Disparities by Race and Gender in SS(D)I Applications and Awards

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September 2023

The Social Security Administration (SSA) is responsible for the administration of two important programs, namely the Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI). It is crucial to analyze these programs in order to maintain their fairness and effectiveness. In our study we employ both the conventional regression method and machine learning (ML) techniques to investigate potential racial and gender disparities in SS(D)I applications and awards.

Women are less likely to apply for SSDI compared with men

Our research employs both traditional and advanced methods to examine the presence of disparities. Specifically, we use ordinary least squares (OLS), a commonly used method for estimating disparities, to form a baseline understanding. Unlike OLS, which relies heavily on subjective decisions on setting up a regression model such as deciding what interaction terms must be included (to capture heterogeneities in the disparity along socioeconomic dimensions), the double/debiased ML estimator uses a more flexible, data-driven approach. It can be a valuable alternative to conventional methods especially in cases where a very large number of observables must be controlled for to identify a disparity. There appears to be a gender disparity in SSDI applications, with women being less likely to apply compared with men (Figure 1).

Racial disparities in SS(D)I applications/awards are statistically insignificant

By incorporating interaction terms of observed characteristics using a more data-driven (and less theory-driven) approach, the ML estimates indicate that racial disparities in SS(D)I applications and awards are statistically insignificant (Figure 2). This suggests that any observed disparities may stem from inequalities along other socioeconomic dimensions.

Except the previously mentioned gender disparity, no statistically significant disparities were detected, suggesting overall equity and effectiveness in SSA's program delivery.

Implications

1. To enhance outreach efforts, it may be useful to implement targeted strategies that meet specific needs of socioeconomically disadvantaged groups.
2. Incorporating data-driven analytical techniques could aid in identifying and addressing disparities using objective measures that are not unduly influenced by subjective decisions. These decisions are often required in the specification of a regression model used for estimating key parameters such as disparities.

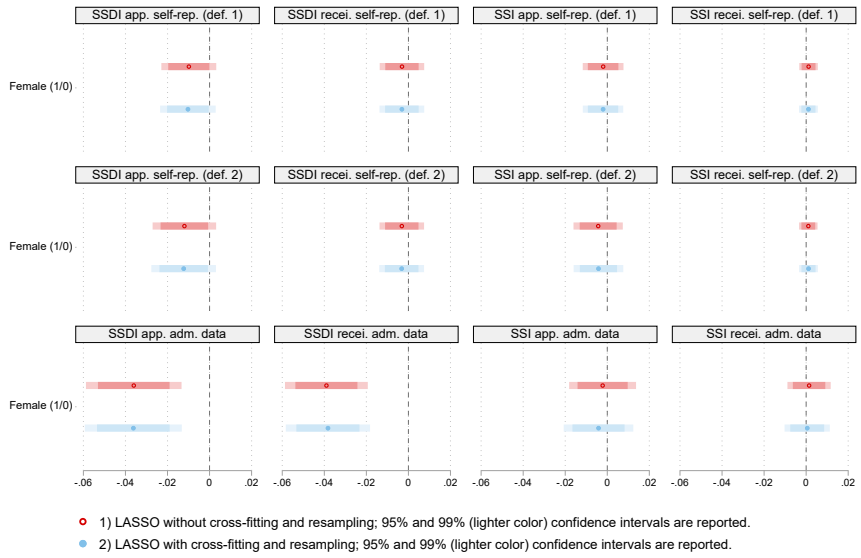

Figure 1: Estimates of Gender Disparity Obtained by the Double/Debiased Machine Learning Estimator

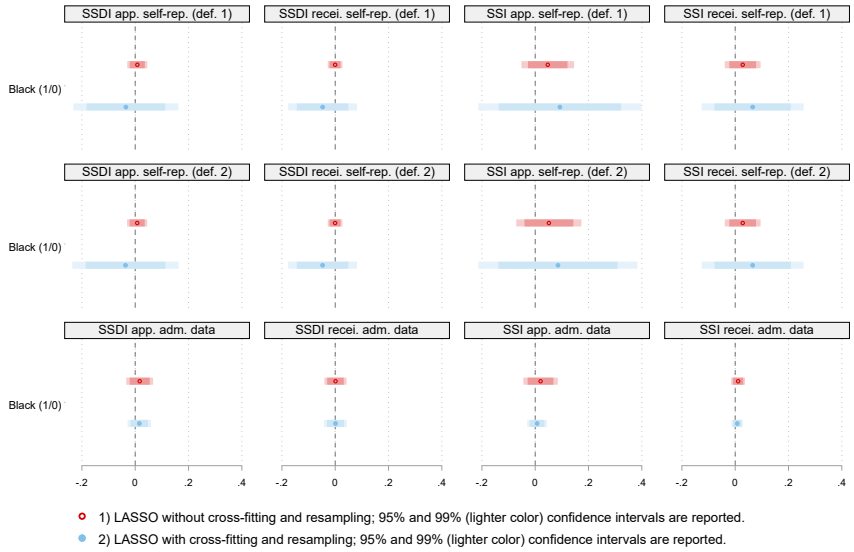

Figure 2: Estimates of Racial Disparity Obtained by the Double/Debiased Machine Learning Estimator

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