

Science for Environment Policy

What affects household waste separation rates? Regional, cultural, institutional and economic influences examined

Insights from a recent Italian study could help local authorities across Europe improve their rates of separate waste collection for recycling. The researchers found higher rates of separate waste collection in municipalities with high-quality governmental institutions for waste collection, non-mountainous terrain and higher income levels. Separating household waste into streams, such as glass or food, for re-use and recycling helps free up resources for a circular economy. Good-quality institutions are the main driver of separate waste collection and can overcome barriers such as low economic prosperity.

Separate collection of waste, specifically paper, metal, plastic, glass and kitchen waste, as required by EU legislation, is a major factor in facilitating recycling. The EU's 2008 Waste Framework Directive¹ sets a per-household target for Member States of 50% (by weight) of waste preparation for re-use and recycling, to be met by 2020.

Italy has a relatively high separate waste-collection rate of 52% (2016 figures²). However, rates vary considerably across the country, with some municipalities separating much higher levels of household waste than this, and some much lower. In general, rates are much higher in the north of Italy than in the south, where various administrative, political and social factors, including interference by criminal organisations, hinder separate waste collection. However, there are notable exceptions to this rule in both regions.

This study explored reasons for the different separate waste-collection rates. The researchers categorised around 8 000 municipalities across Italy (covering 90% of all municipalities) according to five factors:

- **Region.** Municipalities were classified into five regions: north-east, north-west, centre, south, and islands.
- **Terrain.** This considers whether the municipality's landscape is totally mountainous, partly mountainous or flat. Mountains make it more challenging, and expensive, for refuse vehicles to access homes.
- **Economic prosperity.** In general, wealthier municipalities devote more resources to environmental protection. This study defined prosperity in terms of GDP per capita.
- **Institutional quality.** This refers to the quality of local-governmental institutions in terms of five dimensions: voice and accountability, government effectiveness, regulatory quality, rule of law and corruption. The study scored municipalities using an index for institutional quality, which is based upon data gathered from institutional sources, research institutes and professional registers. Each dimension is evaluated according to several factors; for instance, voice and accountability captures participation in public elections and the number of social cooperatives, among other factors³.
- **Consumption patterns.** The researchers used an indicator to assess whether cultural consumption in each municipality is more 'elite' or 'mass'. *Elite cultural consumption*, such as theatre and museum attendance, is associated with higher social awareness and altruism. *Mass cultural consumption*, such as pop music concert and cinema attendance, is associated with more materialistic values. People with altruistic values are more likely to be motivated to act pro-environmentally, whereas people with materialistic values are more motivated by external factors, such as penalties or rewards.

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1. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098>

2. Italian National Institute of Statistics (ISTAT), 2018, *Raccolta Differenziata dei Rifiuti: Comportamenti e Soddisfazione dei Cittadini e Politiche nelle Città* – (Waste Separation Collection: Behaviour and Citizens' Satisfaction and Politics in the Cities)

3. Further information on the Institutional Quality Index (IQI) can be found in: Nifo & Vecchione (2014) Do Institutions Play a Role in Skilled Migration? The Case of Italy, *Regional Studies*, 48:10, 1628–1649, DOI: [10.1080/00343404.2013.835799](https://doi.org/10.1080/00343404.2013.835799)

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Using these categories, the researchers identified 14 groups of municipalities. These groups have similar characteristics and separate waste-collection rates.

Among northern regions, the terrain has a significant impact on separate waste-collection rates, with lower rates in mountainous areas. High institutional quality is linked to higher-than-average collection rates for both flat and mountainous areas, however. Elite cultural consumption patterns have a bigger influence in northern areas with intermediate scores for institutional quality.

In southern regions, institutional quality is more likely to be low; there is a low degree of transparency and social trust in waste-management operations. Sardinia represents an important exception, in that it has more effective institutions and high separate waste-collection rates. Its success is partly due to its waste-management plan, which sees door-to-door collection and monetary rewards and penalties for local authorities.

In both north and south, wealthier municipalities tended to perform better. However, it is possible to counter poor economic conditions through well-designed policy bundles and cultural factors. For instance, most municipalities in the relatively poor southern region of Campania enjoy excellent rates of 61.68%. This is the result of local authorities developing an easy collection system and encouraging pro-environmental behaviour among citizens.

Overall, the results highlight that institutional quality is the main driver of separate waste-collection rates, but that other factors play a role. The researchers suggest that their framework can be used in other EU Member States to gain a broader understanding of how local characteristics affect waste-collection rates.

