

# Chapter 2

# Circular Economy Practices in Supply Chain Management

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## **ABSTRACT**

*In recent years, the concept of a circular economy has gained significant traction as a sustainable approach to resource management and economic development. Unlike the traditional linear model of take-make-dispose, a circular economy aims to minimize waste generation and maximize resource efficiency by promoting product reuse, recycling, and regeneration. This paradigm shift has profound implications for supply chain management, where organizations play a pivotal role in shaping the transition towards more sustainable practices. Despite the growing interest in circular economy concepts, the integration of these principles into supply chain management remains a complex and evolving challenge. Organizations, especially in the construction industry, face various barriers, including technological limitations, regulatory constraints, and cultural inertia. This chapter interrogates the nexus between circular economy practices in supply chain management from a*

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## **1. INTRODUCTION**

The construction industry plays a pivotal role in global economic development, but it is also recognized as one of the most resource-intensive sectors, generating significant waste and carbon emissions with massive environmental impact (Ofori, 2000; Azapagic et al., 2019). In response to growing sustainability concerns, there is increasing interest in applying circular economy to transform traditional construction practices towards more sustainable and resource-efficient approaches (Mujtaba et al., 2020). Circular economy offers a promising framework to address these challenges by promoting the reuse, recycling, and repurposing of materials throughout the construction supply chain (Crosbie et al., 2021). Supply chain management (SCM) in construction involves complex networks of stakeholders, including contractors, suppliers, manufacturers, and waste management providers, collaborating to deliver construction projects (Tatari & Kucukvar, 2018). Circular economy practices offer innovative solutions to optimize material flows, minimize resource depletion, and mitigate environmental impacts throughout the construction supply chain where materials are continuously circulated and retained in productive use (Azapagic et al., 2019; Singh et al., 2019). By adopting circular strategies, such as design for disassembly, material recovery, and remanufacturing, construction companies can achieve operational efficiency while reducing their ecological footprint (Geng et al., 2017).

Despite the potential benefits of circular economy practices in construction supply chains, implementation challenges persist. Technical barriers, lack of awareness, regulatory constraints, and fragmented value chains often hinder the adoption of circular economy (Mujtaba et al., 2020). Moreover, the construction industry's unique characteristics, such as project-based nature and diverse stakeholder interests, necessitate tailored approaches to effectively integrate circularity into supply chain operations (Crosbie et al., 2021). This literature review aims to critically examine the application of circular economy practices in supply chain management within the construction industry. By synthesizing existing research and case studies, this study seeks to identify key trends, challenges, and opportunities associated with implementing circular strategies in construction supply chains. The findings from this review will contribute to a deeper understanding of how circular economy principles can be leveraged to promote sustainability, resilience, and innovation in the construction sector.

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