Lahore's IoT-and-AI Waste Route Optimisation — 32% Route Efficiency Gain Across 10 Pilot Sites

AI in the Public Sector · Good practice · Pakistan

Quality score: 80/100

Evidence strength: Quasi-experimental

Summary

A peer-reviewed pilot across 10 sites in Lahore, Pakistan, combined ultrasonic bin-fill sensors with cloud-based AI route optimisation, processing over 200 million data points and delivering a 32% improvement in collection-route efficiency, a 29% cut in fuel use, a 33% rise in wa

Key dimensions

Dimension	Score
Evidence of impact / measured public value	3/3
Transparency, fairness & accountability	3/3
Transferability / demonstrated replication	3/3
Scalability beyond pilot	2/3
Governance, capability & sustainability	1/3

Evaluated by C-NAPSE

Data sources

C-NAPSE web research — accessed 2026-08-16

Lahore municipal solid waste authorities (research pilot with local government collaboration) — accessed 2026-08-16

PLOS ONE journal article — accessed 2026-08-16

PMC (PubMed Central) archived copy — accessed 2026-08-16

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