

# An Updated Analysis of Race and Gender Effects on Employer Interest in Job Applicants

*Rajeev Darolia, Cory Koedel*

## Summary

- We re-visit the question of how job applicants' race and gender designations affect employer interest in their resumes using new data collected in seven major U.S. cities.
- We use an experimental 'resume audit study' research design, in which we randomly assign names that imply a race-gender designation to resumes of fictitious applicants. We then send the resumes to advertised job openings and track employer responses. There are no differences in applicant qualifications by race/gender group, on average, in our study.
- We sent nearly 9,000 resumes to employers, focusing on six broad occupational categories: administrative assisting, customer service, information technology, medical assisting (excluding nursing), medical office/billing and sales.
- We do not find evidence of employer preferences for applicants from particular race and gender groups at the resume review stage of the hiring process.

## Background

There is a large and ongoing research literature that aims to understand the causes and consequences of race and gender-based differences in labor market outcomes.<sup>1</sup> The specific question of how much these gaps are driven by discrimination in the labor market has received considerable attention. In 2004, Marianne Bertrand and Sendhil Mullainathan released results from an influential resume audit study where they sent fictitious resumes to employers containing names that were either very likely to be interpreted as being sent from an African American applicant or very likely to be interpreted as being sent from a white applicant. These authors found large gaps in callback rates by race. This report summarizes results from a follow-up of sorts to the 2004 Bertrand and Mullainathan study, which is forthcoming in *Applied Economics Letters* and referenced in the bibliography.

<sup>1</sup> For ease of exposition, throughout this brief we use the term "race" to indicate race/ethnicity.



*Darolia is an Assistant Professor at the Harry S Truman School of Public Affairs. His research areas include Education Policy and Consumer Credit.*



*Koedel is an Associate Professor at the Harry S Truman School of Public Affairs. His research areas include Economics of Education, Labor Economics and Applied Microeconomics.*

## The Experiment

We sent almost 9,000 fictitious resumes to online job postings in seven cities and six occupational categories: administrative assisting, customer service, information technology, medical assisting (excluding nursing), medical office/billing and sales. The resumes were constructed based on real resumes posted online by job seekers. All resumes indicated that the applicant had attained his or her high school diploma and approximately 85 percent of resumes indicated at least some college coursework at a 2-year institution.

The experiment was designed to observe employer preferences for relatively young applicants soon after finishing their education. All resumes indicated that the applicant graduated from high school in 2010 and resumes were sent out to employers in 2013 and 2014. We sent up to two resumes to each job advertisement, each with a different format and without overlapping content. More information about the experimental design can be found in Darolia et al. (2015, forthcoming).

We selected last names on resumes that were likely to be interpreted as coming from black, Hispanic, and white applicants. Applicants' first names were used to suggest gender, and in the case of Hispanic applicants, also were indicative of ethnicity. The Hispanic sounding surnames were Hernandez and Garcia, the African American sounding surnames were Washington and Jefferson, and the white sounding surnames were Anderson and Thompson. These surnames are strong indicators of race based on national administrative records. According to data from the United States Census, 90 and 75 percent of individuals with Washington and Jefferson surnames are African American, respectively. Similarly, 90 percent of individuals with a surname of either Hernandez or Garcia are Hispanic, and 70 percent of Andersons and Thompsons are white.<sup>2</sup>

There are three key differences between our study and the earlier Bertrand and Mullainathan (2004) study. First, we compare employer callbacks across three groups – black, Hispanic, and white – instead of just two. To the best of our knowledge, our study is the first to use a resume audit design to study labor market outcomes for Hispanic applicants.<sup>3</sup>

Second, our data are recent. We collected data during 2013 and 2014, twelve years after data were collected for the Bertrand and Mullainathan study. Given that the labor market is constantly evolving, it is useful to update our understanding of discrimination as time progresses.

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<sup>2</sup> Per 2000 Census data, see <https://www.census.gov/genealogy/www/data/2000surnames/>. We used three first names likely to be interpreted as female – Isabella, Megan and Chloe – and three first names likely to be interpreted as male – Brian, Carlos and Ryan. The first names Isabella and Carlos were paired with Hernandez and Garcia to suggest Hispanic origin, while Chloe and Ryan were paired with Washington and Jefferson to indicate an African American applicant. For white applicants, the first names Megan and Brian were paired with Anderson and Thompson.

<sup>3</sup> Although several small-sample audit studies that involved person-to-person interactions from the 1990s show negative outcomes for Hispanics relative to whites at various stages of the hiring process (see Riach and Rich 2002 for discussion).

Third, unlike in the Bertrand and Mullainathan study, we do not use distinctly African American-sounding first names because researchers have indicated concern that these names could be interpreted by employers as being associated with relatively low socioeconomic status (Fryer and Levitt, 2004). Employers in the Bertrand and Mullainathan study may have been responding to a perception of applicants' SES separately from a perception of race, and our interest is in capturing the effect of perceptions of race alone. Instead, we rely on the above-described surnames as indicators of race in our study. A tradeoff is that the surnames in our experiment may not be as strong of indicators of race as the distinctly African-American sounding names in Bertrand and Mullainathan. We elaborate on this point in more detail below.

## Findings

Figures 1 and 2 summarize our findings by showing employer response rates to the resumes by the intended race and race-gender group of applicants in our study. On average, 11.4 percent of resumes received a response from an employer. The differences across race and race-gender groups favor white applicants, but they are substantively small. In the academic paper (Darolia et al., forthcoming) we estimate empirical models and test whether the small observed differences in response rates between black, Hispanic and white candidates are statistically distinguishable. They are not.

Figure 1. Employer Response rates by Race (Genders Combined).

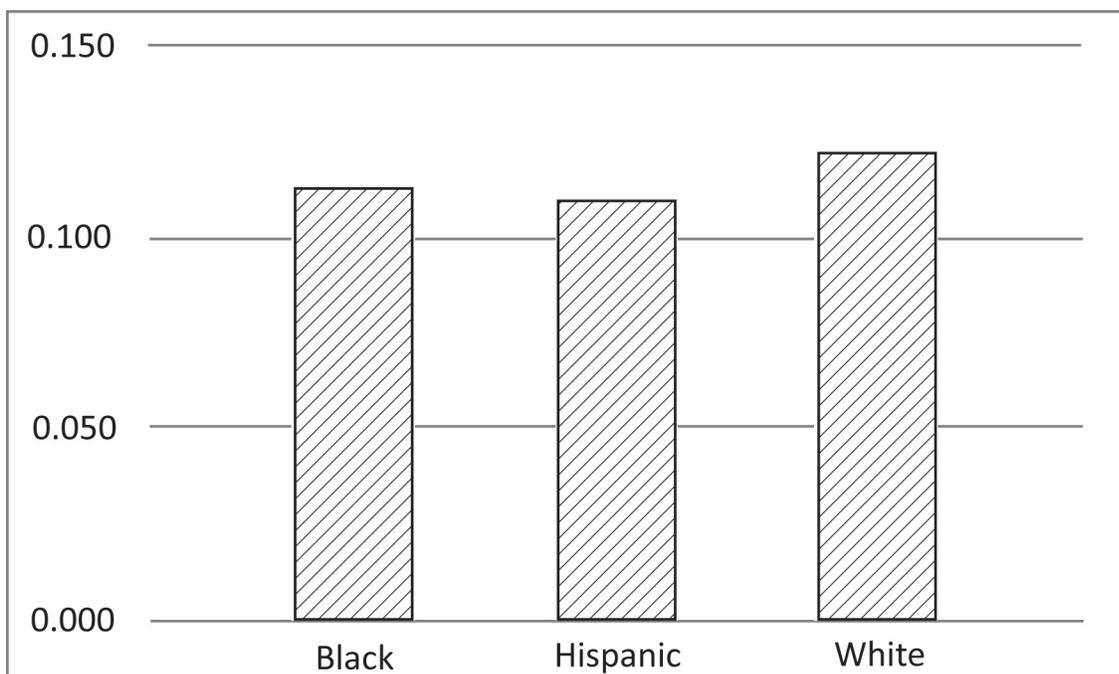
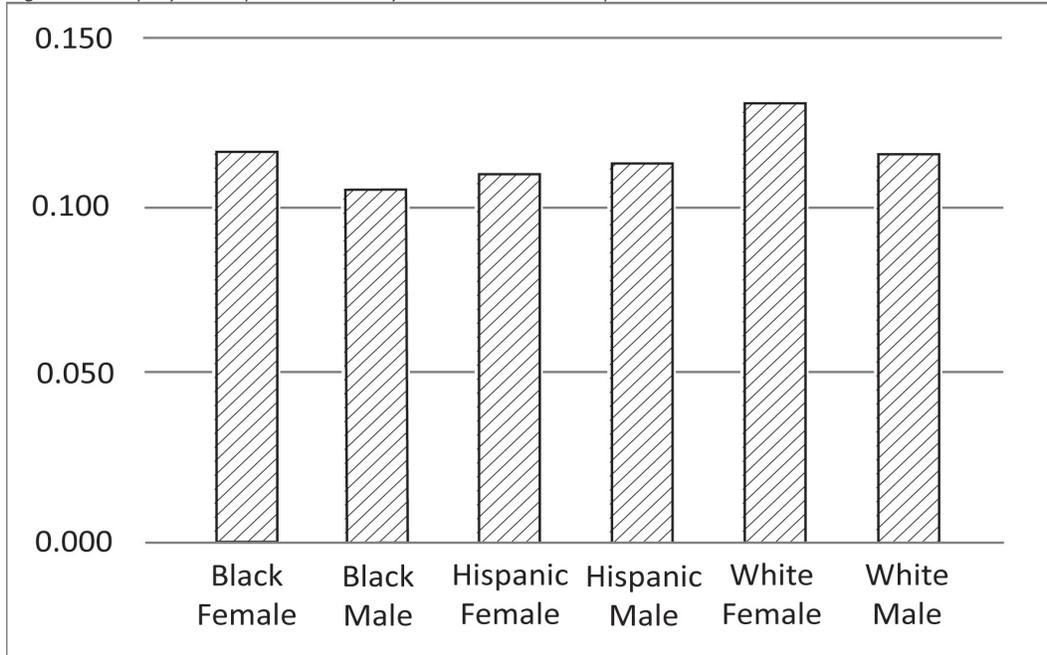


Figure 2. Employer Response Rates by Race-Gender Group.



We further examined the sensitivity of these null results in several ways. First, we split the data to test for differential response rates separately for each occupation. Like with the summary results presented above, the data weakly point toward employers preferring white applicants, but the number of statistically significant results that we obtain in the occupation-by-occupation models is not far from what we would expect to observe purely by chance.

Second, we considered the sensitivity of our findings to tracking explicit interview requests instead of employer responses, with the former measure likely serving as a stronger signal of employer interest. Our findings are substantively similar to what we show above.

Third, we examined the extent to which inaccurate inferences by employers about the racial background of intended African American applicants in our study may have affected the results. Returning to the discussion from above, although the surnames Washington and Jefferson are predominantly African American, this information may not be known to some employers. Analytically, we can frame this as a measurement error problem, and we estimated measurement-error models to determine the potential impact on our results of inaccurate employer inferences for these names. The findings indicate that if we allow for “factually accurate” error rates based on the racial proportions in surname data from the US Census (10-25 percent), our findings are qualitatively unaffected. We can also ask how high the error rate would need to be for our point estimates for African Americans to be similar to what is found by Bertrand and Mullainathan in their 2004 study. We find that the error rate would need to be nearly 60 percent.

## Conclusion

Using experimental data from a recently-performed field experiment, we do not find evidence to suggest that employers systematically discriminate against race and gender groups when responding to resumes from relatively young applicants. Our research design does not permit us to examine discrimination in other stages of the hiring process, such as interviews or offers, and continued research is needed to further understand the barriers to employment faced by applicants from different races, ethnicities, and genders. One explanation for the difference between our findings and those from earlier studies is that we listed names on resumes that indicate race and gender without further signals of socioeconomic status. It may also be that our findings are partly attributable to the recency of our data; racial discrimination during job application review in recent years may be less prevalent than when researchers conducted previous studies.

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### References

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