Improving Accuracy of Waste Sorting Through Behavioral Nudges

Authored by Student Sustainability Associates Cathy Xu, David Zhuo, and Trey Sides

The first campaign the Student Sustainability Associates ran was focused on waste. We educated our section on the environmental impacts of waste and reviewed how to sort compost versus recycling versus trash. We capped off the campaign by donning hazmat suits and sifting through dozens of bags of waste. After we aggregated the waste audit data, one thing stood out—HBS students do not sort their waste accurately. We threw away and recycled what should have been composted and this translated into two big environmental challenges.

1. Directly throwing away compostable material increases waste (HBS waste is mostly incinerated for energy recovery and a smaller portion is landfilled)

2. Contaminating recycling leads recycling loads to be rejected thus increasing landfill waste and reducing the benefits of recycling. This problem is exacerbated by the recycling industry setting stricter standards for contamination.

With these challenges in mind, we set out to change the status quo.

Our Ideation Process

To get our project started, we looked at the resources available at HBS and the broader Harvard community. We set up meetings with NudgeU, the marketing department, the sustainability team, Harvard Recycling, and a research group at the Kennedy school. Through the meetings, we had sessions on using behavioral nudge techniques, learned about interesting research done to nudge people's behavior towards environmental friendliness, and learned there is a field course offering opportunities to deep-dive into behavioral economics projects in a short period of time.

We also spent meetings deciding on the specific nudges we wanted to implement. How do we want to design the waste bin signage? Do we make it bigger, add emojis to each sign, or borrow **Whole Foods' shadow box idea**? Do we include a poster on top of the signage, and if yes, what kind of nudging tool do we want to use? We can shape behavior via loss aversion, social norm, or a simple reminder on how we are doing compared to other people. So many calls to make!

Our Solution

In the end, we decided to use the Spangler Grill as the location to run our experiment. It offered a high traffic area and was easy for the team to access. We utilized the following concepts in our design

- Loss aversion: highlighted the downsides to not sorting trash with the tagline "10 seconds to sort, 1000 years in a landfill

- Social norms: positioned the signage in an area where students can see each other's trash disposal behavior

- Simplification: used physical presentation of trash and added a tag line for each waste stream. Trash-> the last resort, recycle -> no food or liquids, compost-> all HBS to-go ware.

We donned our hazmat suits once again and conducted a baseline trash audit with the original signage and followed up with a week later by auditing the trash with our new signage.