Circular Procurement Roadmap Development for Construction Industry: Developing Nation Context

Vidyasagar Gembali[a]; Aalok Kumar[b]; PRS Sarma[c]

[a] PhD Student, Production and Operations Management area, Indian Institute of Management Visakhapatnam 530003 India

[b] Assistant Professor, Production and Operations Management area, Indian Institute of Management Visakhapatnam 530003 India

[c] Associate Professor, Production and Operations Management area, Indian Institute of Management Visakhapatnam 530003 India

Abstract

Many studies developed strategies for circularity implementation in the construction and building industry (CBI) by prioritising and analysing circular economy (CE) barriers or enablers or both barriers and enablers of CE for CBI. This study developed strategies for circularity implementation in construction procurement with priority information obtained for enablers, barriers, practices, and outcomes (EBPOs) of circular construction procurement (CCP) using the fuzzy best worst method (FBWM). This is a novel approach to analysing EBPOs, i.e., all four EBPOs are considered together. From past literature collected CCP EBPOs. Important observations made from collected EBPOs are that EBPOs are interconnected and influenced by each other. Enablers and barriers of CCP, influencing practices of CCP undertaken by organisations to employ circularity in construction procurement. These employed practices and functions are forces to deploy circularity outcomes. A three-step methodology is used to incorporate priority information on EBPOs. 1. Using the fuzzy Delphi method, shortlisted the potential *thirty-three* EBPOs from the collected total of *sixty-nine* EBPOs from the literature. 2. Using FBWM, developed priority information of EBPOs. Based on FBWM's priority information, considered top important EBPOs and considered for 3ʳᵈ step of methodology, i.e., SWOT/TOWS analysis and in this step, developed strategies for CCP implementation. All CCP EBPOs analysed in this study are connected to circularity opportunities to construction organisations in proximity and with a definitive impact from a circularity perspective, such as eco-innovation, brand value, Industrial symbiosis, circular expertise, etc. This work is helpful for both academicians and industry practitioners in making CCP decisions and for preparing policies for circularity implementation through CCP.

Keywords

Circular construction procurement (CCP); construction and building industry (CBI); enablers, barriers, practices, and outcomes (EBPO); fuzzy Delphi method (FDM); fuzzy best-worst method (FBWM); SWOT/TWOS analysis