

Waste 4.0: Optimising sustainability of waste management using digitalisation for developing countries

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Optimising waste management is one of the key areas in sustainable development to protect public health and the environment. However, most countries are yet to achieve sustainable waste management due to increasing waste generation, limited landfill space, resource depletion, cost of recycling, public buy-in, etc.

These challenges have resulted in poor waste management and environmental pollution – producing toxic gases, radiation, and pest breeding. To overcome these issues, developed countries have introduced digitalisation to optimise waste management's sustainability.

While there are still a few challenges, digitalisation has significantly optimised waste management by increasing the reuse and recycling rate, reducing overall costs, and improving management efficiency.

This development brings to this paper's central question: To what extent can digitalisation optimise waste management sustainability in developing countries? Since these countries face different structural and socio-cultural challenges, this paper will use systematic literature review analysis to identify selected waste management digitalisation models and critically study the compatibility of these models in developing countries. This paper will also propose critical measures needed to improvise the digitalisation model of waste management for developing countries to ensure the sustainability of the model.

References

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