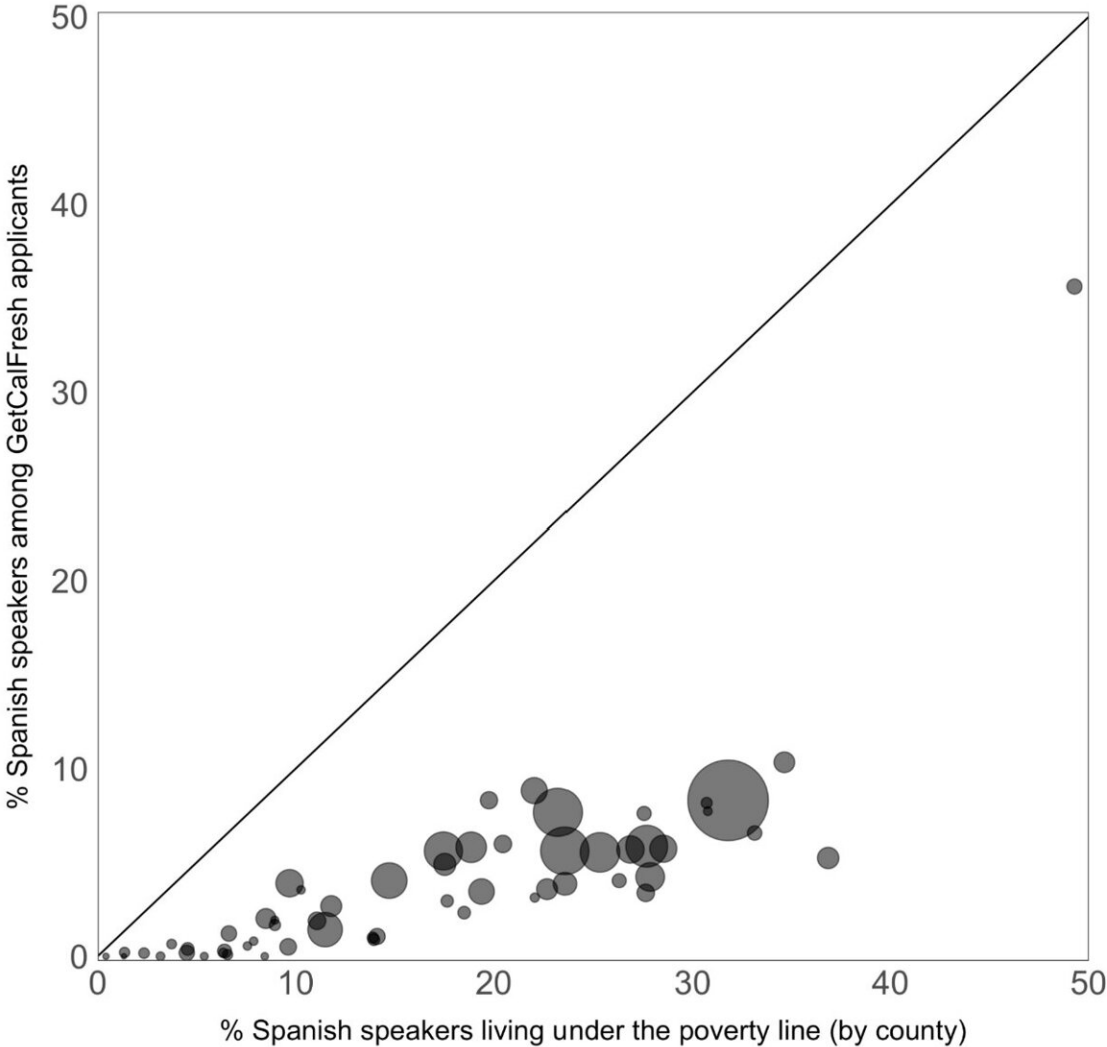


Google algorithm found to overlook Spanish speakers in online SNAP ads

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In all California counties, the share of primarily Spanish-speaking individuals is smaller (i.e., below the di-agonal) among GetCalFresh applicants relative to the

population living under the poverty line—a common proxy for SNAP eligibility. Scatter dot sizes correspond to total population of county. In San Diego county, roughly 23% of adults living below the poverty line primarily speak Spanish at home. Credit: *Popular Support for Balancing Equity and Efficiency in Resource Allocation: A Case Study in Online Advertising to Increase Welfare Program Awareness* (2023)

A Cornell-led research team has discovered that the algorithm behind Google Ads charged significantly more to deliver online ads to Spanish-speaking people about the benefits of SNAP, formerly known as food stamps.

Together with a survey of 1,500 Americans that found broad support for a more equitable approach to promoting SNAP, the findings led to changes to directly target more Spanish-speakers in California who seek help paying for food.

"SNAP is a really important resource to get right," said Allison Koenecke, assistant professor of information science in the Cornell Ann S. Bowers College of Computing and Information Science. "When faced with an algorithm that has disparate impact, our research asks, how do you pick a strategy to interact with the algorithm to equitably recruit SNAP applicants?"

Koenecke is the lead author of "Popular Support for Balancing Equity and Efficiency in Resource Allocation: A Case Study in Online Advertising to Increase Welfare Program Awareness," which was presented at the AAAI Conference on Web and Social Media in June.

"Our goal was to go beyond just quantifying these ad cost disparities," she said. "We also wanted to address questions asked by real-life

decision-makers, like what do we actually do about this? How do people actually want to allocate these ads?"

Californians can apply for SNAP benefits using a website called GetCalFresh, which is developed and managed by Code for America, a civic tech nonprofit that builds digital tools and services for [community leaders](#) and governments. Code for America primarily recruits GetCalFresh applicants through Google Ads—for example, spending roughly \$400 daily to reach anyone from San Diego County who punches key words and phrases like "how to apply for food stamps" into Google.

However, despite GetCalFresh being offered in multiple languages, Spanish-speakers were filling out proportionally fewer applications than English-speakers. In San Diego County, 23% of families living below the [poverty line](#) speak Spanish as their primary language, and yet just 7% had applied for SNAP via GetCalFresh, researchers said.

Koenecke and her collaborators discovered one possible reason: the default, dollar-stretching algorithm behind Google Ads was working too efficiently and disregarding Spanish-speaking people in the process.

When Google Ads is configured to garner the most SNAP enrollments per dollar, it ends up delivering fewer ads to prospective Spanish-speaking applicants because such ads cost more than those for English speakers, the team found. At the time, for every \$1 spent on Google Ads to "convert" an English-speaking [applicant](#) into a SNAP benefits holder, it cost \$3.80 to convert a Spanish-speaking person—nearly four times more. Another bidding option on the Google Ads platform cost 1.4 times more to reach Spanish-speakers versus English-speakers.

Koenecke and her collaborators can't definitively explain the difference, since Google Ads is a black box—a proprietary machine-learning tool

outside of public review. It could be attributed to any number of factors, like supply and demand or a bug in the system, she said.

For GetCalFresh, the research findings pose an important ethical question regarding how to spend its limited online advertising budget: Should they reach as many Californians as cheaply as possible, even if that means fewer Spanish-speaking applicants, or advertise more to Spanish-speakers, even if that yields fewer total applicants?

Trade-offs such as these are at the heart of Koenecke's research into fairness and algorithmic systems, which are increasingly being used to help with decision-making in areas with real consequences, like health care, banking and child services. But without additional scrutiny, algorithms—including a seemingly harmless one behind an advertising platform—can exacerbate inequality or produce results that run counter to what people actually want or need, she said.

Koenecke and her collaborators asked the public to weigh in, surveying roughly 1,500 Americans on how they would balance efficiency and equity in advertising SNAP benefits. Across age groups, gender, race, welfare status and even political party affiliation, respondents generally preferred reducing total enrollments to facilitate more enrollments among Spanish speakers, researchers found. When they ran the survey among Code for America staff, they found similar results—a strong desire for equitable access.

"If you compare the fact that the majority of both Republicans and Democrats actually prefer some amount of equity in this particular case, then this opens the door to more bipartisanship in thinking about how fairness can play a role in online applications involving the algorithmic distribution of goods," Koenecke said.

As a result of the team's findings, Code for America adjusted its online

advertising strategy to directly target more Spanish-speaking prospective applicants.

"It's important for the field and the public to have productive dialogs about the kinds of metrics we should be using in these algorithmic systems," she said. "The communities most impacted by the algorithms should be given more power in the decision-making process."

More information: Report: ojs.aaai.org/index.php/ICWSM/article/view/22163/21942

Provided by Cornell University

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