Modelling of Challenges towards Achieving Sustainability: A Case of Indian Food Processing Industry

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ABSTRACT

The food processing industry has a significant impact on the socioeconomic development of a nation. The total output of Indian food processing may touch $535 billion by 2025-2026. About 1.77 million people are employed in the Indian food industry (IBEF, 2022). However, the food processing industry in India is facing numerous challenges, including a lack of food quality, inadequate supply chain infrastructure, food waste, greenhouse gas emissions, and so on (Kumar et al., 2020; Sharma et al., 2019). These challenges are interrelated with each other and pose a significant threat to sustainability. Considering this background, this study aims to identify and analyse the interrelationships among the challenges associated with sustainability in the Indian food processing industry and then to prioritise those challenges. Additionally, this study also classifies those challenges based on driving and dependence power. The authors identified eleven challenges associated with sustainability in the Indian food processing industry with the help of a literature review. Then based on expert opinion, the interpretive structural modelling (ISM) was employed to determine the interrelationships among the challenges, and finally, a prioritisation order for those challenges was established. ISM is a methodology for identifying the interrelationships and modelling the challenges, especially while dealing with complex issues (Attri et al., 2013). Further, Matrices d'Impacts Croises Multiplication Appliqué a un Classement (Cross-impact matrix multiplication applied to classification) (MICMAC) analysis was also carried out to categorise the challenges according to the driving and dependence power.

Keywords: Food Processing Industry; Sustainable Challenges; Sustainability; Interpretive Structural Modelling; MICMAC Analysis.