# **Do workers discriminate against their employers? Evidence from an online labor market**

**Motivation and Research Question**

A large body of literature in economics has demonstrated that prejudice or bias of the majority group (the in-group) towards members of a minority identity (the out-group) – whether it be racial, religious, ethnic or gender in origin – is widespread in labor markets, especially so in an ethnically-diverse setting such as the United States. Such biases often lead to discrimination when, all else same, a *less-favorable* treatment is systematically meted out to the out-group relative to the in-group. Such prejudicial treatment may reveal itself on either the extensive margin (the decision-to-hire stage) or the intensive margin (how much to pay, what sort of job conditions and work hours to offer existing employees, etc.). It is commonly believed that labor market discrimination is one-sided: driven by employers toward their out-group employees. In this proposal, we restrict attention to racial identity and seek to study possible discrimination on the intensive margin in the *reverse* direction, i.e., we ask, do *workers* discriminate on the intensive margin (say, by shirking or under-providing effort) for an *out*-race employer relative to an otherwise-identical, *own*-race one?

Why is this question interesting? Suppose, for the moment we do uncover compelling evidence of workers discriminating against out-race employers. From there, suppose we are to leap that employers, even racially-unbiased ones, come to anticipate such discrimination from out-race employees. Viewed this way, it would appear that discrimination by employers could be a rational response to the *belief* they hold about the discriminatory behavior their out-group employees *supposedly* have for them. In which case, their discrimination may itself be rational, and possibly, persistent. Here, we propose to tackle only the *first link* in the above chain of argument by narrowly asking, is there evidence that workers discriminate on the intensive margin (work effort) against out-race employers?

To answer our research question, we employ dominant views of prejudice from the psychology literature. The literature postulates that 1) prejudice is an evolutionary phenomenon making group membership an important component of one’s social identity (Tajfel, 1970) and 2) unconscious automatic negative associations can be triggered by exposure to out-group (Bertrand, Chugh, & Mullainathan, 2005). In a way, the psychological literature offers micro-foundations to Becker’s animus-based model, in which discrimination exists because of animus/distaste towards the out-group (Becker, 1957). We test discrimination in social preferences - such as altruism (feelings of benevolence towards an employer) and reciprocity (feelings of fairness towards the employer) - as the drivers of taste-based discrimination in our setting. To keep the identification clean, our experimental design will shut out the extensive margin – workers will have no choice in determining their employers and can only choose how hard to work for the given employer. Second, there will be no possibility of any beliefs-driven discrimination; this means any discrimination we may detect is necessarily *taste-based*.

Specifically, we are interested in answering whether white skin-tone workers – see Hersch (2006) - provide more/less effort (intensive margin) for white skin-tone employers as compared to those with black skin tone given they had no choice in selecting their employer.[[1]](#footnote-3) To our knowledge, ours is the first to explore the possibility of bias in social preferences driven from the worker side in the absence of any discrimination or anticipation of discrimination from the employer side.

**Methodology**

Inspired by Dellavigna & Pope (2018), we propose an experiment using subjects from Amazon’s Mechanical Turk (M-Turk) and black & white student subjects from Iowa State University. The student subjects will be “Employers” while M-Turk subjects will be “Workers.” We will match each worker to an employer. The employer will assign the worker a Qualtrics-based real-effort task which requires the latter to alternately press the ‘a’ and ‘b’ buttons on his keyboard. His performance will determine how much he and his matched employer earns. In particular, note the employer will not get to make any strategic choices (such as wage offer, minutes of work, etc.) thereby eliminating most channels for statistical discrimination by workers. Also note, we (as do Dellavigna & Pope (2018)) will use a real-effort task which means both effort and the costs of effort will be *real* and not monetary. This, in turn, will require us to estimate the cost-of-effort function using structural-estimation techniques.

A big issue, right off the bat, is, how should race be revealed? We take the approach of revealing race via the revelation of skin-color. To that end, “employer-students” will be videotaped while they read off a script explaining and demonstrating the “a-b” task. The camera placement will only capture the forearm of the employer along with the movement of the fingers alternating ‘a’ and ‘b’ button presses. Other identifiers, such as the face, will not be shown in the video. The employer’s hand and forearm will be bare or covered (with full sleeves and typing gloves) depending on the assigned treatment (treatments are given in Table 1). The audio in the video will be partially digitized to reduce race markers from the voice.

Having video-recorded the employers, we will recruit subjects from M-Turk to work on the button-pressing task. randomly an Before a worker starts, however, he/she will have to watch a randomly-selected pre-recorded video (see above) explaining the task. The video in the baseline (race-salient) setting will entirely conceal (reveal) the skin color of the employer. The random assignment of a worker to a video will determine the treatment assignment for the worker. Upon completion, there will be some follow-up questions aimed at eliciting beliefs about the matched employer.

Our experiment will comprise of ten treatments, and each worker will be randomly assigned to one of these. We designed these treatments based on a simple structural model where workers maximize utility from providing effort, . Worker ’s utility from working with an employer of out-group is given as

where is the fixed payment from participating in the study, is the race-blind intrinsic motivation of a worker toward the task per unit effort, is the feeling of reciprocity towards the employer activated when the worker is rewarded with a gift from the employer, is the altruism parameter which measures the worker’s altruistic preference towards the employer given that the latter earns from each unit of the worker’s effort, is the piece rate per unit of effort, and represents the cost-of-effort function.

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| **Table 1: Treatments** | |
| **Treatment** | **Description** |
| Piece Rate – 0 cents | A worker’s payment will be unaffected by the number of points he/she scores in the task. No matched employer. |
| Piece Rate – 3 cents | A worker will be paid 3 cents for every 100 points he/she scores in the task. No matched employer |
| Piece Rate – 6 cents | A worker will be paid 6 cents for every 100 points he/she scores in the task. No matched employer |
| Piece Rate – 9 cents | A worker will be paid 9 cents for every 100 points he/she scores in the task. No matched employer |
| Altruism Baseline | A worker’s payment will be unaffected by the number of points he/she scores in the task. Worker’s matched employer will be paid 1 cent for every 100 points scored by the worker. The employer will be wearing full sleeves and typing gloves to make sure that the race/skin-color is not revealed in the video. |
| Altruism Black | Earning rule will be the same as in the Altruism Baseline for both the worker and the employer. The employer’s forearm and hand will reveal dark/white skin color in the video. The employer’s forearm and hand will be black in the video. |
| Altruism White | Earning rule will be the same as in the Altruism Baseline for both the worker and the employer. The employer’s forearm and hand will reveal dark/white skin color in the video. The employer’s forearm and hand will be white in the video. |
| Reciprocity Baseline | A worker’s payment is unaffected by the number of points he scores in the task. The worker will be paid 20 cents *extra* as a reward before the task begins. Worker’s matched employer will be paid 1 cent for every 100 points scored by the worker. While recording the video, the employer will wear full sleeves and typing gloves to ensure skin-color is not revealed. |
| Reciprocity Black | Earning rule will be the same as in the Reciprocity Baseline for both the worker and the employer. The employer’s forearm and hand will appear dark-skinned in the video. |
| Reciprocity White | Earning rule will be the same as in the Reciprocity Baseline for both the worker and the employer. The employer’s forearm and hand will appear white-skinned in the video. |



The data from the piece-rate treatments will allow us to estimate parameters of cost function and. Altruism and reciprocity treatments will help identify altruism and reciprocity parameters separately for Black and White employers. These will enable us to calculate the welfare implications of discrimination in our experimental setting.

The data we collect will also permit us to calculate treatment effects arising from the race-dependent social preferences of workers. For example, the worker effort choices under the Altruism treatments will identify the treatment effects for discrimination in altruism. i.e.

Data from the Altruism baseline treatment can further indicate whether the discrimination (if any) is driven by in-group favoritism or out-group animosity.

We have performed an extensive statistical power calculation for our experiment. We will need to recruit roughly 50 Employers and about 6,000 M-Turk based Workers for our experiment (more justification is in the appended budget). The IRB approval for this project is being sought from Iowa State University and is currently at the final stage pre-approval. This project will also be registered with the AEA RCT registry.

**Project’s relevance to the foundation’s programs and how it would contribute to RSF's mission to improve social and living conditions in the U.S.**

This project is directly related to the foundation’s program on “Behavioral Economics”. We use insights from behavioral and experimental economics to shed light on a pressing issue in American society, namely, racial discrimination.[[2]](#footnote-6) RSF has played an instrumental role in anchoring research on issues concerning with race and ethnicity as well as behavioral economics. Much of this research has attempted to understand discrimination by employers towards workers. As opposed to the standard literature, our study is aimed to help understand whether workers exhibit differences in preferences depending on the race of their employer. These results may have far-reaching implications when it comes to understanding the sources of employer discrimination and affirmative action policies. We use the scholarship from psychology to study discrimination which describes socialization and social norms as being the dominant drivers of discrimination. Influential work in psychology has demonstrated that social identity plays a key role in the process underlying prejudice. Our unobtrusive race revelation mechanism is based on a psychological finding that unconscious and unintentional forms of biases can lead people to behave in ways that are unrelated or even sometimes opposed to their explicit views or self-interest. This research will help provide evidence to these psychological mechanisms in the setting of the online labor market. Behavioral Economics and experimental methods provide us with interesting possibilities and paradigms in which data can be collected, which otherwise would not have been possible. The identification is also clean, thereby, making causal inference credible. The fact that we can use these tools not only to understand but also to ameliorate the social and living conditions of people in the US inspires us more to take up this research.

**References**

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1. Glover, Pallais, & Pariente (2016) pose a thematically similar question and find that minority workers under provide effort when working for managers who harbor implicit bias. Relatedly, Ayalew, Manian, & Sheth (2018) find worker subjects statistically discriminate and are less likely to follow the advice of female leaders, and perform worse as a result. . [↑](#footnote-ref-3)
2. Since the passage of the Civil Rights Act of 1991, the Equal Employment Opportunity Commission has received almost 670,000 race discrimination charges and reports monetary awards of just over $1.4 billion to victims of racial discrimination [↑](#footnote-ref-6)