

Sustainable Business Models Assessment: what are the social dimensions?

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Abstract

This paper explores the integration of social dimensions within Sustainable Business Models (SBMs) assessments. The literature reviews conducted identified key social dimensions focusing on different stakeholders' values & expectations, desirable outcomes, social impacts along product and value chains, human rights and labor standards and social innovation.

Keywords

Sustainable Business Models; Social Dimensions; Assessment.

Introduction

Sustainable Business Models (SBMs) are key in guiding production and consumption towards sustainability, distinct from traditional models in several ways. They offer value beyond economic gains, incorporating tangible ecological and social benefits. SBMs feature accountable supply chains where each participant is responsible for their environmental and social impact. The customer interface is designed to foster responsible consumption, mindful of the company's stakeholders. Financially, SBMs equitably distribute costs and benefits, while considering ecological and social effects (Boons and Lüdeke-Freund, 2013, p.13). Covering various approaches like Circular Business Models, social enterprises, bottom of the pyramid solutions, and product-service systems (Geissdoerfer et al., 2018), these models aim to create lasting value without depleting natural or societal resources, ensuring long-term planetary and community sustainability.

The implementation of SBMs is only part of the equation. Assessing their economic, environmental, and social impacts are crucial. Despite the existence of some indicators to measure SBMs performance (such as Rossi et al., 2020), most of them are qualitative representations such as the business models CANVAS and its derived tools (Osterwalder and Pigneur, 2010; Nussholz, 2018). Thus, there is a lack of quantitative assessments that can evaluate the environmental, social and economic performance of SBMs (Nosratabaldi et al., 2019; Bocken et al., 2021; Goffetti et al., 2022). Life Cycle Assessment (LCA) is a widely used tool for evaluating environmental impacts, but it is not originally designed to assess the impacts of business models. To address this, Böckin et al., (2022) introduced a business model LCA, which evaluates both economic and environmental impacts of SBMs, extending the traditional product-focused LCA to encompass business models. Nonetheless, a systematic methodology for assessing the social consequences of business models remains a gap. Research emphasizes the importance of understanding the social aspects of sustainability and circularity. Goffetti et al., (2022) highlighted a significant research gap in how social sustainability is incorporated into BM-LCA. Sustainable BMs are expected to have a social function, that means, improving (through their BM and offerings) human wellbeing. On the other side, the creation of this human wellbeing through business offerings will cause environmental impacts.

While environmental LCA has a counterpart in social LCA, which assesses the social and socio-economic aspects of products (Petti et al., 2018), it often falls short in fully measuring the comprehensive social impacts of business models. This shortfall is due to several reasons. Social impacts are inherently complex and multi-dimensional, encompassing subjective elements (Fan et al., 2015) like cultural values, human rights, working conditions, and community impacts, which social LCA may not fully capture. Moreover, many social impacts are qualitative and challenging to quantify (UNEP/SETAC, 2009), making it difficult for social LCA to provide a clear, measurable assessment. Additionally, social norms and values vary widely, and a social LCA relevant in one context may not be in another. This variability limits its applicability in global or evolving industries. Furthermore, different stakeholders, such as consumers, employees, and local communities, have varying expectations and perceptions (Watson et al., 2017) of social impacts, which may not be adequately represented in social LCA. In addition, social impacts are often interconnected with environmental and economic factors, necessitating an integrated assessment approach. When considering SLCA, it seems that the attention is based on the theoretical framework of Corporate Social Responsibility (CSR) (Baumann and Arvidsson, 2020), leading to an oversimplification of reality by dividing SLCA into stakeholders' categories and assessing the well-being according to political standards (Goffetti et al., 2020).

LCA and SLCA primarily focus on the environmental and social impacts of products or services. However, SBMs encompass broader aspects including economic, environmental, social, and governance factors which are not typically covered by LCA or SLCA. This means they don't assess the full range of impacts a business model can have (Böckin et al., 2022).

SBMs also often involve complex and dynamic systems that interact with various stakeholders and sectors (Bocken et al., 2014). LCA and SLCA are generally static and linear in their approach, which might not capture the systemic and interactive effects of a business model. SBMs involve strategic decisions that go beyond the environmental impact of a product or service (Boons and Lüdeke-Freund, 2013). These include market positioning, business practices, supply chain management, and customer engagement strategies, which are not addressed in LCA or SLCA. The scale and scope of impact of a business model can be much broader than what is typically considered in LCA or SLCA. A SBM might influence industry practices, regulatory frameworks, and consumer behaviors in ways that are not captured by product-level assessments (Baldassarre et al., 2020). SBMs often evolve over time, and their impacts can vary across different stages of the business lifecycle. LCA and SLCA usually analyze a static snapshot in time, which might not reflect the long-term impacts of a business model. Thus, current tools and methods may not effectively integrate these aspects and are not enough to assess social aspects in SBMs.

Hence, there is an urgent need for incorporating social measurement within companies' SBMs performance evaluations to ensure comprehensive sustainability. Previous research has primarily focused on environmental aspects (Oldfield et al., 2018; Bjornbet and Vildasen, 2021), often overlooking the significant impact of the social dimension (Scheepens et al., 2016; Rossi et al., 2020), particularly in labor-intensive sectors and in the utilization of non-natural resources. The social dimension, often less regulated and subject to greater discretion by companies, is frequently a voluntary business decision (CubillaMontilla et al., 2019). Understanding the various dimensions and perspectives of the social pillar of sustainability is essential. Thus, this paper aims to explore the different dimensions of the social pillar and how they can be reflected.

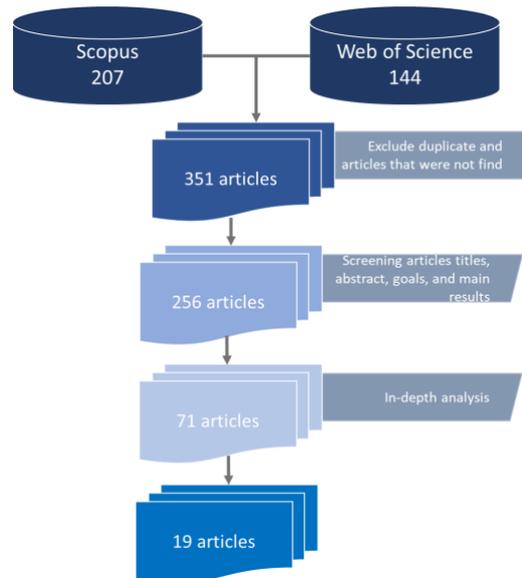
Methodology

To achieve the proposed goal, we conducted a literature review aiming to identify the social dimensions considered in SBMs studies. Besides the social dimensions, we also looked for the existence or not of indicators to measure the social dimensions and we tried to understand if the studies analyzed described the business model and the product system; if they addressed the expected and/or unexpected changes when changing towards a SBM; and if they considered any kind of organizational activities related to managing the business model and product system (e.g., innovation, monitoring, procurement, design, life cycle management etc).

To select the sample of studies to be analyzed we carried out searches in the databases Web of Science and Scopus using the string "((("social life cycle assessment" OR "social assessment" OR "social sustainability" OR "sustainability assessment" OR "social measurement" OR "social indicators" OR "social performance" OR "social KPIs" OR "sustainability performance" OR "CSR performance" OR "SDG assessment") AND (

"sustainable business model" OR "circular business model" OR "business model"))". We also applied some filter to narrow down the sample: only studies in English published in journals in the areas of environmental science, business management and accounting, engineering and decisions sciences were selected. Figure 1 shows the literature review and screening procedure.

FIGURE 1: LITERATURE REVIEW PROCEDURE



Results and Discussions

In our analysis of nineteen studies, we found that only one used SLCA for measuring social impacts (Martin and Herlaar, 2021). The majority relied on LCA-based approaches, incorporating general social dimensions and impacts, as guided by frameworks like the GRI guidelines (Cubilla-Montilla et al., 2019; Bianchini et al., 2022; Ferrara et al., 2023) and ESG scoring (Camodeca and Almici, 2021), or using other qualitative social indicators (Ghisellini et al., 2023; Winslow and Mont, 2019; Jagani et al., 2023). While these studies acknowledge business models in their assessments, their focus remains broad, covering product systems and life cycle stages without delving into the social impacts at the business model level.

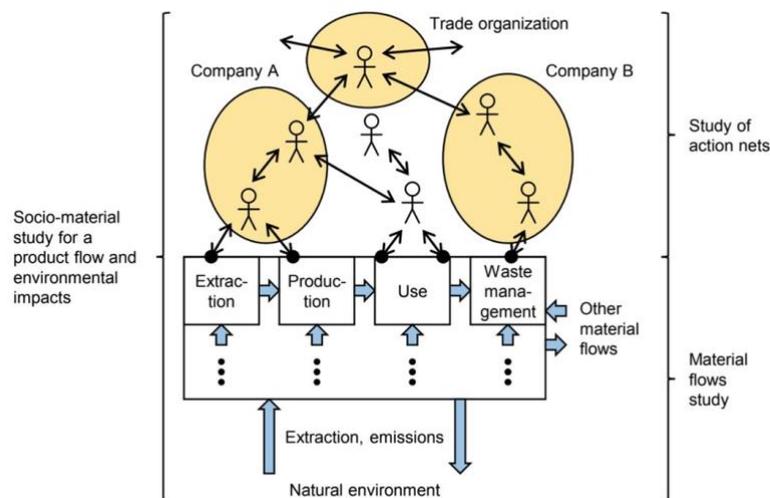
Geissdoerfer et al. (2018) discuss the expected and unexpected implications of adopting new business models, particularly in the context of a Circular Economy (CE). These include shifts in operational processes, stakeholder relationships, and organizational strategies. The transition to circular business models can lead to significant changes in resource management, waste handling, and product design, offering benefits like enhanced resource efficiency and challenges such as adapting supply chain management. Valencia et al. (2023) propose that such changes occur at both meso-scale, affecting value chains, and microscale, influencing management and business models. At the meso-scale, the focus is on refining

value chains, including advanced reverse logistics, supply chain meta-governance, and sustainable supplier selection. The micro-scale involves rethinking management strategies to implement circular models, impacting supplier relationships and market resilience. The need for broader value generation and openness to new business models, such as secondhand sales, sharing models, and resource recovery optimization, is emphasized. However, these studies generally do not detail how to integrate these changes into managing business models and product systems. Suggestions include redesigning traditional practices and evaluating sustainable performance (Geissdoerfer et al., 2018; Nigam et al., 2018), but specific methodologies for implementation remain unexplored.

Social Dimension within Sustainable Business Models Assessments

Before discuss the social dimensions, it is important to understand how we understand the material flows in a product system are related to the human actions in a production and consumption system. Figure 2 shows the socio-material model of flows and humans proposed by Baumann and Lindkvist (2021) that helps us understand this relation. The approach combines a material flow considering a constructivist use of LCA, and a constructivist organizational study of action nets, linked by the socio-material interaction points. Different socio-material interactions point along a flow are socially connected via action nets. It allows us to distinguish where the different kinds of social impacts mentioned in the literature take place.

FIGURE 2: ORGANIZATIONAL SCOPES



Source: Baumann and Lindkvist, 2021

Regarding the social dimensions, based on the analyzed studies, we identified five dimensions: values and expectations from different stakeholders; desirable outcomes from the different stakeholders; social impacts within the products and value chains; human rights and labor standards; and socially oriented innovations.



The diverse **values and expectations from different stakeholders** reveal a complex landscape where various interests and perspectives intersect. Social values and expectations often vary significantly among stakeholders, reflecting their unique positions, needs, and cultural backgrounds. Understanding these differences is crucial for companies aiming to effectively engage with their stakeholders and operate sustainable business models. Table 1 shows the different stakeholders, their values and expectations.

For companies, understanding and addressing the diverse social values and expectations of their stakeholders is not just a moral imperative but also a strategic necessity. It involves a careful balancing act and a commitment to continuous dialogue, transparency, and adaptation. By actively engaging with stakeholders and integrating their values and expectations into their operations and strategies, companies can build trust, enhance their reputations, and contribute to a more sustainable and equitable society.

TABLE 1: VALUES AND EXPECTATIONS FROM DIFFERENT STAKEHOLDERS

Stakeholder	Values & Expectations	Source
Employees	Fair wages, career plan, safe working conditions, opportunities for growth and development, work-life balance, and respect for diversity and inclusion	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Valencia et al., 2023; Kravchenko et al.,
Customers	High-quality products and services, ethical business practices, transparency and responsibility, welfare	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Pollard et al., 2022
Investors and Shareholders	Financial return, long-term business sustainability, ethical investment, and risk management associated with social issues	Ross et al., 2016; Geissdoerfer et al., 2018; Sousa-Zomer and Cauchick Miguel, 2018;
Suppliers and Business Partners	Fair business practices, long-term partnerships, mutual growth opportunities, and adherence to ethical standards	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Martin and Herlaar, 2021; Geissdoerfer et al., 2018; Pollard et al., 2022
Local Communities	Job opportunities, economic development, environmental protection, respect for local cultures, and community involvement	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Cubilla-Montilla et al., 2019; Winslow and Mont, 2019; Valencia et al., 2023
Governments and Regulators	Compliance with laws and regulations, tax contributions, support for national and local economic goals, and participation in policy dialogues	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Cubilla-Montilla et al., 2019; Martin and Herlaar, 2021
NGO's and Civil Society	Advocacy for social and environmental causes, corporate accountability, and transparency	Cubilla-Montilla et al., 2019; Winslow and Mont, 2019; Scarpellini, 2022; Valencia et al., 2023

Desirable outcomes, as shown in Table 2, refer to the positive impacts or benefits that sustainable practices bring to individuals, communities, and society at large. These outcomes are integral to creating a balanced and equitable approach to sustainability, ensuring that environmental and economic advancements do not come at the expense of social well-being. Some of the desirable outcomes are somehow related to values and expectations, but the measurement probably should be different.

TABLE 2: DESIRABLE OUTCOMES

Stakeholder	Desirable outcomes	Source
Employees	Respect and value internal resources, employee's involvement in the management of the company, employment stability, fair wages, non-discrimination, education and skill development (lifelong learning, vocational training and knowledge sharing)	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Pandyaswargo et al., 2023
Customers	Health and safety, marketing communication, customer privacy, feedback mechanisms, high-quality products and services	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018
Investors and Shareholders	Demonstrate company's ethical and social commitment, lucrative business	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Martin and Herlaar, 2021; Valencia et al., 2023
Suppliers and Business Partners	Ethical and social commitment in supply chain, compliance with health and safety, employee welfare and stakeholder engagement, supply chain collaboration, diversity in supply chain	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Martin and Herlaar, 2021; Valencia et al., 2023; Jagani et al., Kervola et al., 2022; Ghisellini et al., 2023; Pollard et al., 2022
Local Communities	Improved quality of life (access to basic needs, health and wellbeing; housing and living conditions), community well-being and cohesion (community engagement, cultural preservation, social connectivity), empowerment of local population	Pandyaswargo et al., 2023; Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018
Governments and Regulators	Sustainable economic growth (local economic development, responsible consumptions and production), compliance with labor conditions and social security,	Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018; Cubilla-Montilla et al., 2019
NGO's and Civil Society	Decent job, social equity and inclusion (reducing inequalities, diversity and inclusivity, and empowerment), environmental stewardship (conservation of natural resources and climate action), gender equality, existence of human rights grievance mechanisms	Ross et al., 2016; Winslow and Mont, 2019; Valencia et al., 2023; Cubilla-Montilla et al., 2019

Examining the **social impacts within products and value chains** involves looking beyond the immediate environmental and economic aspects of a product's life cycle to understand how it affects people at each stage of the value chain. This analysis can encompass a wide range of issues, from labor practices and human rights to community impacts and consumer safety, and it reflects most of the values from the different stakeholder. In this sense, we can see an overlap of classifications. When sourcing for raw materials the issues are related to labor conditions, impact on local communities, land rights, and use of conflict minerals. During the manufacturing processes issues such as worker safety, fair wages, working hours, child labor, and health risks in factories require attention. Regarding supply chain management, transparency in the supply chain, subcontracting practices, transportation impacts, and supplier diversity are points of attention. During the product design and development, the inclusivity, cultural sensitivity, and potential social impacts of product use need to be addressed. During the usage phase and thinking on the consumer safety, the issues are related to the product safety, impact on consumer health, and user privacy

(especially for digital products). At the end-of-life and disposal the issues are regarding worker safety in disposal, impact on communities near waste sites, and opportunities for recycling or reuse.

Human rights and labor standards ensure that organizations respect and promote the rights and well-being of all individuals involved in their operations and supply chains. The aspects presented in this dimension is similar to the ones presented by the **social impacts within products and value chains** dimension, and it is similar to assessment reference criteria in LCIA what could correspond to social criteria for social assessment. In this dimension, the key aspects are the use of child labor and forced labor (Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018) in production processes; ensuring employees receive fair compensation for their work and are not subjected to excessive working hours (Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018); providing a safe workplace free from hazards (Valencia et al., 2023), with proper health and safety measures in place; respecting workers' rights to form unions and engage in collective bargaining (Bianchini et al., 2022; Sousa-Zomer and Cauchick Miguel, 2018); preventing discrimination based on race, gender, religion, sexual orientation, or other personal characteristics; respecting the privacy of employees and protecting their personal data; involving workers in decisionmaking processes and respecting their opinions and grievances. By prioritizing human rights and labor standards, companies not only fulfill their ethical obligations but also contribute to a more equitable and sustainable global economy.

The **social innovation** dimension refers to new strategies, concepts, ideas, and organizations that meet social needs of all kinds — from working conditions and education to community development and health — and that extend and strengthen civil society. It is about applying fresh solutions to address pressing societal problems, often involving crosssector collaboration (Valencia et al., 2023; Pandyaswargo et al., 2023; Pollard et al., 2022; Geissdoerfer et al.; 2018). Social innovation is a vital mechanism for addressing societal challenges in a sustainable and impactful way. It requires a blend of creativity, collaboration, and a deep understanding of the social context. By fostering social innovation, societies can develop solutions that not only address immediate needs but also build stronger, more resilient communities capable of facing future challenges.

Conclusions

The analysis of the studies revealed a significant overlap in the identified social dimensions within SBMs. Values and expectations of different stakeholders often intertwine with desirable outcomes, reflecting a synergy between what stakeholders expect and the beneficial impacts they seek. Similarly, social impacts within products and value chains frequently mirror concerns addressed under human rights and labor standards, indicating a common thread in addressing social sustainability. This overlap suggests that a

comprehensive assessment of SBMs should consider these interconnected aspects to ensure a holistic understanding of social sustainability. The studies also indicated that a socio-material perspective, which integrates both material flows and human actions, is essential in understanding the impact of SBMs. This perspective helps in recognizing how different social impacts are not isolated but are interconnected through the product life cycle. Such an approach is valuable for identifying where and how social impacts occur and for understanding the interaction between social and material aspects of sustainability.

The current use of LCA and SLCA methodologies in SBM evaluations tends to focus on environmental and economic impacts, often overlooking the depth and breadth of social impacts. There is a need for more systematic and integrated methodologies that can capture the complex social dimensions associated with SBMs. This involves expanding the scope of traditional LCAs to include comprehensive social criteria, thereby providing a more nuanced and accurate assessment of the social impacts of business models. The studies highlight the need for a clearer conceptualization of social aspects within SBMs. This includes defining and measuring diverse social factors such as stakeholder values, expectations, human rights, labor standards, and social innovation. A better understanding and definition of these social dimensions are crucial for developing effective tools and methodologies for social impact assessment in SBMs.

Future research should focus on going deeper in the understanding of these different forms of 'labelling' the social dimensions, and developing methodologies that can effectively integrate the socio-material perspective into SBM assessments. Moreover, there is a need to refine and expand the criteria and indicators used in SLCA to capture the complex and dynamic nature of social impacts in SBMs. This would enable a more comprehensive and accurate assessment of the sustainability of business models, considering all three pillars of sustainability: environmental, economic, and social.

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