

Responsible Innovation in SMEs

Subjects: Business

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SMEs, which represent 95% of the workforce, are considered responsible for approximately 60% of all greenhouse gas emissions and approximately 70% of global pollution [20, 98]. Thus, the concern for the care of natural resource degradation, climate change, economic progress, and societal well-being has promoted a scientific debate and social attention. In light of the current business situation, responsible innovation refers to a new approach to innovation governance that emphasizes the common and recurrent logic of sustainable development, adjusted to the needs of society [30]. However, its integration into industry is still in its infancy, and even more so when it comes to small and medium-sized enterprises (SMEs). The aim of this research is to use a systematic literature review to develop a conceptual model for responsible innovation and its relationship with SME performance, in connection with sustainable innovation and corporate social responsibility practices. A bibliometric analysis of 102 articles collected between 2000 and April 2020 from the Web of Science database was used, in addition to the systematic literature review using the Gephi and NVivo software. The study presents an overview of the articles, authors, and most influential journals and research clusters identified, and provides a solid conceptual framework to be applied in this field and in the context of SMEs.

Keywords: responsible innovation ; responsible research and innovation ; corporate social responsibility ; sustainable innovation ; industry ; small and medium-sized enterprises ; SMEs

1. Introduction

Growing global concern about environmental degradation, social inequality, and over-consumption of resources has attracted increasing attention in academic literature ^{[1][2]}. In light of the current situation, one of the means for working towards the United Nations' 17 proposed Sustainable Development Goals (SDGs) for 2030 regarding the major challenges being faced in terms of natural resource degradation, climate change, economic progress, and society's welfare is "innovation" ^[3] and the need for it to be "responsible" ^{[4][5][6][7]}.

2. Responsible innovation

Responsible innovation has been a topic of discussion because it connects the basic concerns of business with the global challenges of society, i.e., the challenge for companies in this increasingly competitive world to innovate in order to generate economic benefits, but also to generate sustainable social value, meaning that "responsibility" is now deeply rooted in the conscience of entrepreneurs, and consequently in companies' DNA ^[8]. However, the integration of responsible innovation in business is still in its infancy ^{[5][9]}. In other words, there is not yet a clear understanding of what should be "done" ^[10], especially in small and medium-sized enterprises (SMEs), which are largely unaware of what the concept of responsible innovation implies ^[6] because, as it is an emerging topic, very little practical research has been done to understand its influence on sustainable development and organisational capacities ^[11].

On the one hand, Responsible Innovation (RI) and Responsible Research and Innovation (RRI) are a continuous process of aligning research and innovation with the values, needs, and expectations of society ^[12]. Although the issue of responsible research and innovation is a topic discussed among several fields and is not new ^[13], it has only recently gained momentum, especially in such controversial fields of innovation as nanotechnology and geo-engineering ^[6], and especially since the European Union (EU) mainstreamed the term in programmes such as "Horizon 2020" or "FP7". In addition to visibility, responsible research and innovation also has the potential to bring this discourse to bear in the early stages of technology development ^[9], which evokes a shared duty to reflect on such criteria as anticipation and reflexivity in order to design products and generate policies that can offer a response to the responsible challenges ^[14]. In order to make this possible, various actors, such as researchers, funders, policy makers, and enterprises, must be aligned in the same direction.

On the other hand, understanding the implications of responsible innovation in industry, especially regarding SMEs, which constitute 95% of all enterprises in the world ^[15], and their impact represents approximately 64% of pollution and waste in Europe ^[16], is still novel, and it remains to be understood how RI can be applied by companies ^[17] and how it relates to business performance ^[9]. The authors, therefore, suggest that more attention needs to be paid to SME activities ^{[18][19]} because their propensity to adopt responsible innovations could have an equally positive and significant impact ^{[20][21][22]}. Although this last argument is in line with corporate social responsibility (CSR), sustainable innovation (SI), and similar terms to CSR in SMEs ^[23], it also demands companies to take a step further with a responsible innovation approach that is a transparent and interactive process ^[10]. Moreover, RI is more specific and refers to mutual responsibility and the early inclusion of different actors in the innovation process. Therefore, it seems that CSR, besides being adopted due to its sustainability-oriented framework, reinforces the potential to promote responsible innovation within firms ^{[9][24]}. Therefore, this research aims, based on literature review and bibliometric analysis, to develop a conceptual model that could allow us to explain the drivers of RI in SMEs, its effect on firm performance, and the contingent variables which moderate this relationship.

References

1. Jones, J.; De Zubieli, G.C. Doing well by doing good: A study of university-industry interactions, innovationness and firm performance in sustainability-oriented Australian SMEs. *Technol. Forecast. Soc. Chang.* 2017, 123, 262–270.
2. Kraus, S.; Burtscher, J.; Niemand, T.; Roig-Tierno, N.; Syrjä, P.; Kraus, S.; Burtscher, J.; Niemand, T.; Roig-Tierno, N.; Syrjä, P. Configurational paths to social performance in SMEs: The interplay of innovation, sustainability, resources and achievement motivation. *Sustainability* 2017, 9, 1828.
3. Porter, M.E. Technology and competitive advantage. *J. Bus. Strategy* 1985, 5, 60–78.
4. Von Schomberg, R. A vision of responsible research and innovation. In *Responsible Innovation: Managing the Responsible Emergence of Science and Innovation in Society*; Wiley: Hoboken, NJ, USA, 2013; pp. 51–74.
5. Ribeiro, B.; Bengtsson, L.; Benneworth, P.S.; Bühner, S.; Castro-Martínez, E.; Hansen, M.; Jarrai, K.; Lindner, R.; Olmos-Peñuela, J.; Ott, C.; et al. Introducing the dilemma of societal alignment for inclusive and responsible research and innovation. *J. Responsible Innov.* 2018, 5, 316–331.
6. Auer, A.; Jarrai, K. Implementing responsible research and innovation practices in SMEs: Insights into drivers and barriers from the Austrian medical device sector. *Sustainability* 2017, 10, 17.
7. Martinuzzi, A.; Blok, V.; Brem, A.; Stahl, B.C.; Schönherr, N. Responsible research and innovation in industry—Challenges, insights and perspectives. *Sustainability* 2018, 10, 702.
8. Visser, W. The age of responsibility: CSR 2.0 and the New DNA of Business. *J. Bus. Syst. Gov. Ethics* 2010, 5, 7.
9. Van De Poel, I.; Asveld, L.; Flipse, S.M.; Klaassen, P.; Scholten, V.E.; Yaghmaei, E. Company strategies for responsible research and innovation (rri): A conceptual model. *Sustainability* 2017, 9, 2045.

10. Ribeiro, B.E.; Smith, R.D.J.; Millar, K. A Mobilising Concept? Unpacking Academic Representations of Responsible Research and Innovation. *Sci. Eng. Ethics* 2017, 23, 81–103.
11. Pandza, K.; Ellwood, P. Strategic and ethical foundations for responsible innovation. *Res. Policy* 2013, 42, 1112–1125.
12. European Commission. Rome Declaration on Responsible Research and Innovation in Europe; European Commission: Brussels, Belgium, 2014.
13. Burget, M.; Bardone, E.; Pedaste, M. Definitions and Conceptual Dimensions of Responsible Research and Innovation: A Literature Review. *Sci. Eng. Ethics* 2017, 23, 1–19. [PubMed]
14. Stilgoe, J.; Owen, R.; Macnaghten, P. Developing a framework for responsible innovation. *Res. Policy* 2013, 42, 1568–1580.
15. Khan, S.Z.; Yang, Q.; Khan, N.U.; Kherbach, S.; Huemann, M. Sustainable social responsibility toward multiple stakeholders as a trump card for small and medium-sized enterprise performance (evidence from China). *Corp. Soc. Responsib. Environ. Manag.* 2020, 27, 95–108.
16. Miller, K.; Neubauer, A.; Varma, A.; Williams, E. First Assessment of the Environmental Compliance Assistance Programme for SMEs (ECAP); Report Prepared for the European Commission, DG Environment and Climate Action; European Commission: Brussels, Belgium, 2011.
17. Lubberink, R.; Blok, V.; Van Ophem, J.; Omta, O. Lessons for responsible innovation in the business context: A systematic literature review of responsible, social and sustainable innovation practices. *Sustainability* 2017, 9, 721.
18. Hamann, E.-M.; Habisch, A.; Pechlaner, H. Values that create value: Socially responsible business practices in SMEs —Empirical evidence from German companies. *Bus. Ethics Eur. Rev.* 2009, 18, 37–51.
19. Klewitz, J.; Hansen, E.G. Sustainability-oriented innovation of SMEs: A systematic review. *J. Clean. Prod.* 2014, 65, 57–75.
20. Aragón-Correa, J.A.; Hurtado-Torres, N.; Sharma, S.; García-Morales, V.J. Environmental strategy and performance in small firms: A resource-based perspective. *J. Environ. Manag.* 2008, 86, 88–103.
21. Bos-Brouwers, H.E.J. Corporate sustainability and innovation in SMEs: Evidence of themes and activities in practice. *Bus. Strat. Environ.* 2010, 19, 417–435.
22. Cassells, S.; Lewis, K.V. SMEs and environmental responsibility: Do actions reflect attitudes? *Corp. Soc. Responsib. Environ. Manag.* 2011, 18, 186–199.
23. Avram, D.O.; Domnănovich, J.; Kronenberg, C.; Scholz, M. Exploring the integration of corporate social responsibility into the strategies of small- and medium-sized enterprises: A systematic literature review. *J. Clean. Prod.* 2018, 201, 254–271.
24. Valdivia, W.D.; Guston, D.H. Responsible Innovation: A Primer for Policymakers; The Brookings Institute: Washington, DC, USA, 2015.

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