Waste Management and the Circular Economy in South African Municipalities,

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Abstract

This study examines waste management practices in South African municipalities over a decade, focusing on their alignment with circular economy principles. A comparative analysis of waste management policies across ten randomly selected municipalities in South Africa was conducted, utilising a mixed-method approach including qualitative interviews and quantitative data from municipal reports. Waste diversion rates varied significantly among municipalities, with the highest recorded at 45% and lowest at 12%, indicating substantial room for improvement within this sector. The circular economy concept has been adopted by some municipalities but faces challenges in implementation due to resource constraints and policy inconsistencies. Municipalities should prioritise waste reduction strategies, increase investment in recycling infrastructure, and harmonize policies with national circular economy goals. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African Geography, Circular Economy, Waste Management, Resource Recovery, Sustainable Development, Geographic Information Systems, Community Engagement*

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