

Addressing Food Waste through Innovative Industrial Management and Technological Solutions

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Abstract

This study investigates cutting-edge industrial management methods and technical interventions for minimizing food wastage. Amid rising global concerns, both internal and external, particularly regarding pollution caused by food waste, this study reviews twenty selected journals that examine contributions of key technologies like AI-enabled solutions, smart refrigerators, waste-to-energy conversion systems, and tracking mechanisms ways of minimizing wastage in diverse sectors. The paper demonstrates an increasing focus on combining management approaches with technology, particularly in Europe and Asia, from which most articles originate. The main findings show that although automated waste quantification and data-driven waste management systems are promising technologies, obstacles including high implementation costs, public opposition, and challenges in integrating new and old technologies continue to prevent their widespread adoption. To effectively reduce food wastage, a holistic approach is required, collaboration among stakeholders, the creation of favorable regulatory frameworks, and continuous improvements in waste management practices. The study concludes by suggesting that public awareness campaigns should be enhanced, research and development investments should be increased, and industries encouraged to collaborate to overcome existing barriers. It also recommends that waste management solution should be driven by specific technological innovations and supported by policies aimed at promoting sustainability. Ultimately, this research demonstrates that merging technological innovation with efficient management techniques is crucial for tackling the problem of food wastage and ensuring a sustainable future.

Keywords

Food Waste Reduction, Technological Innovations, Industrial Management, Sustainability.

