Circular economy model for integrated for recoverable waste integrated management, case study: Municipality of Puebla

Mariana Negrete Cardoso,
Universidad Popular Autónoma
del Estado de Puebla
mariana.negrete@upaep.edu.mx

Abstract

Circular economy (CE) emerges to reduce environmental pressure and move towards responsible production and consumption patterns. A descriptive research was performed; and bibliometric techniques were used to gather existing knowledge in CE and waste management (2007 – 2020). Results indicate that annual scientific production increased 94% in the last five years; highlighting the countries of Italy, Spain, and United Kingdom; where emerging research trends evolved from processes and industry oriented approach (2017), to waste management, recycling and circular economy (2019), towards sustainable development (2020). However, additional strategies of those of materials preservation are needed. A second bibliometric analysis was performed to identified best practices and innovative approaches for recoverable solid waste management. Literature highlights that effective waste management strategies depend on local waste characteristics (cultural, climatic, socioeconomic, institutional capacity); integration of informal waste sector; global coordination; increasing reuse rates, accelerating innovation in value chains; as well as a bio-based circular economy approach where waste and organic residues supply chemicals, nutrients and fuels. Variables identified through literature review will make up the model that promote a resilient recoverable waste management system, efficient, inclusive and sustainable, that can be replicated globally, as a key alternative for green recovery towards a post COVID era.

Keywords
Circular economy; Recoverable; Waste management; Strategy; COVID-19 pandemic