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WASTING TIME: AI, CONSTRUCTION WASTE AND THE PROBLEM OF ESTIMATION

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Abstract

This manuscript reports on the problem of construction waste, specifically difficulties with accurate estimation. The purpose is to understand why quantifying construction waste is problematic, as well as how and where it can be improved. The methodology includes an expansive literature review as well as periodic industry workshops to share data and validate interim findings and decisions. Findings reveal current techniques for waste reduction are largely confined to construction sites. The geographical and methodological diffusion of these sites makes aggregation and accurate estimation problematic. It points to landfill and transfer stations as a key point of convergence to improve observation and estimation. However, the quantity of waste at these locations makes detailed quantification difficult. An initial pilot study uses artificial intelligence to categorise and quantify large volumes of waste. While it does not prove a panacea, outcomes show promising preliminary results for automatically categorising and quantifying waste without manual intervention. The research adds to the body of knowledge by highlighting the potential of AI tools to positively impact and enhance waste estimation by incorporating more granular and automated methodological approaches.

Key words: artificial intelligence, construction, estimation, waste

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