SEPT 2024

Improving Office Recycling Rates

As part of a corporate initiative to explore the use of behavioral science across the Organization, the Office of Innovation (OIN) of the Food and Agriculture Organization of the United Nations (FAO) engaged ideas42 in a number of pilots to enable staff to apply ideas42's behavioral design methodology to solve problems in new ways. In this pilot, FAO sought to improve recycling rates of everyday items at FAO's Rome headquarters. An online test of redesigned waste bin signage found a 78 percent increase in correctly sorted items in the office.

The Challenge

Recycling is critical for resource efficiency, but many struggle to make it a habit. Complex sorting guidelines and mixed materials lead to frequent instances of sorting items wrong. Nearly all high-income municipalities offer recycling programs to divert waste from landfills and help conserve natural resources. People generally intend to allocate reusable materials to the correct recycling stream. However, recycling guidelines can be complex (and vary across locations), creating a need to make many sorting decisions in the moment.

Partnering with OIN, we engaged a diverse team from FAO's Logistics Services Division (CSL) to help improve waste diversion rates at FAO's Rome headquarters. We conducted a "waste audit" to better understand waste sorting rates and identify common pitfalls in the office environment. In FAO's offices, roughly 50% of waste items were improperly sorted. The most commonly missorted items included: takeout food containers, disposable cutlery and coffee cups, food wrappers, glass bottles, brown cardboard, receipts, and used tissues and napkins.

Highlights

- *Recycling is critical for resource efficiency, but many, especially those in office settings, struggle to make it a habit.*
- *We partnered with a diverse team at the United Nations to help improve waste diversion rates at the UN Food and Agriculture Organization (FAO) Rome headquarters.*
- *Results show that salient, behaviorally informed signage can significantly improve waste sorting behaviors.*

Understanding the root of missorting to reduce it

We conducted in-depth interviews with a small sample of FAO's Rome staff. Generally, staff were highly motivated to recycle and strongly supported FAO's embrace of environmental stewardship. However, staff found it challenging to identify where certain items should be placed and were not confident in the accuracy of their sorting. Furthermore, these decisions were made in a hurry.

Compounding these self-reported recycling challenges were limitations in the existing recycling infrastructure, as well as new conventions for what should be recycled. Many waste stations had an incomplete set of recycling bins. Information on how to recycle properly was not easily visible or accessible. In addition, the recent proliferation of compostable packaging (which often looks identical to conventional non-recyclable packaging) and changing guidelines around what materials can be recycled made pre-existing recycling knowledge and habits obsolete and counterproductive.

To address these barriers and increase proper waste sorting, we made the following recommendations:

1. Make waste stations uniform, ubiquitous, and convenient. This requires placing a full set of bins in frequent, easy-to-access locations throughout the office.
2. Make instruction signage at waste stations prominent and salient to ensure staff have information to guide sorting behavior in the moment.
3. Include new, specialized bins for the most commonly missorted items (ex: a coffee cup bin) in the "full set" of bins.
4. Align the FAO waste schema and language with the City of Rome's guidelines for public/household disposal to reduce the cognitive effort needed when sorting.
5. Draw attention to waste sorting and proactively correct misperceptions via internal communications campaigns.

To further refine recommendation #2, we developed and tested prototypes for new, clearer signage via a short online survey. The online survey provided a quick and easy user feedback channel that enables the refinement of designs or messaging before investing in a costly update of existing signage. The survey was delivered as a randomized controlled trial. Half of the respondents were randomly assigned to view the existing waste station signage (control) and the other half were assigned to view new behaviorally designed signage (treatment). All respondents were asked to complete the same series of 13 waste-sorting tasks.

The behaviorally designed signage used photographs of real waste items to enhance rapid comprehension, corrected the most common sorting mistakes by highlighting these items, indicated more clearly both what *should* go into the bins and what *should not*, and provided resources for additional sorting help.

ORIGINAL FAO BIN SIGNAGE

BEHAVIORALLY DESIGNED BIN SIGNAGE*

FULL SIGN

INDIVIDUAL BIN SIGN EXAMPLE

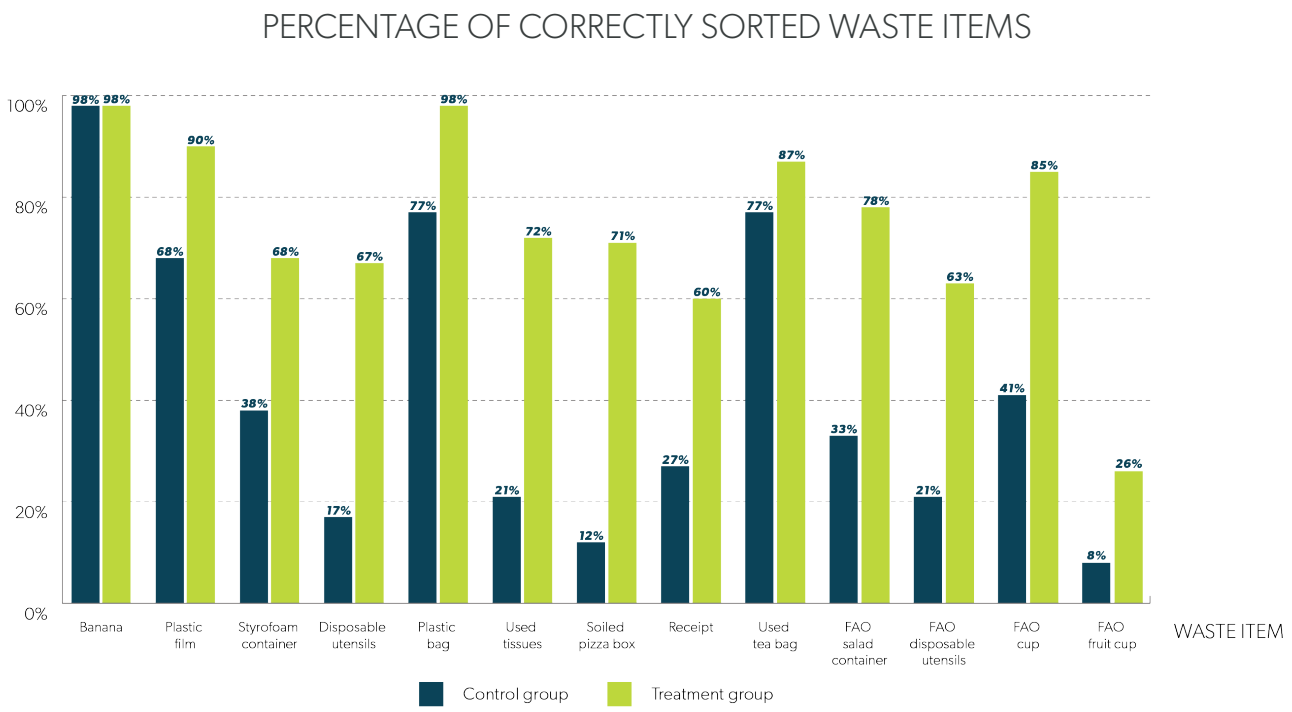
Results

The online survey was open for two weeks in July 2022. All FAO staff were invited to take the survey via an emailed link. In total, 1,665 respondents completed the full survey and met the inclusion criteria of currently working for the FAO.

Results show that salient, behaviorally informed signage can significantly improve waste sorting behaviors at FAO headquarters in Rome. Those who viewed the behaviorally informed signage correctly sorted nearly twice as many items as those who viewed the existing signage (an average of 9.6 items vs 5.4 items) in the online sorting tasks. In other words, viewing the behaviorally informed signage led to a 78% increase in the number of items correctly sorted, compared to viewing existing signage. Additionally, respondents in the treatment group found it easier to complete the waste sorting tasks.

Taking a closer look at the individual items sorted, we see that participants who viewed the behavioral signage were significantly more likely to correctly sort 12 of the 13 items. The one item sorted by both the treatment and control conditions with the same degree of accuracy, a banana peel, likely has a ceiling effect, with both groups correctly sorting the item 98% of the time.

* Online survey participants in the treatment group were shown this version of the sign, along with a PDF of an enlarged version of the sign where they could zoom in and out. They were also shown individual examples of each type of individual bin sign (see below for an example).



Takeaway

Behaviorally designed signage can improve comprehension of waste sorting information and correct item placement. The initial results also indicate further opportunities to strengthen the signage as well as opportunities for additional physical designs. Few respondents in both the treatment and control indicated that they consulted the external resources listed on the new signage, which indicates that this information was perhaps not salient or accessible. In addition, confusion between compostable and non-compostable items may best be addressed by sourcing alternative, more readily identifiable compostable packaging – although this remains outside the original purview of redesigning the waste stations. FAO plans to further refine the new signage and conduct a small in-person user test before scaling the recommendations from our pilot across the headquarters offices.

This pilot was one in a series of collaborations between ideas42 and the FAO to demonstrate how applied behavioral science could be utilized to help achieve objectives under FAO's Corporate Environmental Responsibility Strategy. The results and lessons will inform FAO's corporate environmental activities, as well as support a broader effort to embed applied behavioral design across FAO's activities, both in internal operations and external project work.