in SBMI, according to the theoretical framing of the problematization which the research question is based on. The process, which is outlined in Figure 2, culminated with a final of 47 articles being included.

The subsequent phase involved the extraction and synthesis of data, in accordance with Kraus *et al.* (2020), and every author of this paper carried out the data extraction to reduce bias and increase the paper's degree of objectivity, where the reviewing process was then conducted individually, and followed up by doing it together to enhance the validity and reliability. The articles' influences, operationalization and practices were the main points of focus, and we had group conversations surrounding each article, which constituted the foundation of the review process. Respective interpretations were presented and if deviations occurred, a consensus was reached in each case before carrying on, where we aimed for a rigorous approach throughout the paper. Rather than just providing a summary, the focus of the data synthesis is on the analysis and assessment of the body of current research, as explained by Xiao and Watson (2019), and for a more straightforward and visual summary of the findings, the data extraction and synthesis are displayed in tables and figures to preserve the quality of the review while being transparent.

The dissemination of the review findings is the last phase, where systematic literature reviews produce evidence-based knowledge intended for both academics and practitioners (Kraus *et al.*, 2020; Xiao and Watson, 2019). Therefore, our target audience is the academics, entrepreneurs, managers, leaders and business owners who are involved in SBMI and those who have the phenomenon of uncaptured value as an interest, where the intention is to outline a state-of-the-art contribution for the target audience.

For validity and reliability reasons, the limitations of the methodological approach of this paper are presented here, where limitations can be found in the search words, the chosen databases and by only including articles in the English language (Kraus *et al.*, 2020; Xiao and Watson, 2019). Other wordings, grey search areas and the inclusion of other languages might enhance the findings and present other results. The authors have considered the limitations of the methodological approach, and this is presented transparently to highlight the possible shortcomings that can be addressed in future research.



Source(s): Authors' own work

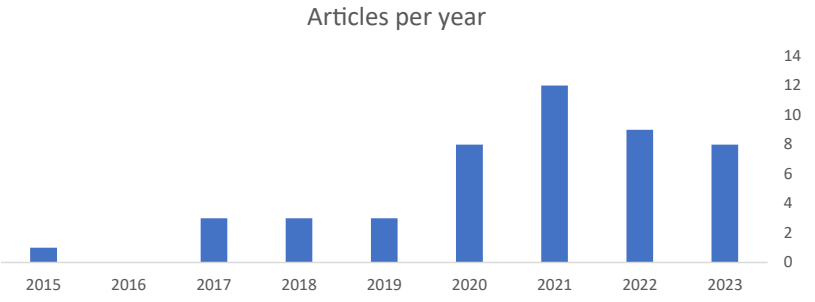
Figure 2.
The three steps taken to identify and evaluate studies

4. Findings

The structure of the findings consists of two separate parts, where the first half of the findings is a general but necessary and vital outlay of uncaptured value in SBMI by presenting the number of articles published each year to identify the trends. Furthermore, bibliometric analysis has been carried out to provide additional scientific output and the networks behind the contributions and to provide a theoretical foundation for the development of uncaptured value in SBMI over the past years. Subsequently, the most cited articles will be rendered to highlight those contributions with the highest impact researchers have relied upon. The last part of the general information will focus on definitions to understand the terminology, which is required to set a foundation that can be carried on into the next chapter for the discussion. The second half of the findings will be more specific, where the influences, operationalization and practices will be presented. This is in accordance with the problematization found in the introduction, as well as the theoretical framework triad, where the specific findings mirror the aforementioned argumentations. This structure outlines uncaptured value in SBMI and narrows the paper into pieces that can be used to answer the research question in the upcoming chapter. Furthermore, the findings are as of the 2nd of September 2023 and all the reviewed articles can be found in Appendix in Table A1. When referring to articles in the appendix, the number of respective articles from the appendix will be placed in square brackets.

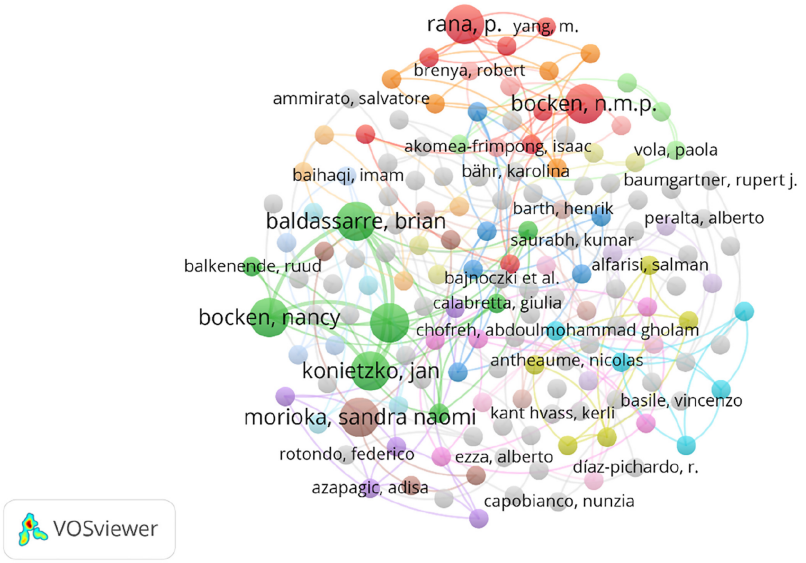
Starting off with the number of articles published each year, from the 47 articles in the systematic literature review, there is a majority of 37 publications from 2020 and onwards, which can be seen in Figure 3. The earliest article was published in 2015, and looking at the publications up until 2019, 10 articles are identified. Apart from a single article, the epicenter of the emergence of uncaptured value in SBMI can be set to the year 2017, which aligns with the paper's working definition of uncaptured value in SBMI by Yang *et al.* (2017a, b), the design and implementation gap by Geissdoerfer *et al.* (2017), as well as the practices of challenges, tools and implementation, as exemplified with Evans *et al.* (2017b). The emergent academic field has had a stable publication rate during the last years where a surge occurred in 2021 that amounted to 12 publications.

The bibliometric analysis in Figure 4 shows the articles in this systematic literature review, along with references to 154 different co-authorships, where the bibliometrics highlights earlier theoretical influences regarding both different value approaches but also surrounding business models. Different clusters can be identified in the bibliometric outline and show both integration and separation between different co-authorships, where authors have had specific focuses and theoretical influences in their research. This diverse network highlights authors who have contributed to uncaptured value in SBMI and the theoretical influences that they have referred to in their respective articles. Moreover, the bibliometric outline aligns with the aforementioned figure, focusing on the surge of developments



Source(s): Authors' own work

Figure 3.
Number of articles per year in the systematic literature review



Source(s): Authors' own work

Figure 4.
Bibliometric analysis with references to co-authorships

during the last years regarding uncaptured value in SBMI, but incorporates the theoretical underpinnings and influences through co-authorships that have led up to the present state.

The bibliometric analysis highlights two clusters of authors and co-authorships, which can be connected to separate parts of this systematic literature review. The red cluster is connected to articles [9] and [46], which have provided the working definition of this paper, as well as a value mapping tool. Moreover, these two articles have the most citations, which is further detailed in Table 2. The green cluster has an orientation toward articles [4] and [5],

Citations Article	Author	Citations
Value uncaptured perspective for sustainable business model innovation	[46] Yang *et al.* (2017a)	250
Value mapping for sustainable business thinking	[9] Bocken *et al.* (2015)	229
Bridging sustainable business model innovation and user-driven innovation: a process for sustainable value proposition design	[4] Baldassarre *et al.* (2017)	227
Integrating backcasting and eco-design for the circular economy	[34] Mendoza *et al.* (2017)	202
Anatomy of sustainable business model innovation	[43] Shakeel *et al.* (2020)	91
Addressing the design-implementation gap of sustainable business models by prototyping: a tool for planning and executing small-scale pilots	[5] Baldassarre *et al.* (2020)	73
Toward circular economy of fashion	[26] Hvass and Pedersen (2019)	72
How do incumbent firms innovate their business models for the circular economy? Identifying micro-foundations of dynamic capabilities	[39] Santa-Maria *et al.* (2021)	51
Demand response business model canvas: a tool for flexibility creation in the electricity markets	[24] Hamwi *et al.* (2020)	50

Source(s): Authors' own creation

Table 2.
Articles with most citations

which provide a foundation for the design and implementation gap in SBMI that can be utilized in small-scale pilots, whereas one of the articles has a large number of citations, which is also noted in Table 2. Furthermore, the stratified clusters involving co-authorships indicate the broad diversity of relationships to uncaptured value in SBMI through theoretical influences that span several academic fields, where references are often connected to co-authorship but rarely to uncaptured value in SBMI where disconnections occur. Based on the aforementioned argumentation, a tendency towards marginalization of uncaptured value in SBMI occurs, where other value flows and other academic fields of study receive attention. The focus in the co-authorships indicates that disparate and contrasting contexts are used, which involve various concepts that do not incorporate uncaptured value in SBMI as the primary research object. Ultimately, this leads to an opportunity to further deepen the understanding of the uncaptured value in SBMI, which is following below in this chapter with specific attention to influences, operationalization and practices.

The articles included in this systematic literature review are found in several different journals that cover different fields of study, which indicates a heterogeneous theoretical framework with several industrial, business and organizational sectors. The methodological approach in the 47 articles has an overweight towards qualitative studies, where this is mostly due to reoccurring case studies, which is the most common approach. Few quantitative studies are identified where it is more common to have a mixed methods approach. Ten different reviews are identified which amounts to over 20% of the total articles. The reviews cover different parts of SBMI where the focus is completely or partially on different value flows.

The geographical settings for the articles and their respective study vary greatly, spanning from developed to emerging countries and incorporating both the public and private sectors. This can be noted in both the number of countries or regions involved in separate articles, as well as the international and intercontinental milieu where research is conducted. The findings show that the most common region for the articles is set in Europe. This is followed by an intercontinental approach where countries or regions from at least two different continents are involved. The findings also show that there are several articles that do not disclose where the geographical proximity of their research, but varieties among countries and regions can already be identified.

The cooperation and collaboration also expand and span among the researchers. From the 47 articles reviewed, it is noted that the most common setup is that three or more researchers have authored respective articles, which is the case in 36 articles in this systematic literature review. Moreover, the research institutions and universities are scattered over several geographical locations and have a heterogeneous setup. The multiple authorship is followed by dual authors and lastly, single authors of articles. Similarities in the authorship are partially correlated to the geographical settings, where case studies are made in each other's local or regional vicinity.

The citations are extracted from Scopus, and from the date of the extracted data, a total of nine articles have been cited at least 50 times, which apart from one article, has exclusively been authored by three or more researchers. Table 2 has an overview of articles with most citations where it is noted that there are four articles which are cited more than 200 times and these articles are also the four oldest ones in this systematic literature review, indicating a stability in the impact over time from the research area. Due to the research area being emerging as seen in Figure 3, most of the articles have been published recently but are steadily increasing in citations.

To begin narrowing down the phenomenon of uncaptured value, definitions can highlight how the term is used and what other words or phrases it is combined or integrated with. Totally five different definitions have been identified, which can be seen in Table 3. A part from uncaptured value, article [1] also highlights the customers' perceptions, promotion of sustainability and the perspectives of value surplus, value absence, value missed and value

Definitions	
[1] Alfarisi *et al.* (2023, p. 465)	Defining value cannot be divorced from customers' perceptions, and a more thorough understanding of value is required to promote sustainability [. . .] separate value into value surplus, value absence, value missed, and value destroyed
[12] Broccardo *et al.* (2023, p. 9)	In the value exchange between the company and its stakeholders, uncaptured value represents one of the most critical issues to overcome, and indeed an opportunity to obtain higher value for the company and its stakeholders
[33] Méndez-León *et al.* (2022, p. 23, 26)	Value uncaptured is a complementary and negative perspective of sustainable value which groups four components of value representing potential, passive, and negative values [. . .] the negative perspective of sustainable value implies the four components of the value uncaptured
[38] Rotondo *et al.* (2023, p. 5, p. 12)	Value uncaptured to help firms understand the negative aspects of their business models [. . .] the role of "value uncaptured" as a trigger of business model sustainable innovation
[46] Yang *et al.* (2017a, p. 1796)	"Value uncaptured" defined as the potential value that could be captured but has not yet been captured. Value uncaptured exists in almost all companies. Some value uncaptured is visible, e.g. waste streams in production, co-products, under-utilised resources, and reusable components of broken products, while often it is invisible, e.g. over capacity of labour, insufficient use of expertise and knowledge

Source(s): Authors' own creation

Table 3.
Different definitions of uncaptured value from the articles

destroyed. Moreover, the focus is on the decision-making process, which is oriented towards the value co-creation of actors. In article [12], the authors focus on the relationship between the company and stakeholders, whilst uncaptured value is described as a critical issue to overcome and also gives the notion of the opportunities it brings. This is further attached to the drivers and obstacles with a strategic focus that is connected to the search for uncaptured value. Continuing with article [33], uncaptured value is described as a negative outlook, and the four perspectives are called components, which in turn are connotated with potential, negativity and passiveness. The authors are also focusing on creating a holistic framework, which can be a tool for sustainable development and in turn, have a practical approach to uncaptured value. Subsequently, article [38] explains that uncaptured value helps firms to understand negative effects in their business model, where the authors mention the role of uncaptured value and how it is a trigger for business model sustainable innovation. The authors also have a practical approach with a focus on processes and tools, which is attached to the implementation of sustainable innovation. The final article [46], defines uncaptured value as potential value that has not yet been captured whilst it exists in most companies. Furthermore, the authors mention that uncaptured value can be either visible or invisible. This article offers a perspective on the uncaptured value of SBMI, which has garnered attention for vast research surrounding this topic.

It is noted that the exemplified articles use heterogeneous terminology as they mention and describe several different contexts. In some cases, uncaptured value is connected to something that is negative, while beneficial sides are also highlighted. Furthermore, companies or firms are used as the driving force but the relationship with uncaptured value is sometimes linked with customers and other times with stakeholders. Moreover, upsides in the form of results are mentioned where new opportunities, sustainability and innovation can be an outcome of uncaptured value. Lastly, it is not clearly specified if the uncaptured value is tangible or intangible, where a definition using visualizations exemplifies this dynamic.

The other articles in this systematic literature review lack definitions of uncaptured value, where the nomenclature is even more stratified, but some descriptions are still elaborated and

demand attention. Most articles mention sustainability and sustainable development while contextualizing uncaptured value, where it often is discussed surrounding the integration or inclusiveness of economic, environmental and social factors, even if there is an incline towards the economic factor. Surrounding environments are also described in several articles, indicating an interplay between the business with an internal or external influence, where examples can be found that focus on the planet [3, 8, 10, 30] and end-users [5, 9]. The articles focusing on the planet highlight the circular economy, specific industries or collaborations and ecosystems, while the end-user articles are oriented toward design, implementation, prototyping, thinking and value mapping, which are aimed at the final customer.

The more specified findings regarding the influences indicate a diverse range of approaches to uncaptured value in SBMI. Some articles use two or more influences in their theoretical framework while others are less prone to argue for theoretical backgrounds. The most common influence is taken from business models, with a total of 14 articles using the theories, which aligns with the working definition that is based on Yang *et al.* (2017a), which is followed by sustainable business models and SBMI. Circularity is a common influence connected to economics and innovation, while innovation and sustainability are presented separately since there is also a general approach where influences are taken from these theoretical frameworks and cover areas that are connected to ecology, technology and sustainable innovation. Regarding sustainability, most of the articles use economic, environmental and social factors where different discussions, arguments and discourses surround the factors. The articles also often focus on all three factors together as a part of sustainability and sustainable development, which has a balance and interplay between the economic, environmental and social factors. However, it is noted that even if all three sustainability factors are highlighted in the articles, most attention is given to the economic factor, where business, entrepreneurship, management, strategy, financial growth and product development spur the attention. Innovation is mainly used as a general approach to business modeling and its design, implementation and process.

Furthermore, 25 different influences are identified in the systematic literature review which are occurring only in one article at a time. This amounts to over half of the total review sample and is once again indicating the diverse range of approaches to uncaptured value in SBMI. Influences found in two or more articles are presented in Table 4, but the findings also underline the lack of theoretical frameworks or discussions in several articles. For those influences only used in one article, there is a heterogeneous approach where inspiration is

Table 4.
Influences from theory in the articles

Influences	
Business models	14 articles
Sustainable business models	12 articles
Sustainable business model innovation	9 articles
Circularity	9 articles
Business model innovation	5 articles
Innovation	5 articles
Value theory	3 articles
Sustainability	3 articles
Product service systems	2 articles
Strategy	2 articles
Resource-based theory	2 articles
Capabilities theory	2 articles

Source(s): Authors' own creation

taken from co-creation, user-driven innovation, smart technology and grounded theory to influences such as blockchain, paradox theory, waste management and entrepreneurship.

The findings show that the most common operationalization approach for uncaptured value is identified in the processes of the organization where 41 articles exemplify this, and these are presented in Table 5. The process as operationalization approach varies greatly where some articles focus on SBMI as an entity, whilst other articles are using fragments of the organization where uncaptured value is operationalized. The other operationalization approaches that have been identified are connected to products and services, where the attention is less frequent and with fewer examples than for processes. This can be compared to the definitions in Table 3 and Figure 4, where uncaptured value is contextualized differently in each description that is presented and has a diverse development over time.

It is noted in the findings that the phenomenon of uncaptured value is rarely measured even though it can be identified to various extents, where the majority of the articles do not give any explanation as to why they are, or not are, going to measure uncaptured value or how to turn it into new value creation through value opportunities. A total of 33 articles have no findings of measurements in their operationalization during the review process, where the measurements which have been observed in the findings can be found amongst the waste, value flow and stakeholder elements, where four articles respectively are measuring each of the aforementioned factors. Furthermore, two articles are focused on the design and implementation in their measurements of uncaptured value.

The operationalization findings indicate a consensus amongst the articles regarding the approach to uncaptured value, but simultaneously a lack of measures for over two-thirds of the articles leaves a vacuum where uncaptured value in SBMI is left as a missing link.

The final part of the findings outlines the practices where transformation and solutions have been reviewed. Initially, the first observation is regarding whether any identified solution for transformations can be noticed among the articles. This has resulted in 24 articles having an identified solution for transformation, while the remaining 23 articles have no such observations, which can be seen in Table 6. Compared to the former table, it is noticeable that articles that have no identified measurements are still working with transformations even if the uncaptured value in SBMI lacks metrics.

From the identified 24 articles that are working with transformations, an outline has been made where different solutions are highlighted. The main applied solution is frameworks, such as reference models, demand-response models, holistic frameworks and portrayal design, where eight articles have this approach to transformation and are followed by value tools that are included in four articles. Canvases and digitalization are found in three articles respectively, followed by an innovation approach with a focus on the level of innovation in

Operationalization	
Approach	
- Process	41 articles
- Product	3 articles
- Service	3 articles
Measure	
- Nothing identified	33 articles
- Waste	4 articles
- Value	4 articles
- Stakeholders	4 articles
- Design-implementation	2 articles

Source(s): Authors' own creation

Table 5. The operationalization in the articles based on the approach and measure to uncaptured value

Practices	
Transformation	
- Identified solutions	24 articles
- Nothing identified	23 articles
Solutions	
- Framework	8 articles
- Value tools	4 articles
- Canvas	3 articles
- Digitalization	3 articles
- Innovation	2 articles
- Decision-making analysis	1 article
- Network-based approach	1 article
- Recycling	1 article
- Implementation tools	1 article

Source(s): Authors' own creation

Table 6. Practices amongst the articles with focus on transformation and solutions

two articles. Subsequently, the last solutions, which are in one article each, are decision-making analysis, network-based approach, recycling and implementation tools. The identified solutions can be a stepping stone towards value opportunities where the constraints of challenges, tools and implementation for SBMI can be solved, but according to the findings, roughly half of the articles are not actively engaged in this transformation. Noticeably, the solutions are in some cases developed by the organization using them, while other solutions are adapted from theory and applied by the organization, indicating a diverse range of usage of practices to achieve transformation.

5. Discussion

Several points can be discussed to outline uncaptured value in SBMI and answer the research question, where the paper's novelty is highlighted with theoretical and practical implications. But firstly, as the theoretical framework implies, the research area is emerging and has seen an increase in publications during the last years with the year 2017 being the catalyst (Evans *et al.*, 2017b; Geissdoerfer *et al.*, 2017; Yang *et al.*, 2017a). This is noticed in the current stream of publications, which maintain the interest in the topic from academia, where articles from various fields of research and geographical locations explore the phenomenon of uncaptured value in SBMI. The bibliometric analysis also underlines the co-authorships in this systematic literature review and the theoretical influences, which show different clusters of authors that have contributed to value flows or business models in different settings and constellations. The varieties in journals that have published articles, as well as the methodological approach in the 47 articles, where a stratified outline is distinguished that incorporates different ecosystems, contexts and theoretical or practical implications, have also been highlighted, which indicates a diverse outlook of uncaptured value in SBMI. The geographical settings, cooperations and collaborations have provided a diverse framework of international and interdisciplinary networks that work with or study uncaptured value in SBMI, where the bibliometric analysis is aligned with arguments by Geissdoerfer *et al.* (2018), Pan *et al.* (2023), Schneckenberg *et al.* (2022) and Yang *et al.* (2017a). Moreover, several articles have had an impact from the citations amassed over the years, where the four oldest articles in this paper are leading the frontier with over 200 citations each, where Yang *et al.* (2017a) have received the most citations, according to Scopus. The development underlines the emerging research area where knowledge spillovers from the earlier articles have increased academic interest since uncaptured value in SBMI has been approached from various

methodologies, both quantitative and qualitative, to gain new insights. Uncaptured value in SBMI has been scrutinized by academics from different scholarly backgrounds, and various industrial sectors, indicating its importance for several target groups. The definitions which are presented in the former chapter have a heterogeneous and diverse nomenclature, which aligns with the theoretical framework that has been developing for decades and involves several intersections between business modeling, sustainable development, innovation, inclusiveness and value flows (Bocken *et al.*, 2019; Ferlito and Faraci, 2022; Pan *et al.*, 2023). The definitions mostly span between a construct of two entities, such as the organization compared to stakeholders, the uncaptured value being visible or invisible or positive factors versus negative factors. Hence, uncaptured value in SBMI is described as something dynamic or fluid, and not static, where its form, location and opportunities vary between cases, which is aligned to the theoretical framework and further stipulated in this paper, which underlines the nature of the phenomenon.

By focusing on the influences, it is possible to understand what the phenomenon of uncaptured value in SBMI is. The findings have indicated that the most common influence comes from business models. This is aligned with the working definition of uncaptured value in SBMI in this paper, where Yang *et al.* (2017a) have explained that novel insights regarding uncaptured value in business models can influence the organization in achieving SBMI with a higher degree of sustainable value through new value opportunities. Hence, the findings align with the theoretical framework on this point. A majority of the articles focuses on the economic, environmental and social factors of sustainability where an interplay can be found which is incorporated in the SBMI practices. This is aligned with the arguments by Bocken and Geradts (2020), Molina-Castillo *et al.* (2021) and Snihur and Bocken (2022), but it is also important to note that even if all the mentioned sustainability factors are incorporated, the main attention is aimed towards the economic factor and aspects surrounding business, entrepreneurship, management, strategy, financial growth and product development. This is further outlined in the findings where the main influences focus on business models, with a traditional approach, where the sustainable approach comes afterward. Moreover, the field of SBMI was created as a result of the emerging concept of business model innovation and the requirement to include sustainability and sustainable development in business models, as argued by Bocken *et al.* (2019) and Pan *et al.* (2023), where it is further explained that sustainability and innovation approaches to traditional business models have been added over time which affects different value flows, as noted by Geissdoerfer *et al.* (2018), Schneckenberg *et al.* (2022) and Yang *et al.* (2017a). The findings also align with the aforementioned outlay of the theoretical framework where different influences, such as sustainable business models, SBMI and circularity, have been identified, even though it has received less attention than traditional business models in the systematic literature review. Moreover, the paradoxical tensions can be reconnected to the former, where there is a transformation from traditional to sustainable business models (Di Paola and Russo Spena, 2021; Endregat and Pennink, 2021; van Bommel, 2018). Most of the focus is internally on the organization, while external factors such as stakeholders, customers, the planet and end-users receive less attention. The environmental and social factors often come in secondly, and sometimes coupled together without a division between the arguments, which leaves opportunities to advance the sustainability factors further in order to obtain new insights regarding uncaptured value, which is also explained in the theoretical framework of this paper, where this can in turn lead to either value creation in early stages of the innovation process, or to new value opportunities from the uncaptured value in the organization in latter stages of the innovation process. The paradoxical tensions occurring when the degree of sustainability increases when moving towards sustainable business model also align with the need to incorporate environmental and social aspects, where the coevolution in an organization and their strategy need to overcome the paradoxical tensions by using different

coping pathways in order to be defensive or proactive in various situations, as implied by Di Paola and Russo Spena (2021), Endregrat and Pennink (2021), and van Bommel (2018). However, product and service innovation can be enabled through value co-creation, where the relationship and interplay between organization and customer can have impacts through the practices (Galvagno and Dalli, 2014). The heterogeneous characteristic of uncaptured value has further influences, showing impacts from product service systems, strategy, capabilities and resource-based theory, where different academic approaches intersect. It is also important to note that the findings surrounding the influences show more alignments than deviations in what the phenomenon of uncaptured value in SBMI is.

Shifting focus to discussions regarding the operationalization, a more nuanced picture of uncaptured value in SBMI arises, which deviates from the theoretical framework and supplies us with implications and novelties to identify the phenomenon. Most of the articles are operationalizing uncaptured value in SBMI by identifying it amongst the processes in the organization. This aligns with Evans *et al.* (2017a) and the multiple forms of value, where there is an interplay of different value flows which can culminate in new value opportunities. It is noted that uncaptured value is given less attention than the other value flows, even if the organization is process-oriented, which deviates from the notion of the value uncaptured chain by Wagner and Kabalska (2023). Most of these articles focus primarily on the value sections, consisting of value proposition, value creation and delivery, and value capture, as presented by Ferlito and Faraci (2022), and then continuing by shifting attention to new value opportunities. This leaves uncaptured value out of the equation and the phenomenon becomes a missing link that does not get the operationalization attention it demands, according to the theoretical framework (Evans *et al.*, 2017a; Wagner and Kabalska, 2023; Yang *et al.*, 2017a, b). Furthermore, a smaller part of the articles in this systematic literature review identifies uncaptured value in the organization's products or services. This is per Ferlito and Faraci (2022), but the heterogeneity that is presented in the theoretical framework and its implications is lacking here since other practices are left out in favor of the previously mentioned approaches. Hence, the operationalization of uncaptured value in SBMI has a more homogenous and closed-down approach which does not include as many approaches as outlined in the theoretical framework. Moreover, by giving attention to the measures of uncaptured value in SBMI, a further deviation from the theoretical framework occurs. From the findings, it was not identified in 33 articles if any measures of uncaptured value occurred in the operationalization. No explanation is provided or outlined for this outlook, which leaves a potential research gap to understand further why processes are common whilst few measures of uncaptured value in SBMI can be identified. Furthermore, stakeholders and value networks are rarely recognized or the main foci of the operationalization, with few integrations and adaptions even though it is included in the measures of the operationalization, which can be reconnected to the theory (Evans *et al.*, 2017b; Freudenreich *et al.*, 2020; Lüdeke-Freund *et al.*, 2020). The few approaches that have been found to measure uncaptured value in SBMI can be attached to stakeholders, value flows, waste, and design and implementation, where stakeholders and waste are oriented externally, while different value flows and the design and implementation are oriented internally in the organization. This can partially be attributed to Yang *et al.* (2017b) and the perspectives consisting of value surplus, value absence, value missed and value destroyed, which focus on different practices that can include waste or the reduction of value. Even if the operational approach to uncaptured value in SBMI can be identified where organizations are prone to use the phenomenon, it is still used as a static or isolated value flow that is not integrated into the operational processes. Moreover, the measures of uncaptured value in SBMI further underline the issues of integrating the phenomenon to turn it into new value opportunities. Hence, seeing this phenomenon with a new lens might identify new solutions in the future, where it as of now is a missing link.

The final part of the discussion will surround the practices of uncaptured value in SBMI to explore how it can be transformed into value opportunities. The findings indicate that 24 articles are working with or towards transformation, which is just over half of the sample. Notably, from the former part, over two-thirds of the articles had no measures of uncaptured value in SBMI, while the practices show that there are identified solutions for transformation to a more frequent extent. Hence, transformations occur even if there are no measures, which can be connected to Miles *et al.* (1978), which highlights the continuous transformation since organizations assess their goals, including the immediate environment, when redefining, verifying and questioning interactions. Subsequently, organizations can identify the uncaptured value and be aware of the phenomenon, while working toward transformation without metrics of the practical implications. This can also be aligned with Di Paola and Russo Spena (2021) and Miles *et al.* (1978) by applying the strategic typology to solve problems, including the different characteristics, which are either stable strategies or strategic failures. However, organizational transformation through lean management practices, as outlined by Hopp and Spearman (2021), has received less attention. Furthermore, another theoretical input can be taken from Ávila-Robinson *et al.* (2022), where the authors explain in their emerging innovation model that organizations, after leaving the processes, enter the outcomes where the organizational processes can lead to platforms, services, products and business models, whereas the next part consists of the impacts that can result in commercial, economic and social values. Hence, the transformation identified in the findings aligns with the theoretical framework surrounding the practices to a sufficient extent. From the 24 articles that have solutions for transformation identified, there are several solutions applied by organizations to transform and gain new value opportunities. The main used solutions are frameworks, which are followed by value tools, canvases, digitalization and levels of innovation, where at least one article focuses on decision-making analysis, network-based approach, recycling or implementation tools. This is aligned with the theoretical framework, where it is noted that challenges, tools and implementation in SBMI can limit and create barriers towards transformations, inclusiveness and sustainable development, and demands attention in order to have solutions (Evans *et al.*, 2017b; Geissdoerfer *et al.*, 2018; Yang *et al.*, 2017a). Also, the impacts from the development of the business model canvas by Osterwalder and Pigneur (2010) and the value mapping tool by Bocken *et al.* (2013) can be linked to the practical implications since organizations are prone to use different canvases or tools. The identified solutions are continuously attached to the challenges, tools and implementation, as mentioned above, which indicates a similarity to the theoretical framework. Even if the practices indicate several alignments to the theoretical framework, the question of why almost half of the articles have no identified solution towards transformation creates a paradox that is not answered and can be a future research topic. In summary, the practices can be connected to the theoretical framework, but only where identified transformations have been found, which can be a result of the multidisciplinary approach by different academic and industrial fields to uncaptured value in SBMI.

From the discussion, it can be acknowledged that the operationalization of uncaptured value in SBMI is leading to an effect that needs a process-oriented view. Instead of focusing on the start, or design of SBMI, and the finish, or the implementation of SBMI, which has garnered the most attention and aligns with the bibliometric analysis, a view on what happens in the gap between design and implementation can bring further knowledge and implications surrounding uncaptured value in SBMI (Bocken *et al.*, 2019; Broccardo *et al.*, 2023; Lüdeke-Freund *et al.*, 2020; Snihur and Bocken, 2022; Yang *et al.*, 2017a). In this gap, the uncaptured value in SBMI can be understood by the operationalization and provide new value opportunities. Lastly, as noted by Kraus *et al.* (2020) and Xiao and Watson (2019), there are limitations to the methodological approach that can affect the outcomes. Hence, the use of search words, databases and articles in the English language could affect the findings and

subsequently the discussion, which the authors underline and acknowledge here for transparency and insight into the conducted research.

6. Conclusion

The conclusions will underline the novelty, implications and originality of uncaptured value in SBMI in this paper. We have identified several parts that align or deviate from the theoretical framework, and this is extracted into the conclusions to summarize the new insights. The influences are continuously connected to the theoretical framework with reoccurring alignments which has given us the possibility to answer what the phenomenon of uncaptured value in SBMI is, following Yang *et al.* (2017a), but the operationalization lacking the same level of connection to the theoretical framework. The operationalization has several elements that demand more attention, such as why measures of uncaptured value in SBMI are absent in many articles. Moreover, even if it is possible to identify where uncaptured value in SBMI can be found, which is essential in order to answer the research question, there is still a need to understand its dynamic and fluid nature, and how it can be integrated into solutions for new value opportunities, where it is possible to focus on multiple forms of value (Evans *et al.*, 2017a) or value sections (Ferlito and Faraci, 2022). By concluding the practices, it is possible to answer how uncaptured value in SBMI can be transformed into new value opportunities, where the transformations and solutions are in accordance with the theoretical framework, as found in Ávila-Robinson *et al.* (2022), Di Paola and Russo Spena (2021) and Miles *et al.* (1978). However, this systematic literature review does not explain the reasons for almost half of the articles not having practices identified; this leaves room for further investigation in the future. Our conclusion from this paper is that uncaptured value in SBMI is a missing link that demands more attention which we suggest for future research.

7. Suggestions for future research

Ever since the emergence and attention of uncaptured value in SBMI, with influences from Evans *et al.* (2017a), Geissdoerfer *et al.* (2017) and Yang *et al.* (2017a), we have seen a research field move in different directions and be explored by various academic and industrial fields. To maintain the development and narrow uncaptured value in SBMI, our suggestions for future research are based on the novelty and implications from the conclusions regarding the missing link, by adopting methodological approaches focusing on the operationalization of uncaptured value in SBMI. For example, this can be executed in small-scale pilots where comparative studies of the operationalization can be applied or by having a systems-level approach focusing on mission-oriented innovation policies that emphasize solely uncaptured value in SBMI. This leaves a broad spectrum of opportunities to carry on into further discussions and future research regarding uncaptured value in SBMI as the missing link.

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(The Appendix follows overleaf)

Appendix

#	Author	Year	Title
1	Alfarisi *et al.*	2023	A conceptional structure for challenging the rebound effect of the product-service system
2	Ammirato *et al.*	2022	The value of system dynamics' diagrams for business model innovation
3	Bajnóczki *et al.*	2021	The perspective of SMEs on the challenges of the circular economy in the 21st century Hungary
4	Baldassare *et al.*	2017	Bridging sustainable business model innovation and user-driven innovation: A process for sustainable value proposition design
5	Baldassare *et al.*	2020	Addressing the design-implementation gap of sustainable business models by prototyping: A tool for planning and executing small-scale pilots
6	Barravecchia *et al.*	2021	Research on product-service systems: topic landscape and future trends
7	Barth *et al.*	2021	Unpacking sustainable business models in the Swedish agricultural sector- the challenges of technological, social and organizational innovation
8	Basile *et al.*	2021	The usefulness of sustainable business models: Analysis from oil and gas industry
9	Bocken *et al.*	2015	Value mapping for sustainable business thinking
10	Boldrini and Antheaume	2021	Designing and testing a new sustainable business model tool for multi-actor, multi-level, circular and collaborative contexts
11	Brenya *et al.*	2023	Barriers to sustainable agribusiness: a systematic review and conceptual framework
12	Broccardo *et al.*	2023	Contingency-based analysis of the drivers and obstacles to a successful sustainable business model: Seeking the uncaptured value
13	Brown *et al.*	2021	A tool for collaborative circular proposition design
14	Burhan *et al.*	2021	Sustainable Business Model Innovations in the Value Uncaptured Manufacturing Industry: Fitting Gains—Gain Creators
15	Bähr and Fliaster	2022	The twofold transition: Framing digital innovations and incumbents' value propositions for sustainability
16	Colucci and Vecchi	2020	Close the loop: Evidence on the implementation of the circular economy from the Italian fashion industry
17	da Silva Nunes *et al.*	2022	Challenges of business models for sustainability in startups
18	De Bernardi and Tirabeni	2018	Alternative food networks: sustainable business models for anti-consumption food cultures
19	DiBella	2020	The spatial representation of business models for climate adaptation: An approach for business model innovation and adaptation strategies in the private sector
20	Favoretto *et al.*	2022	Digital transformation of business model in manufacturing companies: challenges and research agenda
21	Ferreira *et al.*	2022	Prevailing theoretical approaches predicting sustainable business models: a systematic review
22	Fiorentino *et al.*	2020	How smart technologies can support sustainable business models: insights from an air navigation service provider
23	Hajiheydari *et al.*	2023	Digital sustainable business model innovation: applying dynamic capabilities approach (DSBMI-DC)
24	Hamwi *et al.*	2020	Demand response business model canvas: A tool for flexibility creation in the electricity markets
25	He and Ortiz	2021	Sustainable business modeling: The need for innovative design thinking
26	Hvass and Pedersen	2019	Toward circular economy of fashion
27	Jin *et al.*	2022	Business model innovation canvas: a visual business model innovation model
28	Joshi *et al.*	2023	Blockchain technology for sustainable development: a systematic literature review

Table A1. Articles in the systematic literature review

(*continued*)

#	Author	Year	Title
29	Klimanov and Tretyak	2019	Linking business model research and marketing: new network-based approach to business model analysis
30	Kneipp *et al.*	2021	Sustainable innovation practices and the degree of innovation of business models in Brazilian industrial companies
31	Long and van Waes	2021	When bike sharing business models go bad: Incorporating responsibility into business model innovation
32	Machado *et al.*	2023	Methods that bridge business models and business processes: a synthesis of the literature
33	Méndez-León *et al.*	2022	Towards a holistic framework for sustainable value analysis in business models: A tool for sustainable development
34	Mendoza *et al.*	2017	Integrating backcasting and eco-design for the circular economy
35	Naor *et al.*	2018	Servitized business model innovation for sustainable transportation: Case study of failure to bridge the design-implementation gap
36	Peralta *et al.*	2019	Sustainable business model innovation and acceptance of its practices among Spanish entrepreneurs
37	Román *et al.*	2021	Corporate tensions and drivers of sustainable innovation: a qualitative study in the food industry
38	Rotondo *et al.*	2023	Implementing sustainable innovation in state universities: Process and tools
39	Santa-Maria *et al.*	2021	How do incumbent firms innovate their business models for the circular economy? Identifying micro-foundations of dynamic capabilities
40	Saurabh *et al.*	2023	Towards blockchain led decentralized autonomous organization (DAO) business model innovations
41	Schwarz and Legner	2020	Business model tools at the boundary – Exploring communities of practice and knowledge boundaries in business model innovation
42	Secondi *et al.*	2020	Can digital solutions help in the minimization of out-of-home waste? An analysis from the client and business perspective
43	Shakeel *et al.*	2020	Anatomy of sustainable business model innovation
44	Silvestre *et al.*	2022	Strategic sustainability integration: Merging management tools to support business model decisions
45	Tyl and Gomez	2022	The hidden face of the value in eco-design tools: Theoretical basis of an essential concept
46	Yang *et al.*	2017	Value uncaptured perspective for sustainable business model innovation
47	Zacho *et al.*	2018	Capturing uncaptured values – A Danish case study on municipal preparation for reuse and recycling of waste

Source(s): Authors' own creation

Table A1.

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