

Sustainability transition in SMEs : Stakeholder incentives and business impact

Ákos Tóth-Pajor [†]

Vivien Csapi ^{*}

Department of Finance and Accounting

Faculty of Business and Economics

University of Pécs

Pécs 7622

Hungary

Amir Moradi [§]

Department of Finance

International School of Business

HAN University of Applied Sciences

Arnhem

The Netherlands

Abstract

The study examines the theoretical and empirical frameworks of sustainability transition in SMEs, focusing on sustainability strategy, disclosures, and business impact through the lens of stakeholder theory. A systematic literature review methodology was applied using the Scopus database, complemented by keyword and co-occurrence analysis with VOSviewer to explore the theoretical structures of the topic. The analysis identified five theoretical clusters related to strategy and innovation, circular economy and supply chains, competitiveness and resilience, climate change and finance, and sustainability reporting as main drivers of sustainability transition in SMEs.

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Keywords: Sustainability transition, Stakeholder incentives, Network analysis, Clustering.

[†] ORCID-ID: 0000-0002-1137-6658

^{*} ORCID-ID: 0000-0003-1996-091X

[§] ORCID-ID: 0000-0003-1169-7192

[†] E-mail: toth-pajor.akos@ktk.ptt.hu

^{*} E-mail: csapiv@ktk.ptt.hu (Corresponding Author)

[§] E-mail: amir.moradi@han.nl

1. Introduction

The contemporary business landscape is experiencing a significant transition from a shareholder-centric model to a stakeholder-driven approach fueled by the increasing importance of sustainability within the Environmental, Social, and Governance (ESG) framework [1][2]. While large corporations have largely embraced ESG principles, small and medium-sized enterprises (SMEs) also play a crucial role in this transition. The adoption of ESG principles among SMEs is still in its early stages, with financial constraints posing a significant barrier [3].

Stakeholder theory suggests that businesses need to internalize negative externalities and take responsibility for stakeholders including the nature and society resulted in the reduction of business risks related to sustainability [4]. Stakeholders incentivize businesses to engage into sustainability transition, develop an ESG strategy including sustainability due diligence, and provide information about the sustainability matters via the means of sustainability reporting. In the context of SMEs, stakeholder incentives are mainly attributed to supply chain due diligence, access to finance, and access to government subsidies. As global regulatory frameworks for sustainability reporting become more stringent, businesses—particularly SMEs—must proactively adapt to ESG requirements to maintain competitiveness and secure survival [5]. The integration of ESG principles into business models is no longer optional but essential for long-term resilience, stakeholder trust, and sustainable value creation [6].

The structure of the paper is as follows: First, we define our research questions and introduce the research methodology. This is followed by a review of theoretical structures related to sustainability transition in SMEs. Finally, we conclude with a discussion about the implications of the results.

2. Research question and research gap

Concerning the research question RQ1, our primary research objective is to identify and understand the key factors that drive sustainability transitions within SMEs. By integrating insights from the literature of sustainability transition, we aim to shed light on the incentives, goals and objectives that influence how and why SMEs embark on sustainability-oriented transformations.

RQ1: What factors drive sustainability transition in SMEs?

Our research addresses a notable gap in the existing literature, namely the limited attention given to sustainability transitions within the context of small and medium-sized enterprises. While much of the current discourse focuses on large corporations—often subject to strict regulatory obligations—SMEs are frequently overlooked, despite representing a substantial proportion of most national economies and playing a critical role in job creation, innovation, and local development. We demonstrate that sustainability strategy in SMEs is driven by a multifaceted set of incentives that go beyond the pursuit of financial performance.

3. Research methodology

To gain a deeper understanding of the theoretical frameworks underpinning sustainability transitions, we conducted a comprehensive systematic literature review using the Scopus database. The methodological approach followed in our review is illustrated in Figure 1. Our research process began with the careful selection of keywords and the establishment of screening criteria to ensure a focused and relevant inquiry. Specifically, we employed the following keywords related to the integral elements of sustainability strategy: sustainability, transition, strategy, due diligence, disclosure, reporting, small business, SME, and SMEs. To refine our search, we restricted the results to English-language journal articles within the disciplines of business, management, and accounting, as well as

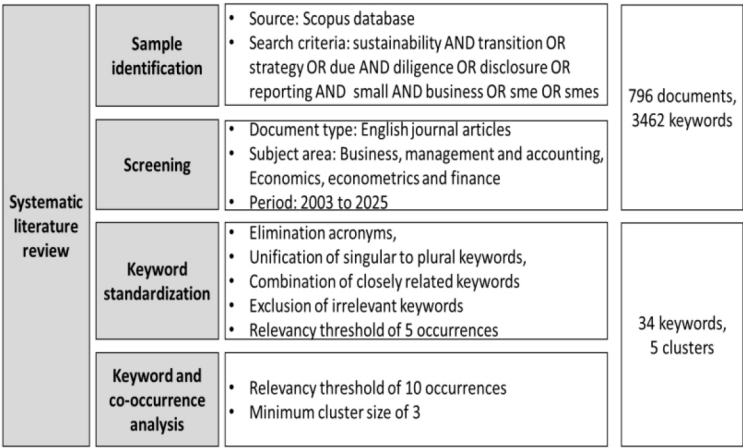


Figure 1
Research methodology

economics, econometrics, and finance. Additionally, we limited the timeframe of our analysis to publications between 2003 and 2025. This structured search yielded a total of 796 documents and identified 3462 unique keywords related to sustainability transitions in small and medium-sized enterprises (SMEs).

To further investigate the theoretical structures within this field, we conducted a keyword and co-occurrence analysis utilizing VOSviewer, following the methodological approaches of [7][8][9]. Prior to performing the analysis, we implemented a rigorous data standardization process. This involved setting an initial relevancy threshold of five keyword occurrences, after which we refined the dataset by eliminating acronyms, harmonizing singular and plural forms, merging closely related terms, and filtering out irrelevant keywords.

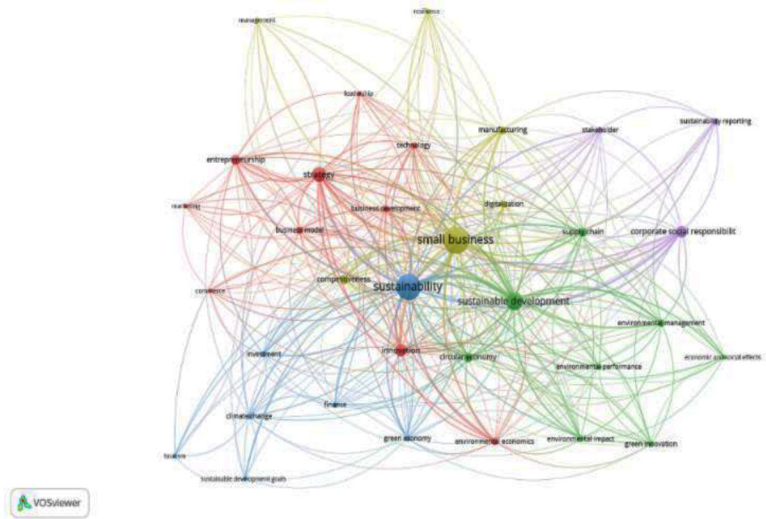
Following this preliminary refinement, we increased the relevancy threshold to ten occurrences, ensuring that only the most pertinent keywords were retained. This iterative process allowed us to delineate a clear and explicit theoretical structure. Ultimately, our analysis identified 34 highly relevant keywords, each appearing at least ten times within the dataset. These keywords were then grouped into five thematic clusters, each containing a minimum of three interrelated terms, thereby revealing key conceptual groupings within the sustainability transition discourse in SMEs.

4. Theoretical structures of sustainability transition

4.1 *Data analysis*

To explore the theoretical structures related to the main drivers of sustainability transition in SMEs, we conducted a co-occurrence analysis, the results of which are presented in Figure 2 through a network visualization map. This map illustrates the interconnectedness of key concepts within the field, offering insights into the dominant themes shaping sustainability transitions. The size of the nodes represents the frequency of keyword occurrences, while the thickness of the links signifies the strength of relationships between keywords, highlighting the most influential connections within the dataset.

The network consists of 34 nodes and 338 links, with a total link strength of 1956, demonstrating a dense web of interrelated sustainability concepts. Through this analysis, we identified five distinct theoretical clusters that define the landscape of sustainability transition: strategy and



Source: Scopus and VOSviewer

Figure 2
Co-occurrence analysis

innovation, circular economy and supply chains, competitiveness and resilience, climate change and finance, and sustainability reporting.

4.2 Results

Table 1 presents the results of the keyword analysis, detailing keyword frequencies and concise descriptions of the identified clusters. The strategy and innovation cluster highlights the influence of sustainability-focused business strategies and technological advancements on long-term growth and adaptability. Dhawan, Roy, and Bhardwaj [10] emphasize that during COVID, self-sufficiency gained importance over consumption-based growth. Mohanty et al. [11] highlights that strategic initiatives can promote innovation and entrepreneurship to foster economic and social progress in line with the SDGs in India. Merabi et al. [12] apply the micro foundations perspective to understand the development of dynamic capabilities for sustainability transitions, identifying leadership commitment and stakeholder engagement as key enablers.

The Circular Economy and Supply Chains cluster emphasizes sustainable production and consumption models, focusing on resource efficiency and responsible supply chain management. Gujrati et al. [13] find that financial, technological, organizational, and regulatory barriers

Table 1
Keyword analysis

Clusters	Keywords and frequencies	Description
Strategy and Innovation	strategy (106), innovation (70), entrepreneurship (45), business model (25), environmental economics (23), business development (22), technology (20), commerce (11), leadership (11), marketing (11)	The strategy and innovation cluster encompasses the role of sustainability-driven business strategies and technological advancements in fostering long-term growth and adaptation.
Circular economy and supply chains	sustainable development (152), circular economy (38), supply chain (36), environmental management (27), environmental impact (17), green innovation (17), environmental performance (13), economic and social effects (10)	The circular economy and supply chains cluster highlights sustainable production and consumption models, emphasizing resource efficiency and responsible supply chain management.
Climate change and finance	sustainability (327), investment (16), climate change (13), finance (13), green economy (13), sustainable development goals (11), tourism (10)	The climate change and finance cluster underscore the financial mechanisms, risk management strategies, and regulatory frameworks that support businesses in addressing climate-related challenges.
Competitiveness and resilience	small business (354), competitiveness (42), manufacturing (28), digitalization (27), resilience (12), management (11)	Competitiveness and resilience focus on how sustainability initiatives strengthen business adaptability, market positioning, and long-term viability.
Sustainability reporting	corporate social responsibility (67), sustainability reporting (19), stakeholder (18)	The sustainability reporting cluster reflects the increasing importance of transparent disclosure practices, ESG indicators, and compliance with evolving sustainability standards.

have a significant impact on the adoption of green supply chain management practices in India. However, the adoption significantly reduces carbon footprint and waste and improves energy efficiency in Fast-Moving Consumer Goods (FMCG) firms, though results may not generalize across sectors. D'Amato, Veijonaho, and Toppinen [14] explore circular bioeconomy business models in the Finnish forest industry, highlighting resource efficiency and waste reduction as key sustainability contributors.

The Climate Change and Finance cluster underscores financial mechanisms, risk management strategies, and regulatory frameworks that support businesses in addressing climate-related challenges. Cantele and Zardini [15] investigate whether sustainability practices provide competitive advantages for small businesses, demonstrating the positive impact on brand reputation and financial performance. Ukko et al. [16] highlight the moderating role of sustainability strategy in the relationship between environmental management and financial performance, showing that proactive strategies amplify positive financial impacts.

The Competitiveness and Resilience cluster focuses on how sustainability initiatives strengthen business adaptability, market positioning, and long-term viability. Gunasekaran, Rai, and Griffin [17] explore the interconnection between resilience, competitiveness, and supply chain management in SMEs, identifying digital tools, collaborative partnerships, and risk mitigation strategies as key enablers.

The Sustainability Reporting cluster reflects the growing importance of transparent disclosure practices, ESG indicators, and compliance with evolving sustainability standards. Calabrese et al. [18] explore materiality analysis's role as a strategic tool, enhancing stakeholder engagement and strategic alignment.

5. Conclusion and implications

The sustainability transition of SMEs is a multidimensional process that integrates strategic planning, innovation, resilience-building, and regulatory compliance. To address our research question (RQ1) concerning the key drivers of sustainability transitions in SMEs, we conducted a co-occurrence and keyword analysis. The theoretical structures emerging from the co-occurrence analysis underscore the interrelated nature of sustainability strategies, innovation, finance, circular economy practices, and transparent reporting in facilitating sustainability transitions and enhancing business competitiveness. Our study has some limitations, as

the co-occurrence and keyword analysis reflect our subjective interpretation of the underlying literature and theoretical structures. Our findings highlight leadership commitment, stakeholder engagement, resource efficiency, waste reduction, and the mitigation of sustainability-related risks as critical contributors to the sustainability performance of SMEs.

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References

- [1] M. C. Jensen, "Value Maximization, Stakeholder Theory, and the Corporate Objective Function," *Business Ethics Quarterly*, vol. 12, no. 2, pp. 235–256 (Apr. 2002), doi: 10.2307/3857812.
- [2] R. E. Freeman and D. L. Reed, "Stockholders and Stakeholders: A New Perspective on Corporate Governance," *California Management Review*, vol. 25, no. 3, pp. 88–106 (Apr. 1983), doi: 10.2307/41165018.
- [3] P. Lesnikova and J. Schmidtova, "Development of Corporate Sustainability in Enterprises through the Application of Selected Practices and Tools," *Organizacija*, vol. 53, no. 2, pp. 112–126 (May 2020), doi: 10.2478/orga-2020-0008.
- [4] R. E. Freeman, J. S. Harrison, A. C. Wicks, B. L. Parmar, and S. de Colle, *Stakeholder Theory*. Cambridge University Press, 2010. doi: 10.1017/CBO9780511815768.
- [5] Kolk, "Sustainability, accountability and corporate governance: exploring multinationals' reporting practices," *Business Strategy and the Environment*, vol. 17, no. 1, pp. 1–15 (Jan. 2008), doi: 10.1002/bse.511.
- [6] Madrid-Guijarro and A. Duréndez, "Sustainable development barriers and pressures in SMEs: The mediating effect of management commitment to environmental practices," *Business Strategy and the Environment*, vol. 33, no. 2, pp. 949–967 (Feb. 2024), doi: 10.1002/bse.3537.
- [7] Y. Feng, Q. Zhu, and K.-H. Lai, "Corporate social responsibility for supply chain management: A literature review and bibliometric

- analysis," *Journal of Cleaner Production*, vol. 158, pp. 296–307 (Aug. 2017), doi: 10.1016/j.jclepro.2017.05.018.
- [8] Paltrinieri, M. K. Hassan, S. Bahoo, and A. Khan, "A bibliometric review of sukuk literature," *International Review of Economics & Finance*, vol. 86, pp. 897–918 (Jul. 2023), doi: 10.1016/j.iref.2019.04.004.
- [9] Zupic and T. Čater, "Bibliometric Methods in Management and Organization," *Organizational Research Methods*, vol. 18, no. 3, pp. 429–472 (Jul. 2015), doi: 10.1177/1094428114562629.
- [10] A. Dhawan, M. Roy, and A. Bhardwaj, "Sustainability and ease of doing business in India : Challenges and influencing factors," *Journal of Information and Optimization Sciences*, vol. 45, no. 6, pp. 1807–1822 (2024), doi: 10.47974/JIOS-1771.
- [11] N. Mohanty, J. K. Parida, A. Kumar, S. L. Hota, and D. Debyani, "Sustainable development and zero hunger : A focus on India's social entrepreneurship initiatives," *Journal of Information and Optimization Sciences*, vol. 45, no. 6, pp. 1717–1725 (2024), doi: 10.47974/JIOS-1707.
- [12] S. Mehrabi, M. Mahdad, J. Bijman, C. Cholez, J. C. P. Mesa, and C. Giagnocavo, "Microfoundations of dynamic capabilities enabling scaling pathways of sustainability-oriented innovation business models," *Business Strategy and the Environment*, vol. 34, no. 1, pp. 849–871 (Jan. 2025), doi: 10.1002/bse.4004.
- [13] R. Gujrati, C. Hatipoglu, N. K. Torun, and S. Kadyan, "Impact of adoption challenges on sustainability outcomes in FMCG green supply chains : The role of smart technologies," *Journal of Information and Optimization Sciences*, vol. 46, no. 5, pp. 1773–1791 (2025), doi: 10.47974/JIOS-2034.
- [14] D. D'Amato, S. Veijonaho, and A. Toppinen, "Towards sustainability? Forest-based circular bioeconomy business models in Finnish SMEs," *Forest Policy and Economics*, vol. 110, p. 101848 (Jan. 2020), doi: 10.1016/j.forpol.2018.12.004.
- [15] S. Cantele and A. Zardini, "Is sustainability a competitive advantage for small businesses? An empirical analysis of possible mediators in the sustainability–financial performance relationship," *Journal of Cleaner Production*, vol. 182, pp. 166–176 (May 2018), doi: 10.1016/j.jclepro.2018.02.016.
- [16] Ukko, M. Nasiri, M. Saunila, and T. Rantala, "Sustainability strategy as a moderator in the relationship between digital business strategy

and financial performance," *Journal of Cleaner Production*, vol. 236, p. 117626 (Nov. 2019), doi: 10.1016/j.jclepro.2019.117626.

- [17] Gunasekaran, B. K. Rai, and M. Griffin, "Resilience and competitiveness of small and medium size enterprises: an empirical research," *International Journal of Production Research*, vol. 49, no. 18, pp. 5489–5509 (Sep. 2011), doi: 10.1080/00207543.2011.563831.
- [18] Calabres, R. Costa, N. Levialdi Ghiron, and T. Menichini, "Materiality analysis in sustainability reporting: a tool for directing corporate sustainability towards emerging economic, environmental and social opportunities," *Technological and Economic Development of Economy*, vol. 25, no. 5, pp. 1016–1038 (Aug. 2019), doi: 10.3846/tede.2019.10550.

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