

Study examining Airbnb users and data suggests that reputation can offset social bias

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The "share economy," where people rent goods and services, including their residences and automobiles, has numerous benefits for people trying to make extra money. One downside, however, is the prospect of people's biases about race, gender or other factors affecting their decisions about who to do business with.

A new Stanford study analyzing Airbnb users and data suggests measures that enhance a user's [reputation](#), like stars or reviews, can counteract these harmful prejudices. The results, the researchers said, indicate sites that use reputational tools create a fairer and more diverse online marketplace.

The study appeared Aug. 28 in *Proceedings of the National Academy of Sciences*.

Bias and the "share economy"

The share economy, also referred to as "collaborative consumption" and "peer-to-peer lending," has allowed everyday citizens to turn into entrepreneurs, taking advantage of an industry that's projected to grow to \$335 billion by 2025, according to the Brookings Institution.

Share economy transactions are distinctive because, unlike most other e-commerce dealings, they have an intimate feeling to them. Think about when you purchase a pair of shoes online either directly from a retailer or from a third-party site: there's rarely, if ever, a human element to the transaction.

But when you reserve an apartment on Airbnb, there's a personal feel – you're staying at someone's home. Because of that element, you become attentive to the personal characteristics (ex. gender, age, etc.) of the home's owner or the guest, said Bruno Abrahao, a visiting assistant professor at Stanford's Institute for Research in the Social Sciences and the study's lead author. That attentiveness to details peripheral to the transaction can lead to [bias](#).

The researchers in this study focused on a certain type of bias called homophily, a natural tendency to develop trustful relationships with people similar to themselves, and how best to counteract it. The study is

part of a broader research project analyzing trust and technology at Stanford.

Opposing forces

The researchers recruited nearly 9,000 Airbnb users for their experiment, conducted on an online platform external to Airbnb's. The participants were shown mock profiles of other Airbnb users with varying demographic and reputation information.

The researchers created two experimental groups. Group 1 included profiles with some demographic similarities to the study participant (ex. a single male in his 20s viewing a [profile](#) of a user with comparable age, gender and marital status). Group 2 included profiles with completely different personal traits from the participant, but with better reputations—conveyed by impressive star ratings and number of reviews – than those in Group 1. (Profiles from Group 1 were included in Group 2 for comparison).

To test for evidence of bias, participants played a behavioral game where they were asked to invest credits in the various profiles. The amount of credits a person invested in each profile served as a measure of trust.

In the first group, participants invested greatly in the similar profiles. The more similar the profiles were, the more the participant trusted them, succumbing to bias.

In the second [group](#), however, the researchers noticed a shift. Participants invested significantly more in users whose characteristics were completely different than their own, but who had better reputations. Those profiles' reputation mechanisms counteracted people's penchant for favoring users similar to themselves.

A more fair and diverse marketplace

Knowing the robust effects reputation features had in the experiment, the researchers then analyzed 1 million actual interactions between hosts and guests on the Airbnb platform. They found that hosts with better reputations were attracting more demographically diverse guests, as their data predicted should happen.

This finding offers evidence that reputation systems used by Airbnb and other sites on the sharing economy platform may allow users, like the study's participants, "to extend trust to those who exhibited a high degree of dissimilarity in the social space," the authors wrote.

Not only can offsetting these social biases be beneficial for users seeking services, but also for marginalized hosts offering them, Abrahao said.

"The fundamental question we wanted to answer is whether technology can be used to influence people's perception of trust," Abrahao said.

"These platforms can engineer tools that have great influence in how [people](#) perceive each other and can make markets fairer, especially to users from underrepresented minorities."

More information: Bruno Abrahao et al. Reputation offsets trust judgments based on social biases among Airbnb users, *Proceedings of the National Academy of Sciences* (2017). [DOI: 10.1073/pnas.1604234114](https://doi.org/10.1073/pnas.1604234114)

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