

Science for Environment Policy

Curate your waste: improving the efficiency of waste recovery

Sustainable urban waste management has progressed over recent decades, with recycling of waste becoming a routine activity across the EU. However, the increasing volume and complexity of waste poses ongoing challenges for policymakers and municipal administrators. New research suggests that a rethink around how household waste is sorted could lead to more resources being recovered from solid waste.

In light of increasing waste recovery targets across the EU, it is in the interests of local authorities to expedite [waste](#) management systems and thereby improve the recovery of recyclable resources. Against this context, a recent study investigated the performance of waste sorting infrastructure in two buildings, housing 92 apartments, in Gothenburg, Sweden. The study's aims were twofold: to identify problems associated with apartment-based waste sorting; and to propose ways in which housing companies might improve existing systems to enable tenants to sort waste more effectively. The buildings were selected due to their location in a district known to have problems engaging residents in waste separation.

Tenants in such buildings typically recycle their waste in containers within designated garbage disposal rooms, and are provided with guidelines relating to the containers in which specific types of waste should be placed. Over the course of the study, the tenants' waste handling methods were evaluated in four ways: the weight of discarded material (both mixed and biodegradable waste), the composition of the waste, observations of the tenants' behaviours, and a user survey.

The researchers identified a gap between what the system offers — the way in which different types of waste were categorised, and users' needs — how users logically grouped waste materials. For instance, while the sorting containers differentiated between packaging and non-packaging waste, users had a tendency to categorise simply by material.

This led to common sorting errors. Significantly, the study found that over 70% of material discarded by users as mixed waste could have been sorted out into other available fractions. Biodegradable waste was the most neglected (it comprised over 40% of mixed waste). Hazardous waste was also often wrongly discarded. From this, the researchers recommend that discrepancies between user perspectives and the predefined waste categories be resolved.

The study identifies housing companies as a link between tenants and the waste collection system, and highlights how they are well-positioned to play a significant role in improving waste separation operations. The researchers propose that companies evaluate how users interact with the system, and identify design gaps and physical constraints, such as lack of sufficient space in which to sort or discard material. This could lead to practical changes, such as providing more space for biodegradable waste disposal, or offering the possibility of sorting textiles.

Moreover, there is greater scope for housing companies to engage with tenants through participatory activities. Such activities would enable tenants to share their experiences of the system and develop recommendations, while housing companies could communicate their goals and expectations to tenants. Housing companies could also improve instructions for tenants and channel resources into engagement campaigns, where residents can make their needs and preferences known while learning how to more efficiently separate their waste.

Given that housing companies are responsible for the management of far greater volumes of recoverable waste than those of individual households, there is huge potential for them to make a notable contribution towards a more sustainable economy.



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Contact:
isabel.ordonez@chalmers.se

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