

Giving shoppers a nudge to forgo plastic bags

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The opportunity to make a small charitable donation on a store owner's nickel may be just the encouragement shoppers need to forgo toting their goods home in a single-use plastic bag, new research suggests.

In the study, conducted at two [convenience stores](#) on a [college campus](#),

giving customers a 5-cent token toward a charitable donation in exchange for their rejection of a disposable bag reduced [plastic bag](#) use by about 30%.

The researchers experimented with the 5-cent donation concept as an application of the behavioral economics theory known as nudging. According to the theory, nudging can gently guide people in a certain direction but not restrict their options. And to count as a nudge, an initiative has to be low-cost.

"We had seen that a few stores had used donation incentives, which still let customers use a plastic bag. It was a perfect scenario for a nudge," said Wuyang Hu, co-author of the study and a professor of agricultural, environmental and development economics at The Ohio State University.

"We went into the project just wanting to understand whether this kind of incentive could be effective. Before we knew it, we realized we had collected quite a bit of data, and found we could quantify the effect.

"The nudge theory has been tested a lot, but this is one of the first attempts to implement the concept in a day-to-day activity and a popular topic—plastic bag use."

Hu conducted the study with his former graduate student, Jerrod Penn, now an assistant professor, and Penn's current graduate student Sapan Bastola, both at Louisiana State University. The research is published in the journal *Land Economics*.

The billions of non-biodegradable plastic bags consumers use annually wreak havoc on waste-management systems, cause pollution and threaten marine wildlife, but remain popular and convenient receptacles for carrying home groceries and other goods.

Efforts to control plastic bag use have ranged from bans or small taxes imposed by municipalities or entire countries to consumer education, with varying degrees of effectiveness. The researchers based their experimental model on programs implemented by three retail groceries: Lucky's, New Seasons Market and New Leaf Community Market, all of which provided customers who had reusable bags with a 5- or 10-cent token that they could donate to a charity.

The study was conducted at two campus-based convenience stores operated by the University of Kentucky, one that offered the donation incentive and another that did not. The [store](#) offering the 5-cent tokens in exchange for declining a plastic bag marketed the program only inside the store, on signs close to the checkout counter. Customers opting out of a plastic bag dropped their token into a container supporting one of three charities that had been selected by the university.

Undergraduate and graduate student research volunteers observed and logged data from transactions in one- or two-hour stretches over 12 weeks. At the intervention store, they sat silently near the checkout counter, recording whether shoppers took the cashier up on the token offer, and at both stores the students tracked plastic bag distribution, assessed the size of each customer's total purchase and randomly stopped customers to collect demographic data using a phone-scanner-based online survey.

Statistical analysis showed that the token donation program lowered the probability that a shopper would opt for a plastic bag by between 11.4 and 12.9 percentage points, representing a drop in [plastic](#) bag use of about 30-34%, Hu said. The analysis filtered out other factors, such as repeat customers, behavior influenced by other shoppers and circumstances that would affect shoppers' ability to forgo a bag.

"The question is the long-term effect. Will it last? I think for all nudges,

there is a decay effect because people get used to it in daily life. But would it go completely to zero? I don't think so," said Hu, who is conducting a year-long study to measure longer-term effects of a token donation program in a retail grocery store. "My prediction is it will reach a steady rate that lasts."

Anecdotal evidence suggested the program was popular among shoppers, most of whom were students.

"We actually heard a significant number of compliments, and we heard people who were buying lots of items say they wished they didn't have to use a bag," Hu said. "It might not be fully applicable to the entire general public, but I think it's close enough."

There are some costs associated with such a program for store owners—paying the donations to selected charities and additional time spent on transactions as the program is briefly explained.

Hu said the team would argue that 5 cents is a small cost, is not a tax, and for customers, it's still a voluntary donation. And in the long run, people would know donation programs exist and the clerk wouldn't need to explain as much.

"Plus, the 'cost' is not lost, but is used for good causes," he said.

More information: Jerrod Penn et al, Nudging Away from Plastic Bags with Charitable Donations, *Land Economics* (2021). [DOI: 10.3368/le.98.1.011820-0007R1](https://doi.org/10.3368/le.98.1.011820-0007R1)

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