

Examination of Contingency Factors in Circular Business Model Implementation in Manufacturing Industry -A Systematic Literature Review

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Abstract

The implementation of circular business model (CBM) in the manufacturing industry is affected by operating context (contingency factor) such as sectors and their respective demography and company size. Due to limited research on implementation in specific operating contexts, companies often draw insights from other contexts thus missing its full potential. This issue is responsible for the low adoption rate of CBM as well as the decrease in the global circularity rate. To address this problem, the researchers using contingency theory and Theory-Context-Characteristics-Methods (TCCM) framework aim to examine the operating context explored in existing studies and the characteristics addressed (research areas and business model archetypes). By employing the Scientific Procedures and Rationales for Systematic Literature Reviews protocol, the study conducted a content analysis on 42 peer-reviewed articles. The findings identified the demographics and company sizes explored in sectors such as electrical and electronic, automotive, fashion and textile, and others. Additionally, research areas such as capabilities, barriers, risk factors, digital technologies along with business model archetypes such as product-service systems, product life extension, and gap exploiter that were explored in these operating contexts were identified.

Keywords

Circular economy, business model, Contingency theory, Implementation, and United Nations Sustainability Development

Biographies

Richard Asante is a PhD candidate in the School of Engineering at Atlantic Technological University, Galway, and part of the Operations and Supply ChAin Research (OSCAR) program. His research interest focuses on business model innovation, circular economy, and supply chain management. He holds an MSc. Civil Engineering from Fujian University of Technology, and a BSc. Construction Technology and Management from Kwame Nkrumah University of Science and Technology. He has published research articles in international journals and has served as a reviewer for both academic journals and conferences. He also has years of experience in both the public and private sectors of the built environment.

Aurora Dimache is a Senior Lecturer in the School of Engineering at Atlantic Technological University (ATU) Galway with over 15 years of experience in teaching and research. Her research interests lie in the area of sustainability, circularity and life cycle assessment, as well as quality management and Lean Six Sigma. Aurora has worked on European projects, supervised postgraduate students (Master and PhD), published academic papers and presented at conferences, and has served as a reviewer for various journals and conferences. She obtained a Bachelor's degree in Mechanical Engineering from the University Politehnica Bucharest and a Bachelor's degree in Business from the Academy of Business Studies Bucharest. Later, Aurora completed her Master's and PhD in Engineering from ATU Galway (former GMIT) and a Master in Teaching and Learning from ATU Galway.

Vicky O'Rourke is a Senior Lecturer for Research Development at the Faculty of Business, Atlantic Technological University, Donegal. She is joint Course Director for a unique cross border Executive Education Masters programme, delivered jointly by Atlantic Technological University and Ulster University: the MSc in Leadership and Innovation in the Public Sector. Vicky received her Doctorate in Education from Queen's University, Belfast and she also holds a Masters by Research from the Higher Education and Training Awards Council. Vicky is a qualified Action Learning Set Facilitator, learning by doing and critical reflection underpin her approaches to education. Vicky is passionate about bridging the gap between research and real-world applications. She has authored academic papers, presented at academic conferences, and worked on various funded research projects. Recently, her research activities focus on innovation management, sustainability management, and consumer literacies. Vicky acts as a research supervisor on a number of Masters and PhD programmes. From time to time, Vicky provides consultancy services to the private, public and third sector.

Graham Heaslip is Professor of Logistics and Head of the School of Engineering at Atlantic Technological University, Galway, Ireland. He is a board member of the Humanitarian Logistics and Supply Chain Research Institute (HUMLOG) at Hanken School of Economics, Helsinki, Finland. He is also a member of the editorial boards of the Journal of Humanitarian Logistics and Supply Chain Management, and the International Journal of Physical Distribution and Logistics Management. His work in the field of logistics and supply chain management has received international recognition, including the Emerald Literati Network Awards for Excellence.

George Onofrei is a Senior Lecturer in Operations and Supply Chain Management at Atlantic Technological University, Ireland. He completed his PhD in Operations and Supply Chain Management at UCD Smurfit Graduate Business School, Ireland. His research interests encompass supply chain practices, sustainability, digitalisation, and behavioral operations across both manufacturing and service industries. He is the Head of the OSCAR (Operations and Supply ChAin Research) Center and is actively involved in international research projects. George has served on the Board of the European Operations Management Association (EurOMA) and as Vice President of the Global Manufacturing Research Group (GMRG). His work has been widely published in leading academic journals, and he has received several national and international awards.