

BIBLIOMETRIC ANALYSIS OF EMPIRICAL RESEARCH ON SUSTAINABLE BUSINESS MODELS AS INNOVATIVE MODELS

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Abstract: *In the contemporary environment where businesses are developing rapidly, sustainability has gone from a simple trend to a true business imperative. Thus, a question as simple on the surface as it is essential in detail, is raised for discussion: What and how is a sustainable business model created? Discovering the details through the answer we will give to this question will perhaps lead us to the climax of this study. We propose qualitative research through the tools of bibliometric analysis. Since the specialized literature presents a wide variety of subcategories, dimensions, factors, archetypes, strategies and development contexts for sustainable business models, we focused on a selection appropriate to our research objective. During the exploration process, the chosen articles were identified by their explicit relevance to the topic, including case studies exclusively on sustainable business models. Subsequently, 20 publications that best correspond to the specific purpose and context of our study were selected and retained for bibliometric analysis. Our research methodology is carried out in two distinct phases. The first phase consists of extracting and analyzing relevant works that can be included in the bibliometric analysis. The second phase involves the selection and examination of previously identified works and is structured in two additional steps: manually locating works with a high number of citations and significant influence and identifying essential elements for the purpose of our study. The novelty of this study consists in an analysis focused exclusively on sustainable business models and on the way in which these structures, dedicated to the circulation of values, evolve under the influence of technological progress and ecological practices, thus contributing to the development of more responsible business models. We aim that by correctly reflecting on the data collected and then establishing the appropriate answers, at the end of the study we will obtain valid conclusions that will guide us towards a future of entrepreneurship developed on sustainable business models.*

Keywords: *bibliometric analysis; sustainable business models; social responsibility; innovative models.*

JEL classification: *F18; M14; O10; O47.*

1. Introduction

Under the inspiration of various promotional techniques, companies tend to constantly publicize their own identity in the market.

Related to this aspect, we mention the argument that more sustainable business models represent: "A holistic and systemic reflection of how a company operationalizes its strategy, based on resource efficiency (through operations and production,

management and strategy, organizational systems, governance, evaluation, reporting and change), so that the results have more value and contribute to sustainability more than the inputs (in terms of materials and resources that are transformed into products and services, economic value, human resources and environmental value).

The business model is affected by the company's resources (tangible and intangible), the supply chain and the company's stakeholders (internal, interconnected and external), including the environment (inside and outside the company)" (Lozano, 2018: 6).

Through this bibliometric research, we aim to analyze the empirical studies conducted on sustainable business models from the specialized literature in order to:

- *Identify the dimensions that underlie the evaluation of a sustainable business model.* To effectively assess a sustainable business model, it is essential to clearly define the key dimensions that make up sustainability. We start from the hypothesis that the three key dimensions will stand out: the economic, social and environmental dimensions. All of these dimensions are fundamental for an objective and complete analysis of the sustainability of a business model.
- *Establish the extent to which indicators are used to quantify these dimensions and what these indicators are.* Clear and objective quantification of sustainability involves the use of measurable and relevant indicators that effectively reflect a company's performance. Along with these, social and environmental indicators are necessary.
- *Determine the type and size of the research populations used as samples, as well as the field of activity of the company/companies analyzed.* For studies to be relevant and generate valid results, it is essential to clearly identify the research populations and their corresponding samples.
- *Establish the methods of collecting and analyzing data used in the analysis of sustainable business models.* To obtain accurate and relevant information about the sustainability of a business model, it is essential to apply rigorous methods for both data collection and analysis. Among the most widely used methods and those that we expect to be applied are quantitative methods, which include standardized questionnaires, statistical surveys, analysis of existing databases and numerical evaluation of specific indicators (benchmarking). Qualitative methods are also frequently used, such as semi-structured interviews, focus groups, in-depth case studies, thematic analysis of documents and direct observations. In practice, however, it is often recommended to use mixed methods, so a combination of quantitative and qualitative approaches, to provide a comprehensive and validated perspective on the results obtained.
- *Identify the existence of a template for a sustainable business model.* Such a template generally includes the essential structural components of a business model, such as the value proposition, customer segments, distribution channels, strategic partnerships, key resources and cost structure, in which sustainability principles are explicitly integrated into each element. The template also contains clearly defined indicators and objectives, which allow for the accurate and constant assessment of the company's sustainable performance. In addition, it provides clear instructions and procedures for the implementation, monitoring and periodic adjustment of sustainable initiatives, thus facilitating a coherent and effective approach to sustainability within the organization.

2. Research methodology

The bibliometric research methodology proposed in this paper emphasizes a qualitative approach, specifically focused on the analysis of the content of the papers, in the context of case studies on sustainable business models.

Initially, data collection was guided by the usual research procedures that fit the context of bibliometric analysis through the search engine Google Scholar and ISI Web of Science/Clarivate (WoS). A systematic and iterative search was performed on these databases. This procedure is performed to assess the validity of the dataset and to guarantee the reliability of the collected data.

Our database was also enriched by manually searching for authors in these academic platforms. Regarding the sampling and screening process, in the selection of publications we consider four factors: the context of the paper; monitoring the citations of relevant articles; the publication period because priority is given to current publications; compatibility with our study context.

In the next stage, our research approach continues with the process of extracting data from the specialized literature, using the academic platforms mentioned above. The goal of this stage is to ensure the most comprehensive coverage of contemporary scientific journals, giving priority to high-quality publications, from which relevant information can be obtained for the bibliometric analysis of case studies dedicated to sustainable business models.

The data collection strategy for this analysis is as follows: search for the topic "case study on sustainable business models", "sustainable business models case studies", and "a review of sustainable business models case studies"; time frame 2020–2024; Google Scholar and ISI Web of Science (WoS)/Clarivate databases.

Stage 1: Material collection

The articles are identified in the Google Scholar & Web of Science databases using the search terms "case study on sustainable business models", "sustainable business models case studies", "a review of sustainable business models case studies".

Google Scholar	Web of Science
134	122

Stage 2: Displaying articles

Research methodology:

Selection criteria: Academic publications; declaration of the authors of the articles; Frequency of citations; Their adherence to the specific topic that includes case studies; Time interval=2020–2024.

Exclusion criteria: Exclusion of duplicate documents and those that are not written in English. Exclusion of articles that are part of other fields or do not correspond to the researched topic.

Remaining documents = 159.

Stage 3: Analysis, synthesis and storage of information / Filtering by title and keywords

Extracting and studying relevant works that are suitable for bibliometric analysis; Selecting and studying the selected works; Manually locating highly cited and more influential works; Identifying the elements necessary for our study.

Remaining documents = 102.

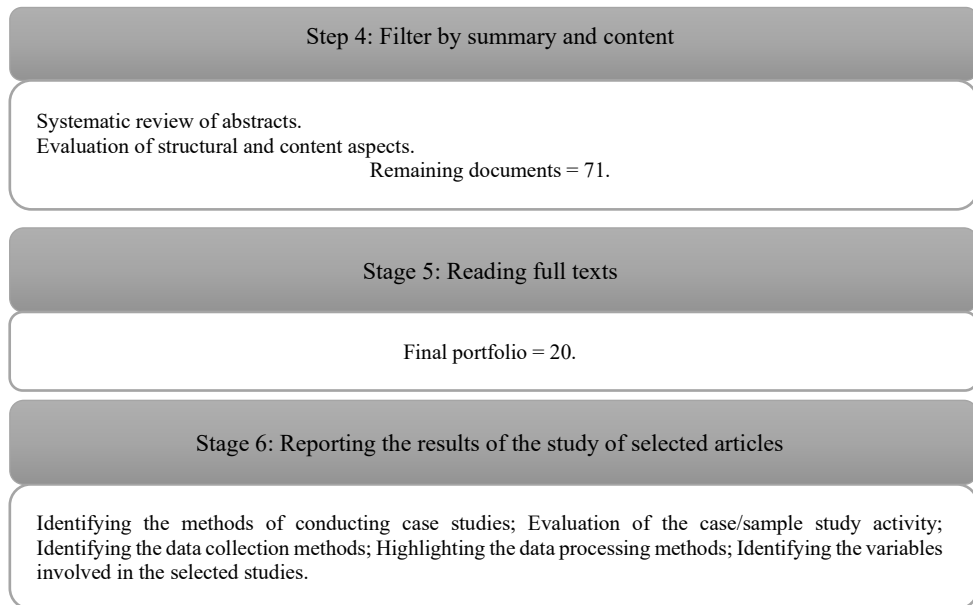


Figure 1: Literature review methodology, inclusion/exclusion criteria and article selection

Source: created by the author

A total of 20 publications were extracted from the literature materials for close analysis. See the figure above.

To ensure the accuracy and validity of the results, we considered it necessary to make a manual selection, both in terms of merging data and eliminating duplicate data. This selection was preferable to be done manually, because the context of our study includes strict aspects, so only those case studies that were carried out on sustainable business models. In this manual selection, we took into account, among other things, the authors' statements extracted from the abstracts of the analyzed articles. Our preference refers specifically to the content of their proposals, paying close attention to whether the article proposes or presents a model, conceptual framework, method or tool, as well as valid and relevant results for our bibliometric analysis. Content analysis was used to carry out the data synthesis procedure. In itself, "this analysis consists of a set of techniques for systematic examination of texts, which can be applied qualitatively and quantitatively to evaluate structural (descriptive) and content aspects" (Kurek et al., 2023: 5).

3. Data collection, structuring and interpretation of selected studies

After selecting the relevant papers for our study, we conducted an additional assessment, targeting the case study design methods. This analysis exclusively

considered the field of activity of the case study/sample, the methods of data collection and processing, as well as the variables involved in the case studies on sustainable business models, each of which was subsequently associated with relevant explanations. Because bibliometric analysis allows for iterative research, specific aspects of the case studies were investigated through systematic and detailed review.

Table 1: List of selected articles.

Number of articles	Article title/Study topic	Authors/year
1	Sustainable business modeling: The need for innovative design thinking	He, Ortiz, 2021
2	Value of Sustainable Business Model in Mining Company: A Case Study	Sinansari, Putri, Lopatka, 2022
3	Sustainable business models of small and medium-sized enterprises and the relationships to be established within the supply chain to support these models	Macchion, Toscani, Vinelli, 2023
4	Analysis of Sustainable Business Models: Exploratory Study in Two Brazilian Logistics Companies	Gomes, et al, 2022
5	Small and medium enterprises and sustainable business models: Exploring enabling factors for adoption	Troise, Santoro, Jones, Bresciani, 2024
6	The Interactions between a Sustainable Business Model and Scalability: A Case Study	Biscaro, 2023
7	Sustainable Business Model Based on Digital Twin Platform Network: The Inspiration from Haier's Case Study in China	Li, Cao, Liu, Luo, 2020
8	Sustainable business model design: A multi-case approach exploring generic strategies and dynamic capabilities on the example of German Wine Estates	Dressler, 2023
9	Sustainable Business Model Innovation in the Furniture Supply Chain: A Case Study	Shlopak, Nujen, Halfdanarson, 2020
10	How smart technologies can support sustainable business models: insights from an air navigation service provider	Fiorentino, Grimaldi, Lamboglia, Merendino, 2020
11	Sustainable business model innovation: The role of boundary work for multi-stakeholder alignment	Velter, Bitzer, Bocken, Kemp, 2020
12	Designing and testing a new sustainable business model tool for multi-actor, multi-level, circular, and collaborative contexts	Boldrini, Antheaume, 2021
13	Remanufacturing with upgrade PSS for new sustainable business models	Copani, Behnam, 2020

14	The “milky ways”: emerging sustainable business models for sustainable value creation in the dairy industry	Cantele, Signori, 2023
15	Drivers to implement the circular economy in born-sustainable business models: a case study in the fashion industry	Ostermann, Nascimento, Steinbruch, Callegaro-de-Menezes, 2021
16	Digital sustainable business models: Using digital technology to integrate ecological sustainability into the core of business models	Böttcher, Empelmann, Weking, Hein, Krcmar, 2024
17	Unpacking sustainable business models in the Swedish agricultural sector - the challenges of technological, social and organisational innovation	Barth, Ulvenblad, Hoveskog, 2021
18	Frugal innovation and sustainable business models	Hossain, 2021
19	Drivers of sustainable business model innovations. An upper echelon theory perspective	Dhir, Khan, Islam, Ractham, Meenakshi, 2023
20	Sustainable business model innovation: Scale development, validation and proof of performance	Bashir, Alfalih, Pradhan, 2022

Source: created by the author

Economic sustainability appears as an implicit aspect in almost every one of the articles studied and aims at the ability of the business model to ensure stable revenues, competitive advantage and long-term financial viability, including cost optimization and generating constant revenues through sustainable practices (He&Ortiz, 2021; Sinansari et al., 2022; Macchion et al., 2023; Gomes et al., 2022; Troise et al., 2024; Biscaro, 2023; Li et al., 2020; Dressler, 2023; Shlopak et al., 2020; Fiorentino et al., 2020; Velter et al., 2020; Boldrini&Antheaume, 2021; Copani&Behnam, 2020; Cantele&Signori, 2023; Ostermann et al., 2021; Böttcher et al., 2024; Hossain, 2021; Dhir et al., 2023; Bashir et al., 2022).

Ecological sustainability refers to reducing environmental impacts by adopting practices such as organic farming, reusing materials, using renewable sources, recycling, and reducing energy consumption and pollution.

Social sustainability includes social responsibility, promoting transparency, increasing consumer trust, and improving social and labor standards.

A sustainable business model involves a sustainable approach to the three pillars of business: value proposition, value creation, and value capture. The value proposition is the value that companies promise to deliver to customers. Value creation refers to the processes and methods by which businesses produce value using local materials, cheap resources, simple technologies, and innovative solutions to reduce production costs and provide affordable products to customers with limited resources. These companies use local or recycled materials and simple technologies to provide sustainable solutions that meet specific local needs, while also contributing to job creation. Value capture is how companies generate revenue and profit from the products they create. Value capture is also achieved by using alternative distribution

channels, collaborating with local institutions, and obtaining informal and formal support, including promotion through unconventional media and media

Innovation in sustainable business models involves developing new products and services, adapting quickly and flexibly to market changes, using feedback and continuous iteration for improvement, implementing smart technologies, and developing dynamic capabilities for organizational transformation.

Sustainable models use extensive collaboration and co-creation with stakeholders, including customers, suppliers, partners, institutions, and local communities to increase efficiency, transparency, and value created in value chains.

The feedback constantly collected from customers and other stakeholders is used to continuously optimize the sustainable business model and adapt it to market and consumer demands, contributing to economic, social and ecological performance.

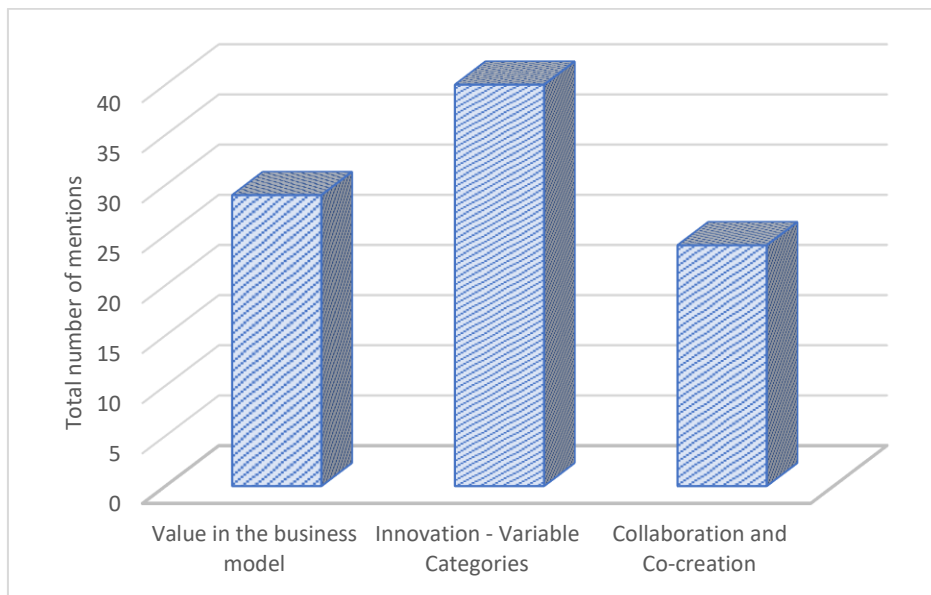


Figure 2: Aggregated summary of mentions in the main categories (Value in the business model, Innovation, Collaboration and Co-creation)

Source: created by the author

The conclusion of the studies analyzed is that sustainable business models focus on proposing, creating, capturing and delivering value through product and service innovation, adapting value propositions to consumer demands and developing efficient and transparent value chains based on collaboration.

4. Interpretation of results. Discussion and final observations

This research presents a bibliometric analysis of case studies on sustainable business models during the period 2020-2024. Below we will mention the defined objectives of the bibliometric analysis and the results obtained for each of the objectives.

- *The dimensions that formed the basis for the assessment of a sustainable business model.*
- *The extent to which indicators are used to quantify these dimensions.*
- *The type and quantity of research populations used as samples, as well as the field of activity of the company/companies analyzed.*
- *The methods of data collection and analysis.*
- *The existence of a template for a sustainable business model.*

Dimensions that formed the basis of the assessment of a sustainable business model.

The bibliometric analysis based on the review of the specialized literature in the specific case builds a five-dimensional framework of a sustainable business model and analyzes the association and causal relationship between the dimensions, as well as between the configuration of the elements that make up each of these dimensions. According to the results obtained from the bibliometric analysis, research on sustainable business models focuses mainly on considering the economic, social, ecological, organizational and technological benefits (dimensions).

The extent to which indicators are used to quantify these dimensions. Referring to our study on conducting the bibliometric analysis, the term “sustainable” does not only refer to the environmental or technological impact, but also to the economic, social and organizational effects that the company must address as a whole. Some aspects of business sustainability are not easy to measure, because some data are considered latent, somewhat quantitatively imperceptible and therefore cannot be measured immediately. For this reason, it is important to identify indicators that produce clear data that can be measured by specific tools and then subjected to the necessary analyses for interpretation. In this context, referring to the empirical studies of the 20 authors whose articles are included in this bibliometric analysis, it is important to highlight the main indicators that were used to measure the sustainability of the companies studied by them. Although there are a number of different methods for quantifying and assessing business model sustainability, there are still various obstacles to clearly defining the balance between economic success, ecological protection and social responsibility. He, Ortiz (2021, p.4) used Research Theory in combination with: Transaction Cost Theory, Resource-Based Theory, Resource-Dependent Theory, Dynamic Capacity Theory, Social Capital Theory and Value Chain Theory.

The type and amount of research populations used as samples, as well as the field of activity of the analyzed company/companies. Qualitative and quantitative research methods can be based on small or large samples depending on the objectives, the type or amount of data collected and the analysis approach used (Cash et al., 2022, p.10). In accordance with the research purpose, Macchion, et al., (2023), decided to include in the acceptance criteria for the sample: (1) small and medium-sized enterprises; (2) these enterprises must represent successful cases in the implementation of sustainable business models. The case companies were identified in different sectors such as: Advertising materials, Luxury leather goods, Wine producers, Packaging materials. Dressler (2023) conducted a multiple case study in the field of wine production, using as a sample: a cooperative composed of many small winegrowers; a

very small, family-owned, relatively young and growing winery; a largely sustainable state winery; a private winery that belongs to the premium wineries. He, Ortiz, (2021) set as selection criteria a company that is on the path of sustainable business innovation; that shows interest in configuring the logic of entrepreneurship and that is prone to co-research as an active participant with other market actors. Thus, the authors of He, Ortiz (2021) selected a company that operates as an e-commerce for fresh food products. Sinansari et al., (2022) selected as a sample a company that proves to be one of the most important suppliers of ecological minerals for the construction and energy industries. Gomes, et al, (2022) selected as a sample two companies that are in a mergers and acquisitions process. The sample used by Troise et al., (2024), consists of 36 small and medium-sized enterprises that have reconfigured their business models and adopted a sustainable business model. Two other selection criteria were the context and size of the enterprise. The companies were from different sectors: Manufacturing; Services and utilities activities; Wholesale and retail trade; Food and beverages; E-commerce and social networks; ICT, software; Finance, insurance and banking activities. Biscaro (2023) used as a sample a company that had a sustainable business model and was going through a scalability phase. The scalability dimension was studied in the context of increasing model capabilities in the automotive sector. Li et al., (2020) selected as a sample a company that made the transition from a single product to a full set of smart solutions. The studied sector coincides with the eco-innovation domain in the manufacturing industry of major smart home appliances. The company selected as a sample for the study by Shlopak et al., (2020) is a retailer of office furniture for SMEs, is locally owned and mainly serves customers operating in its region. The scope of the study is the manufacturing industry in the furniture sector along the supply chain. Fiorentino et al., (2020) used as a sample a company operating in the market as an air navigation service provider to explore how this firm uses smart technologies to successfully create its sustainable business model. The sample selected by Velter et al., (2020) includes 9 companies for the study that correspond to the manufacturing industry from different sectors such as: construction sector, carpet production; agricultural and energy companies; horticultural development sector; raw material processing; retail sales; art; equipment installation and marketing. Boldrini et al., (2021) selected 9 companies for the study from the innovation industry for plastic films designed to protect horticultural crops. The sample chosen for the study by Copani et al., (2020) corresponds to a detailed analysis of 19 companies pioneering remanufacturing from different sectors such as: phone and laptop service providers; aerospace-related product/service offerings. The study by Cantele et al., (2023) uses as a sample 7 agri-food companies in the dairy sector (butter, milk, yoghurt, typical fresh and aged cheese and other products such as ice cream and plant-based drinks). Ostermann et al., (2021) selected as a sample a company in the fashion industry that implemented circular practices, defined by a sectoral commitment. Böttcher et al., (2024) used a sample of 31 start-up companies to understand how ecological and economic sustainability is achieved thanks to the implementation of digital business models. Barth et al., (2021) used a sample of 1143 companies to study innovation in the agri-food industry. Hossain (2021) used a sample of 3 firms to study frugal innovation in the manufacturing industry of various machines. Dhiri et al., (2023) used a total of 20 firms as a sample to understand the integration of innovation within manufacturing firms in various sectors (automotive, food and beverage, industrial

consumables, textiles & clothing, electrical & electronics, etc.). Bashir et al., (2022) used a sample of 330 firms corresponding to various manufacturing and service companies with a priority orientation towards the local market, while a small part of them has a global and regional market orientation.

Methods of data collection and analysis. Bibliometric analysis showed that data were collected from different audiences in different periods of time. They range from simple surveys to more complex quantitative or qualitative experiments. Data collection methods include a variety of techniques and tools for collecting quantitative and qualitative data. In general, data collection methods are divided into two main categories: primary data collection methods and secondary data collection methods. Referring to the empirical research studied above, it is observed that the following primary data were used: questionnaires, interviews (structured or semi-structured), observation, survey, experimental method. So, in most empirical studies we observe that the authors opted for the development of surveys, interviews, existing databases were investigated and observational data were accumulated, considering these methods as appropriate approaches for data collection and management. Secondary data collection methods from internal and external data sources were also used for organizational data from published sources, online databases and publicly available data. After analyzing the collected data, of particular importance is the interpretation and presentation of the findings by the authors. Also, the interpretative structural modeling (ISM) method of stratifying and organizing the data accumulated from multiple sources and presenting a regular structural relationship was considered by the authors as a valuable tool for objective interpretations as close as possible to the reality of the firm. Also, regarding data analysis as one of the most important processes in obtaining reliable results, we emphasize that in some cases the data collected by the authors were compared with the theories studied, selecting the best practices in each field and planning and building new scenarios for companies. So, we note that the authors implemented different types of approaches to treat the case study / multiple case studies in research, among which we cite: descriptive, exploratory / comparative exploratory, experimental, structural, explanatory, abductive, inductive approaches, as well as Interpretative Structural Modeling (ISM).

The existence of a sustainable business model template. Since the Business Model Canvas (BMC) was first developed around 2008 and up until now in the contemporary environment, we highlight that many new versions have been created and more complex approaches have created more comprehensive scenarios for business models. New research has interpreted complete design systems that allow the inclusion of more specific steps from which the economic, social and environmental benefits of the business model can be determined. The Sustainable Business Model Canvas (S-BMC) is a new trend and a critical tool for startups and enterprises that aim to incorporate environmental and social objectives alongside economic ones into their core business model operations. The purpose of this paper coincides with the interpretation of several objectives. The fifth objective is developed “by identifying the currently perceived dimensions of corporate sustainability and business models; given that generic business model templates for corporate sustainability issues are scarce and that this gap still needs to be filled with critical analysis to move from rhetoric to a generic template for business models for sustainability” (Lüdeke-Freund, 2009: 3). To expand the list of classic components of the Business Model Canvas (BMC) and “to

capture new practices in this field, several archetypes of sustainable business models have been developed and classified according to several technological, social and organizational types” (Gomes et al., 2022: 5). “To illustrate sustainable business models, various elaborations have emerged in recent years, such as the flourishing screen by Jones and Upward in 2014”, which Gomes et al., (2022: 6) bring back with the relevant configurations. In this context, an example of this screen from the sustainable business model canvas is implemented as an appropriate template to obtain valid analysis results. Thus, three archetypes are included in the conceptual business model of Osterwalder and Pigneur. In the structure of the value proposition, the elements of profit, people and planet appear as a holistic and necessary approach to face the challenges of a sustainable future. This approach focuses on environmental change alongside economic and social change. In this sense, sustainable business models use a triple bottom line (people, profit, planet) to measure company performance, in addition to promoting environmental management in a systematic way. This template creates valuable information for interpreting business growth prospects.

5. Conclusions

In addition, the bibliometric analysis highlighted other useful aspects for the empirical research we propose:

- Research has shown that sustainability is an increasingly important feature in business. Transforming the business model into a sustainable model refers to the coherent development of economic, social and environmental sustainability. In some respects, it is argued that further integration of the principles of technological and organizational sustainability is necessary.
- The need for innovative design thinking helps to develop a more reliable sustainable business model. Thus, encouraging innovation in all dimensions of industrial activities can be achieved by updating or reconfiguring business elements and resources in a consistent coherence with the challenges of the future.
- Understanding the perception of the proposition or value creation is one of the main objectives of incorporating sustainable business model innovation.
- There is a close relationship between corporate social responsibility and environmental performance in the context of sustainable development.
- The efficiency of the entire information collection system from different subjects helps the business model to have the right approach to performing more in-depth data analysis. In this way, the realistic perception of the model regarding the evaluation of available information materials increases, the possibility of creating the necessary content filters increases and only those results that should be included in the implementation of sustainability practices can be incorporated with full subjectivity.
- Thus, the tendency to move from the classic model to a sustainable one is often highlighted. This phenomenon is related to the contribution derived from the use of digital IT, Internet of Things, electronic procurement, big data analysis, blockchain or artificial intelligence technology. This allows companies to

centralize and transform large amounts of raw or unstructured information into rules, valuable instructions, decisions and subsequently profits.

- Examining above the case studies of 20 authors in a variety of contexts and with different organizational forms, we note that several different types of sustainable business models can be distinguished. Mignon et al., (2023: 1365) proposes four different types of sustainable business models that are considered as such when complementary features are added to the traditional model in different contexts of sustainable improvement: (1) which involve improvements towards efficiency, (2) are based on new ways of doing business sustainably, (3) which have a stronger orientation towards society and/or the environment or (4) which are born sustainable. Referring to our research this data set validates our results. In the context of our study, these business models are considered sustainable because compared to classic (traditional) business models, they: (1) involve improvements in terms of logistical efficiency and coverage of the entire value chain system; (2) promotes new ways of transforming the model, by introducing new elements that completely transform the features of the business model and project the transition from one model to another; promotes the modification of the model by introducing additional business models at the root of the current model; is the replica of a metamorphosis of the model by acquiring a new business model; (3) refers to a more pronounced coherence of cooperation towards society and/or the environment; (4) suggests sustainable start-ups by creating and developing a completely new business model that is to develop on favorable perspectives and resistant to future entrepreneurial trends. Therefore, the analysis carried out by us above is validated by the data set proposed by Mignon et al., (2023). Therefore, the flexibility and agility of the model is encouraged, which can be proven by the rapid adaptation of the model to market requirements.
- The above analysis has shown that companies have different tendencies, perceptions and tools regarding the implementation of innovation within sustainable business models. The dimensions in which these companies project innovation correspond to concepts that differ from one company to another. The results presented indicate that different companies may have certain common elements in the perception of innovation, but these similarities appear only at a low level, being rare and/or partial. Overall, the study highlights a significant diversity of the innovative techniques used.
- At the same time, some models facilitate the transition from traditional approaches to sustainable ones more effectively. This depends on the extent to which these models manage to offer personalized products or services, better adapted to the individual requirements of customers. To achieve this objective, companies often use technology combined with social and environmental responsibility as stimulating elements.
- Researching the context of the works studied above showed that almost all models envisage transforming or have already transformed the traditional consumption processes according to which products, after being consumed, are thrown away. Meanwhile, practices are being implemented that increase the responsibility of the company first and the consumer second. This is achieved by transforming the entire system as a closed loop according to which

used products are subsequently subjected to recycling. This initiative not only protects the ecosystem as a whole, but also helps companies by reducing the total cost of resources and, at the same time, saves the use of resources in more responsible proportions.

- As companies demonstrate a strong societal or environmental focus, they often employ a variety of supply chain and collaboration strategies, such as partnerships, co-ownership, formal or informal alliances with stakeholders, close cooperation with suppliers, financial institutions and educational institutions, the involvement of employees, customers, investors and other relevant entities, or the development of long-term agreements. When companies establish and communicate a clear sustainability ambition or vision, they can simultaneously go beyond the traditional boundaries of their business model and generate new perspectives. Thus, by increasing cooperation with different stakeholders (society at large), companies benefit from a greater opportunity to share new ideas and create innovative perspectives. As a result, complementary capability transfers based on reciprocity can occur. By paying increased attention to stakeholders, both consumers and the company or other actors involved can benefit from shared advantages that contribute to mutual value creation.

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