

New web tool helps online shoppers detect price discrimination on e-commerce sites

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Credit: AI-generated image ([disclaimer](#))

Northeastern University researchers have developed a web tool that could help consumers avoid being the victims of online price discrimination.

The researchers developed an extension, which officially launched

Monday, designed for desktop users searching in Google Chrome, the most-used internet browser. Here's how it works: [Download the extension](#) and visit one of three sites it supports: Amazon, Google Flights, and Priceline Hotels. Once you do a search, it will then quickly send back and seamlessly merge into your screen the results showing whether you are receiving a different price, higher or lower, than the price the servers are getting.

"I don't think there's anything out there like this," said David Lazer, Distinguished Professor of Political Science and Computer Science, who helped to design the extension. "It's a tool people can use to better understand the prices they're getting from e-commerce sites."

In addition to Lazer, the research team comprised Christo Wilson, assistant professor of computer science, and Jason Radford, a postdoctoral research associate in Lazer's lab. They developed the extension with a grant from the Knight Foundation.

When testing the extension on these sites, the researchers didn't find rampant price discrimination—in which a product's price is customized to the user. In fact, little evidence of price discrimination was found. However, they said price steering—in which the order of search results is customized to the user—was much more common.

Yet, the researchers did point to one case of price discrimination they found. When searching Google Flights for a roundtrip flight between San Diego and San Francisco in late December, they found that three flight options on one airline were listed for \$56 more than the price shown for their servers; and for that same roundtrip flight, a different airline priced two flight options at a \$45 higher fare than the price shown for their servers.

If users do notice price discrimination in effect, Lazer suggests that they

try running the same search using a different browser or device to see if they get different results.

The researchers said price discrimination or steering is caused by any number of factors—including the browser that is being used, the device that is being used, and the user's search history. In fact, sometimes it's just simply "noise," the product of web static, that leads to such results.

Their extension project is part of Volunteer Science, a Northeastern-led collaboration of scientists from leading research universities to expand the tools available for social and behavioral research. This web laboratory is focused on improving statistical power by involving more people, lowering costs by using open standards, reducing data collection time by creating a community of active and engaged participants, and promoting citizen engagement with and interest in scientific research.

Users who activate this Google Chrome extension will be asked to complete a voluntary survey about themselves, their search experiences, and overall shopping habits—data that the research team said can be examined in the future to better understand price customization practices.

"By downloading the extension and donating their data, consumers will not only see whether they're being discriminated for or against, but will also advance scientific knowledge about how companies are using your data," Radford said.

The extension project builds upon previous work by the researchers, who have [found numerous instances of price discrimination and steering](#) among popular e-commerce sites. In other research, they [found that Amazon](#) doesn't always pitch shoppers the best price; rather, the site is more likely to feature sellers in the buy box who use an automated practice called algorithmic pricing, even though their prices may be

higher than those who don't.

These findings drove them to develop the [extension](#), which, they say, allows the average web user to better understand and be aware of these practices.

"In the early days of the internet, pretty much everyone saw the same thing," Lazer explained. "The same content would be returned for searches, the same prices for different products. But the incentive to provide different information—and for companies to find the most that someone is willing to pay—is really strong for e-commerce companies."

Provided by Northeastern University

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