

Nudging food delivery customers to forgo the fork drastically cuts plastic waste, study shows

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In 2021, more than 400 million metric tons of plastic waste were produced worldwide, and it is predicted that the world's plastic waste

growth will continue to outpace the efforts to reduce plastic pollution in the coming decades.

As food delivery services became increasingly popular during the COVID-19 pandemic, the surge in plastic [waste](#) generated by single-use cutlery has become a key environmental challenge for many countries. A new study finds "green nudges" that encouraged customers to skip asking for cutlery with their delivery orders were dramatically successful and could be a powerful policy tool to reduce plastic waste.

"Few policies target plastic waste production at the consumer level, except charges on [plastic bags](#)," says EPIC-China's research director Guojun He, an author of the study and an Associate Professor at the Hong Kong University Business School. "Our findings show that simple nudges can make a big difference in changing consumers' behaviors and could become a tool for policymakers as they confront the immense challenge of plastic waste."

Reducing single-use cutlery waste in the food-delivery industry is particularly important in China, the world's largest producer and consumer of single-use cutlery.

As of 2019, more than 540 million Chinese were active users of food-delivery services and each day consumed more than 50 million sets of single-use cutlery that were not adequately treated or disposed of. To reduce single-use cutlery consumption, [policy-makers](#) in China set a target of reducing its usage in food deliveries by 30 percent by 2025.

Guojun He and his co-authors Yuhang Pan, Albert Park, Yasuyuki Sawada and Elaine Tan worked with Alibaba's online food-ordering platform Eleme. Eleme is China's second largest food-delivery company, similar to Uber Eats and DoorDash, with more than 753 million users in 2022.

The researchers evaluated the effectiveness of Alibaba's green nudges to reduce single-use cutlery consumption. These nudges included changing the default selection to "no cutlery" and including green points as rewards for not using the cutlery. When a customer accumulated enough green points, they could then be redeemed to plant a tree under the customer's name. The work is published in the journal *Science*.

The researchers studied each user's monthly food-ordering history for two years through 2019–2020 in 10 major Chinese cities. These included the three treated cities with green nudges (Beijing, Shanghai, and Tianjin) and the seven control cities without the nudges (Qingdao, Xi'an, Guangzhou, Nanjing, Hangzhou, Wuhan, and Chengdu). Among these cities, the authors randomly sampled about 200,000 active users (i.e., those who placed at least one order between 2019 and 2020).

The authors found that the green nudges—changing the default to "no cutlery" and rewarding consumers with green points—increased the share of no-cutlery orders by 648%. If green nudges were applied to all of China, they discovered that more than 21.75 billion sets of [single-use](#) cutlery would be saved annually—eliminating 3.26 million metric tons of plastic waste and saving 5.44 million trees (from wooden chopsticks) each year.

"Other food delivery platforms, such as UberEats and DoorDash, could try similar nudges to reduce cutlery consumption and [plastic](#) waste globally," says He.

More information: Guojun He, Reducing single-use cutlery with green nudges: Evidence from China's food-delivery industry, *Science* (2023). [DOI: 10.1126/science.add9884](https://doi.org/10.1126/science.add9884).

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