

The Characteristics and Institutional Factors of Sustainable Business Models

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Abstract. *The need for sustainable business models (SBMs) has grown significantly in response to contemporary environmental and social challenges such as climate change. This article offers a literature review of the characteristics and institutional factors in the landscape of SBMs. We define SBMs as transformative models that yield positive impacts on the environment and society. It emphasizes the fundamental reconfiguration of how organizations create, deliver, and capture value. The literature review describes the characteristics of SBMs which attempt to balance profitability with the management of environmental and social impacts. We underline the relevance of stakeholder theory in the creation of SBMs in the context of the triple bottom line. Challenges in SBM adoption, such as organizational inertia, are also discussed. The circular economy model is a promising approach within SBMs, emphasizing product and material reuse in contrast to the linear take-make-use-dispose model. The alignment of SBMs with broader sustainability goals, corporate social responsibility (CSR) engagement, and proactive consideration of future regulatory changes would enhance the companies' strategic advantage. The paper concludes by advocating the adoption of SBMs not just as a responsible choice but as a strategic imperative for long-term success, resilience, and positive social impact.*

Keywords: sustainable business models, transformative changes, stakeholder benefits, circular economy, institutional factors, business model innovation, strategic advantage.

Introduction

Sustainable business models (SBMs) have gained significant relevance in response to the increasing environmental and societal challenges of modern business activity. As indicated by Bocken et al. (2014), the definition of business model innovation for sustainability extends beyond conventional economic considerations. These innovations produce significant positive impacts for the environment and society (Goni et al., 2021), as well as diminishing negative impacts. Innovations in business models involve a fundamental reconfiguration of how organizations and their networks create, deliver, and capture value. Comin et al. (2020) provide scientific evidence by illustrating how companies innovate with respect to traditional business models through the adoption of a sustainability strategy. The emphasis in the dedicated literature falls on business efficiency by resource use optimization and fostering collaborative and fair relationships between the company and its stakeholders (Nosratabadi et al., 2019).

To remain competitive for the next decades, companies must adopt sustainability principles and practices, and accommodate the requirements of national and supra-national regulators, including the European Commission. Business model innovation (Zhang et al., 2023) is a significant factor of competitive advantage that builds upon organizational learning and the contributions to the Sustainable Development Goals (SDGs). In the domain of business model

innovation, SBMs are viewed as a source of competitive advantage (Geissdoerfer et al., 2018). The authors' assertion suggests that SBMs might eventually supersede traditional business models, mirroring the transition from conventional to sustainable competitive advantage (Acciarini et al., 2022).

The literature, as summarized by Bocken and Geradts (2020), states that sustainable business model innovation aims to create significant positive impacts while minimizing negative impacts on the environment and society, thereby integrating principles of sustainability into the strategy of 21st century organizations (Evans et al., 2017). The circular economy (Bocken et al., 2016, Dragomir and Dumitru, 2024) is an application and illustration of the principles of cleaner production and consumption in the context of sustainable business models. Formally adopted by the European Union as part of its Green Deal strategy, the circular economy relies on principles such as recycling, reducing material loss, and creating zero-waste business models (Witjes & Lozano, 2016). This approach is the opposite of linear business model of take-make-use-dispose, emphasizing product and material reuse, as one of the main sustainability principles. Pizzi et al. (2021) highlighted that the three principles that inspire a paradigm shift within the circular economy are the conservation of natural capital, minimization of waste in industrial processes, and the reduction of negative externalities. These principles are the basis of creating sustainable business models, relying on the integration of economic, environmental, and social dimensions (Goni et al., 2021), also called the triple bottom line.

The present literature review sets the stage for a deeper exploration of the characteristics and institutional factors shaping the landscape of sustainable business models. SBMs and sustainable business practices are expected to reduce the negative sustainability-related impacts (social and environmental) of large corporations and small and medium size enterprises (SMEs). Measuring and reporting environmental, social, and governance (ESG) impacts using the IFRS Sustainability Standards, or the European Sustainability Reporting Standards is crucial for corporations of any size that seek to accelerate their positive sustainability-related impacts at the national and international level for the purpose of revenue growth and enhanced organizational reputation.

Literature review

Which are the characteristics of sustainable business models?

Sustainable business models (SBMs) have been discussed in academic articles and consultancy applications. Their characteristics have been studied extensively, notably by Geissdoerfer et al. (2018). The cited authors have argued that SBMs extend beyond economic implications to encompass environmental and social impacts – reducing negative impacts and enhancing positive impacts. A critical characteristic of SBMs is the efficiency gained from new technologies and investments in innovation. However, there are some negative consequences regarding employee working conditions during the transition to circular economy practices. For this reason, companies implement different methods to address employee health and safety issues at work, such as physiotherapy for factory workers (Inditex, 2022).

An important feature of SBMs is their orientation towards stakeholder benefits rather than the exclusive focus on sales, shareholder gains and stock prices (Geissdoerfer et al., 2018). The European Commission recommends due diligence and an extensive stakeholder consultation process for companies to shift from the profit-driven paradigm to a more sustainable perspective on business activity. Stakeholder theory is relevant in this context because it considers diverse

interests and impacts related to corporate activity. However, the implementation of sustainable business models is challenging because innovative ideas and promising concepts may not be implemented, and there may be a high rate of technological failure, particularly among start-ups in the market (Bocken & Geradts, 2020).

The adoption of SBMs is affected by difficulties to identify and evaluate appropriate business models for new technologies or market solutions (Geissdoerfer et al., 2018). The inertia to change existing business models is one significant cause of this difficulty. Inertia is often driven by the higher gross margins of incumbent technologies in early phases, leading to misallocation of resources (Bocken & Geradts, 2020). According to Zott and Amit (2017), inherent aspects of business model innovation, such as novelty, lock-in complementarities, and efficiency, demand changes in the current asset configuration, thereby causing conflicts with asset managers who resist the innovation process.

The adoption of sustainable business models (SBMs) is a complex process influenced by a multitude of factors that extend beyond the characteristics of these models. The misallocation of resources and conflicts with asset managers resisting innovation may further complicate this situation. Bocken et al. (2014) enumerated some challenges related to managerial mindset, company resources (cash, infrastructure), technological innovation, external stakeholder relations, and organizational tools that collectively impact the adoption of SBMs. The reluctance to allocate resources for business model innovation and clean technologies (Broccardo et al., 2023), the multidimensional and complex integration of technological advances, and the extra efforts required for extensive interactions with external stakeholders contribute to the difficulties of SBM adoption. The scarcity of existing sustainability-driven business modeling tools further complicates the adoption process. “Storytelling science” (Boje & Rana, 2021) is a method to explain the complexity of the economic phenomenon by combining multiple perspectives, dimensions, and contexts of ecologically and socially responsible capitalism.

The adoption of SBMs introduces a range of challenges (Bocken et al., 2014). The triple bottom line concept refers to company profits, benefits to society, and reduced environmental impact or environmental conservation (Gimenez et al., 2012). The usual managerial performance metrics (key performance indicators) can be an obstacle to adopting innovative and sustainable business models. Extensive consultations with stakeholders and the fine tuning of existing business methods for sustainability are identified as necessary in the pursuit of SBMs. Bocken et al. (2014) argued that sustainable business model innovation needs to address today’s sustainability challenges, for which strategic changes must occur at the core of business models. For example, the effects of climate change require managerial goals to be reframed by maximizing social and environmental benefits rather than short-term economic gains. However, the economic viability of SBMs may not be apparent immediately, requiring a long-term perspective and sustainability strategy (Utaminingsih et al., 2023).

Large corporations face specific challenges in adopting sustainable business models (Ritala et al., 2018). Prioritizing economic outcomes over social and environmental concerns, these corporations are characterized by institutional inertia and a lack of clear commitment to human rights and sustainable development (Goni et al., 2021). There are significant differences between how start-ups or SMEs adopt SBMs versus how large multinationals take these options into consideration. Global business is faced with complexity related to national policies, cultural norms, and management practices, which require integrated strategies to address diverse stakeholder needs. The Global Reporting Initiative (GRI) Guidelines are not sufficiently developed for producing accurate and relevant circularity disclosures, so there is a need for a comprehensive standard in this

domain (Dragomir and Dumitru, 2022), especially considering that the circular economy is part of the European Union Taxonomy of sustainable activities (Regulation (EU) 2020/852). The lack of a standardized circularity model in the fast fashion industry further complicates sustainability efforts. The mentioned authors have discovered that major brands do not transparently disclose the percentage of recycled textiles in their so-called “sustainable” collections, and we can raise questions about the “true” circularity of their value chains.

The managers’ focus on short-term profit maximization hinders the development of organizational capabilities to contribute to the UN Sustainable Development Goals (Bocken & Geradts, 2020) and create value for society. SBMs are characterized by a stakeholder-oriented approach, reporting on economic, environmental, and social aspects. SBMs are difficult to implement because of institutional inertia, economic uncertainties, and operational complexities at the international level that pose significant barriers. Moreover, sustainable business model innovation (SBMI) can be set-back by anticipated financial trade-offs and the lengthy experimentation period required for addressing sustainability challenges. The users of corporate reports (shareholders, employees, customers, suppliers, non-governmental organizations, communities, including all affected stakeholders), enumerated by the Corporate Sustainability Reporting Directive (CSRD), rely on a comprehensive reporting format to get relevant information regarding the financial viability, environmental impact, and corporate social responsibility of any enterprise.

The advantages of adopting SBMs in the modern business landscape

SBMs go beyond traditional business practices and provide advantages for organizations in reducing their negative sustainability-related impacts (Brillinger et al., 2020). Decisions that are characteristic to SBMs, such as the mechanism of value creation, facilitate a more scientific approach to SBM adoption. Effective risk management that is targeted at business model risk is a key factor influencing the adoption and success of SBMs. Fluctuations in cash flows and profits can be reduced through comprehensive risk management. This strategy adds resilience to SBMs and safeguards companies from potential failures while contributing to their long-term success. Risks that pertain to sustainability impacts (like physical risks and transition risks) can be classified into internal and external risks (Høgevold et al., 2014). This classification is mentioned by the Corporate Sustainability Reporting Directive (2022/2464) as a guide for companies to identify, measure, and manage risks associated with different aspects of their business models (Brillinger et al., 2020). Risk management is a necessary component of SBM adoption to offer a strategic advantage and align business activities with sustainable practices.

The alignment of SBMs with broader sustainability goals such as the United Nations Sustainable Development Goals (SDGs), provides a strategic advantage to multinational companies but also to SMEs (Dragomir & Duțescu, 2022; Morioka et al., 2017). SBMs can meaningfully contribute to the SDGs, guiding organizations to align their practices with global sustainability objectives. This alignment creates synergies between corporate goals and sustainability imperatives, propelling organizations toward positive societal and environmental impacts. For example, digitalization is an important factor in the adoption and implementation of SBMs (Broccardo et al., 2023). Digital tools such as the blockchain enable the creation of SBMs and can reshape a business model, as seen in sectors like manufacturing and logistics. Machine learning and other big data technologies lead to the adoption of SBMs by reducing transaction costs and improving the activity of employees. Integrating digital tools into SBMs.

The concept of CSR engagement in start-ups, discussed by Voinea et al. (2019), further accentuates the advantages of SBMs. The scientific literature has proven that corporate social responsibility (CSR) activities contribute to positive societal and environmental impacts, with potential benefits including cost savings, enhanced staff loyalty, reduced litigation, technological innovation, and positive consumer response. Entrepreneurial orientation refers to personal autonomy, finding innovative solutions, taking risks in the business world, and building a base for competitiveness through niche products and services. In this context, we can also talk about CSR engagement and finding small-scale sustainable solutions. The entrepreneurial orientation in the context of SBMs means to find the match between financial success and the organization's strategic commitment to CSR. Experienced entrepreneurs are affected by normative isomorphism (Dumitru et al., 2017), and are more likely to engage in CSR activities. Entrepreneurial values should be aligned with sustainability objectives in the process of designing an SBM. We can say that this type of business model reflects an organizational culture that makes CSR an integral component of strategic decision-making.

As an illustration, the Spanish energy company Iberdrola describes its own SBM as a future-proof approach aligned with the UN Sustainable Development Goal SDG 7 ("Affordable and clean energy"). The main business objective of Iberdrola is to make the transition to a carbon-neutral economy (Iberdrola, 2023). The company has the profitability and governmental support (being one of the largest in Spain and the most important producer of green energy in Europe), the technological feasibility at scale to realize its strategic ambition. The investment plan of Iberdrola (Iberdrola, 2020) is meant to reach the goal of carbon neutrality by 2030 but also to create more jobs, provide innovative solutions for clients, and open the avenue for green hydrogen. Additionally, Iberdrola's SBM accelerates value creation through geographical diversification and a robust financial position, thereby contributing to long-term resilience and positive societal impact. This organizational objective reflects the commitment to social change and green transformation in the energy sector. This synthesis indicates how Iberdrola's SBM has the core characteristics and strategic imperatives outlined in the literature above, offering insights into the multifaceted nature of sustainable business practices.

Iberdrola is known to be the leader of the green energy industry in the EU and committed and invested in research and development with more than 2 billion dollars, having more than 250 active projects underway. Iberdrola main goal is to reduce the amount of carbon dioxide into air and by supporting green energy. Iberdrola mainly supports the electrification of demand with new ways to use energy, for example producing green hydrogen. The company's cutting-edge Innovation and Training Campus in San Agustín de Guadalix and the Global Smart Grids Innovation Hub in Bilbao show how committed it is to new ideas. Iberdrola created the environment so the people can share information, learn new skills, and work together on study projects at these places. They have the R&D projects worth €32 million also created relationships with over 80 technology partners. Moreover, Iberdrola also have programs such as the Perseo startup program, representing the commitment to long-lasting energy solutions by carefully investing in new technologies.

The multifaceted nature of SBMs is described by their expected outcomes and local relevance (Morioka et al., 2017). SBMs contribute to the achievement of the UN's Sustainable Development Goals, motivating their adoption by offering a competitive advantage in the market (Radu et al., 2023). We can enumerate the following external factors: climate change, national and international legislation, industry evolution, public opinion, and technology. These factors have a powerful influence on SBM adoption and it is clear that proactive engagement with these

factors allows organizations to create institutional structures and functions that serve sustainability-related purposes. Finally, SBMs have the strategic advantage to respond to stakeholder demands and interests as required by the European Green Deal and the Corporate Sustainability Reporting Directive (CSRD). In brief, the adoption of sustainable business models is driven by a dynamic interplay of internal and external factors. The advantages of SBMs lie in their ability to holistically address various components of business models, incorporating effective risk management, digitalization, and entrepreneurial orientation.

Discussion and conclusions

Integrating characteristics and adoption factors for sustainable business models

Based on the strategies observed from different authors, we contend that a successful sustainability strategy must prioritize a triple bottom line approach (Geissdoerfer et al., 2018). This involves co-creating financial profits, social and environmental benefits, ensuring a balanced and inclusive approach to value creation. Companies should align their strategies with broader social goals, fostering long-term resilience and relevance and disclosing how they create stakeholder value. One key aspect of the sustainability model strategy is the proactive identification of sustainable business model archetypes (Bocken et al., 2014). The lack of an extensive taxonomy of such archetypes, as confirmed by the literature search, underscores the need for businesses to actively contribute to the development and exploration of innovative SBMs. Learning from industrial practices, businesses should engage in continuous exploration, experimentation, and knowledge-sharing within sector consortia to refine and innovate their sustainable approaches. This is an important avenue of future research.

To address the challenges highlighted by Ritala et al. (2018) regarding large corporations, an SBM-focused strategy should overcome institutional inertia and foster a clear commitment to sustainable development goals (SDGs). This requires a cultural shift within large corporations, urging senior management to prioritize social and environmental considerations alongside economic profits (Lüdeke-Freund et al., 2018). The sustainability model strategy should also consider the implications of circularity, as highlighted by Dragomir and Dumitru (2022). Circular business models require firms to apply reporting standards and establish clear value chains. Sustainability reporting standards such as the European Sustainability Reporting Standards (ESRS) demand increased transparency in annual reports, including the percentage of recycled materials used and the reduction in plastic pollution. The development of a standardized model of circularity within each relevant industry (like agriculture, textiles, electronics), set within the framework of the GRI Standards, will facilitate the integration of circular practices into mainstream business strategies.

In the context of multinational corporations, Bocken and Geradts (2020) emphasized the importance of dynamic capabilities for sustainability business model innovation. A robust sustainability model strategy must address the reluctance of corporations to invest in dynamic capabilities by showcasing the long-term benefits of sustainability initiatives including climate change mitigation and adaptation. This involves aligning financial considerations with sustainability goals, demonstrating the potential for financial value creation, and strategically managing the risks associated with climate transition plans (CDP, 2023).

To navigate the challenges outlined by Geissdoerfer et al. (2018) regarding the identification of appropriate business models for new technologies or solutions, the sustainability model strategy should prioritize agility and adaptability. Establishing cross-functional teams

dedicated to exploring and implementing innovative business models can enhance an organization's capacity to identify and adopt models that align with sustainability goals. Embracing a culture of continuous learning and adaptation is crucial for overcoming inertia and fostering a proactive approach to business model innovation (Press et al., 2020). The sustainability model strategy should also recognize the importance of resource allocation, technology innovation, and external relations, as emphasized by Bocken et al. (2014). Integrating technological innovation, especially clean technology, requires a multidimensional and complex approach. Engaging extensively with external stakeholders and the broader business environment demands a proactive and collaborative stance, involving partnerships and open communication (Utaminingsih et al., 2023).

In summary, an effective sustainability model strategy integrates insights from the literature, addressing both the characteristics of SBMs and the factors influencing their adoption. The triple bottom line theory is the precursor of the SBM and requires a cultural transformation within corporations, the adherence to circularity principles, the strategic move towards carbon-neutrality, the development of dynamic capabilities, and a move-fast approach to technological innovation. Businesses can navigate the complexities of sustainability goals and position themselves as leaders in the evolving landscape of sustainable business.

Dimensions of Sustainable Business Models (SBMs)	Factors Influencing Adoption	Advantages
Transition to renewable energy sources	Technological feasibility	Reduced carbon footprint
Implementation of energy-efficient practices	Economic viability	Cost savings
Adoption of circular economy principles	Regulatory support	Enhanced reputation
Investment in energy-efficient, low-impact infrastructure	Stakeholder pressure	Long-term resilience
Integration of green technologies	Market demand	Innovation opportunities
Adoption of sustainable development goals	Entrepreneurial mindset	Governmental support and regulatory compliance
Clean technologies	Innovation	Cutting-edge products and services
Increased transparency regarding social and environmental impacts	Clear and comprehensive reporting standards	Stakeholder approval and consumer onboarding

Characteristics and factors of sustainable business models

The various dimensions of SBMs encompass the triple bottom mine, entrepreneurial mindset, resources, technology, innovation, external relations, and modeling methods. Geissdoerfer et al. (2018) highlighted the importance of stakeholder value, urging a shift from exclusive focus on shareholder gains. The triple bottom line framework (Bocken et al., 2014) introduces the challenge of co-creating profits, social and environmental benefits while maintaining equilibrium. Managerial mindset emerges as a critical barrier, with established business rules and norms impeding the assimilation of new business models. The reluctance to allocate resources for innovation and the complexities of integrating technology innovations are identified as hurdles by Bocken et al. (2014). External relations, involving extensive interaction with stakeholders and adaptation to the business environment, require financial and planning efforts (Ritala et al.,

2018). The lack of modeling tools for sustainability-driven business solutions further complicates the situation and creates the need for academic research in this area.

The adoption of SBMs is a strategic choice and a transformative framework. Internal dynamics (Brillinger et al., 2020) can benefit from executive education regarding SBM characteristics and strategies (Hesselbarth & Schaltegger, 2014). The most important internal factor is effective risk management (Brillinger et al., 2020). Robust risk management adds resilience to SBMs, protects companies from potential pitfalls, and increases the attractiveness of SBMs for entrepreneurs. Digitalization is a transformative factor (Broccardo et al., 2023) that enables the creation of SBMs and facilitates a shift in how businesses operate and interact with stakeholders. Digital tools build stakeholder engagement as required by the CSRD, reducing transaction costs, and increasing customer satisfaction.

The alignment of SBMs with broader sustainability goals, such as the UN SDGs, provides a strategic advantage in public perception (Morioka et al., 2017). SBMs can significantly contribute to the SDGs because organizational practices will be closely aligned to global sustainability objectives. Corporate motivations, ranging from altruistic to mercenary reasons, reflect the strategic advantages of SBMs in the contemporary business landscape. Significant factors include customer requirements, shareholder initiatives, business development, diversity goals, and corporate reputation. CSR engagement in start-ups highlights the advantages of SBMs, contributing to positive societal and environmental impacts. CSR engagement aligned with entrepreneurial values and sustainability objectives becomes a key market advantage.

Towards a Comprehensive Sustainability Model Strategy

The sustainability strategy is a holistic model that relies on different factors. This strategy should encompass a managerial mindset that is transformative and goes beyond traditional business KPSs. Stakeholder-centric approaches refer to reducing negative social and environmental impacts while creating shareholder value (Geissdoerfer et al., 2018).

Initiating change at the core of business models is imperative to address environmental challenges and human rights violations (Bocken et al., 2014). The strategy should acknowledge that profitability may not appear in the short term. Also, SBMs take a long-term perspective in the light of (expected) regulatory changes and evolving market demands. To overcome the organizational inertia to change, corporations must recognize that the benefits of sustainability may not always be immediate and tangible, but there are long-term gains in reputation, risk mitigation, and economic resilience.

The circularity strategy ensures that businesses actively disclose and engage in circular practices such as the 4R: reduce, recycle, reuse, repair (Rodrigo-González et al., 2021). This strategy should encourage collaboration and knowledge-sharing among corporations, emphasizing the need for integrated sustainability strategies in the value chain. Overcoming institutional barriers requires a committed approach to organizational justice and sustainable development. Recognizing that innovation for sustainability demands dynamic capabilities, the strategy must incentivize corporations to invest in long-term experimentation and collaboration. The emphasis on positive sustainability impacts should guide resource allocation, with a focus on creating value beyond immediate financial gains (Bocken & Geradts, 2020).

In conclusion, navigating the characteristics and institutional factors of sustainable business models necessitates a paradigm shift towards a comprehensive sustainability model strategy. This strategy should be rooted in stakeholder-centric approaches, transformative mindsets, circularity, and dynamic capabilities.

Limitations and future research

This article offers a review of the characteristics and institutional factors driving the adoption of SBMs. It is important to acknowledge certain limitations that are specific to the scope and focus of this study. The literature review relies primarily on a selection of highly cited articles and authors in the field. In the vast literature on sustainable business models, certain studies and viewpoints may not have been omitted. The limitations of this literature review and the evolving nature of sustainability standards and regulations underscore the need for ongoing research to understand emerging trends and practices.

The diversity of businesses and industries can significantly impact the applicability of findings on SBMs. Start-ups, SMEs, and large multinational corporations in different industrial sectors may face different obstacles and difficulties that cannot be generalized. Future research needs to examine SBMs in specific industries and organizational contexts. The complexity of SBMs and the interaction of various factors cannot provide a one-size-fits-all solution. The aspects outlined in this article are a synthesis of existing literature and may need to be particularized to the unique characteristics and challenges faced by different organizations and industries. In brief, the article primarily focuses on the characteristics and factors influencing sustainable business models, leaving room for future research to delve deeper into the practical implementation challenges, measurement metrics, and long-term outcomes of such models.

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Acknowledgements

This paper was co-financed by The Bucharest University of Economic Studies during the PhD program.