
Editorial

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Biographical notes: Benny Tjahjono is a Professor of Supply Chain Management and is Leader of the Sustainable Production and Consumption Cluster at Centre for Business in Society (CBiS), Coventry University. He has a vested interest in sustainability and environmental conservation. Over the last five years, he has focused his overarching research area on sustainable operations and supply chain management, in particular, the exploration of the circular economy principles in manufacturing processes. He proposes an environmentally-conscious manufacturing systems design method as an innovative way to achieve the triple bottom line objectives; 'doing good for people, planet and profit'. He was one of a Principal Investigators of a consortium consisting of seven universities in Europe being awarded the Horizon2020 MSCA Innovative Training Network aiming to formulate the service-oriented business for the European circular economy. He is an Associate Editor of the *Journal of Simulation* and is member of several journal editorial boards.

Hendrik Reefke has held academic positions in the UK, Germany and New Zealand. He lectures across a variety of topics in supply chain management and is the Deputy Director for the MSc in Logistics and Supply Chain Management at School of Management, Cranfield University, UK. His research has been published in internationally leading academic journals, refereed conferences and books. Prior to this, he worked in the automotive sector with roles in engineering and procurement and in project management. He is known for his capability in warehousing, a specialised area characterised by complexities regarding design, equipment, operations and managerial

implications. He leads programs in the areas of humanitarian logistics, sustainability and operations management. He conducted various consulting and research projects, including sustainable transport in the UK, health supply chain transformations in developing countries, supply chain trends, and the effects of Brexit on supply chain locations.

Nyoman Pujawan is a Professor of Supply Chain Engineering at the Department of Industrial Engineering, Institut Teknologi Sepuluh Nopember (ITS), Surabaya, Indonesia. He is a Certified Supply Chain Professional (CSCP) holder from the APICS, USA. He was a Lecturer in Operations Management in the Manchester Business School, UK. He has published over 40 articles in various international journals including the *European Journal of Operational Research*, *International Journal of Production Research*, *International Journal of Production Economics*, *International Journal of Physical Distribution and Logistics Management*, *Production Planning and Control*, *International Journal of Logistics: Research and Applications*, *Asian Journal of Shipping and Logistics*, *Business Process Management Journal*, among others. He is a board of executive member of the Asia Pacific Industrial Engineering and Management Systems Society (APIEMS).

Businesses across the globe are recognising the importance of integrating sustainability into business practices and further exploring the notion of circular economy (CE) (EMF, 2013) in support of sustainable development. Supply chain management practice and research must therefore respond to sustainability requirements as the pursuit of social, economic and environmental objectives – the triple bottom line – within internal operations (Bernon et al., 2018) and operational linkages spreads beyond the firm to include supply chains and communities.

As product life-cycles shorten, many businesses are acknowledging that sustainable development is essential for increasing quality and profitability. Organisations have been under constant pressure to reduce negative impacts across their supply chains (Reefke and Sundaram, 2017) while cutting costs to remain competitive (Gan et al., 2019). Decision support is required in the form of practical guidelines and prescriptive frameworks (Reefke and Sundaram, 2018). The aim of this special issue is therefore to present novel developments and emerging research issues in the field of sustainable supply chains and CE.

The contributions of this special issue were solicited from a combination of a call for paper to the participants of the 8th Operations and Supply Chain Conference (OSCM) held at Cranfield University in September 2018, and an open call to other researchers in the area of operations and supply chain management. All of the papers have undergone a double-blind review process by expert reviewers.

The first paper in this special issue by Takhar and Liyanage reviews the literature and discusses how Industry 4.0 technologies may impact on sustainability and CE. They identify gaps in literature and point to data reporting requirements that need to be met by the Industry 4.0 technologies. The work in Industry 4.0 continues with the contributions from Ojo, Shah and Coutroubis who look for the interconnection between Industry 4.0 and sustainable practices within the food manufacturing supply chain. Using a qualitative research approach, they investigate the extent to which innovative strategies and incorporation of Industry 4.0 have been taken up by selected food manufacturers.

Nasution, Aula and Ardiantono demonstrate the design of circular business model, using a case of the dairy industry in Indonesia. The application of the business model canvas (BMC) allows the calculation of potential revenue streams with respect to the achievement of CE and sustainable development goals (SDGs). Remanufacturing is another example of such a CE business model aiming at extending the product life-cycle. Using an example of mobile phones, Wahjudi, Gan, Tanoto and Winata extract the barriers and drivers of consumer intention to purchase remanufactured products, which include quality, warranty, regulatory, trend and obsolescence concerns. Moving onto the service sector, Julião, Gaspar and Alemão investigate consumers' perceptions of CE in hospitality industry. They surveyed hotel guests to extract their attitude towards CE and 'green' practices. The outcomes show that sustainability has indeed influenced their hotel selection.

Within the manufacturing sector, sustainability has become an important driver towards operational excellence. Companies that adopt this strategy clearly pursue efficiency in their operations, and Silva and Azevedo argue that reducing variability in the production process will contribute towards achieving a sustainable business. When coupled with green purchasing practices, manufacturing companies may achieve additional sustainability targets. Mohamad and Koilpillai further tested this hypothesis by conducting a survey of manufacturing companies in Malaysia, and they conclude that the adoption of sustainable development strategies by the companies under study has positively impacted their triple bottom line sustainability.

In the area of logistics and transportation, the paper of Ezenwa, Whiteing, Johnson and Oledinma explains how information and communication technology (ICT) diffusion influences sustainability, using evidence from a study of Nigerian third party logistics providers. They conclude that institutional forces have been highlighted as critical factors affecting ICT diffusion of Nigeria's logistics and transport businesses. Another example of 'green' logistics is provided by the study of Gunaratne and Jayaratne which identifies the contributing factors for waste reduction and improved sustainable performance of the food supply chain in Sri Lanka.

The special issue concludes with the paper by Tsolakis, Zissis and Srari which proposes circular supply chain archetypes for the valorisation of solid waste. Using the network configuration theory, they describe how the archetypes can be differentiated by their levels of geographic dispersion, each of which represents supply network characteristics for the valorisation of the waste streams.

We hope that the papers selected in this Special Issue contribute to the body of knowledge and serve as a medium of scientific discourse amongst researchers in the area of sustainable supply chains and CE.

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