

# Intersectionality in Hiring Discrimination: The Case of Sex and Nonbinary Gender Identities in a Range of Low Skill Occupations

By TARYN EAMES\*

Females have historically faced labor market disadvantages, including restricted educational access, occupational segregation, and wage disparities (Goldin 1990). However, recent decades have seen significant progress in reducing such inequality (Goldin 2014). This has led to less hiring discrimination: while females once faced hiring discrimination across most or all occupations, recent research suggests that the direction of sex-based discrimination is heterogeneous and based on occupation-specific factors. In particular, while females are discriminated against in male-dominated occupations and jobs that emphasize stereotypically “masculine” attributes, the opposite is true for males (Riach and Rich 2006; Yavorsky 2019; Cortina, Rodríguez and González 2021).

This literature has historically focused on cisgender people only. However, it is becoming increasingly common for people to identify with a gender different from their sex assigned at birth; this includes nonbinary identities that exist outside the male-female binary. In the United States, an estimated 1.2 million adults identify as nonbinary, with 76% aged 18 to 29 (Wilson and Meyer 2021). Understanding patterns in discrimination against nonbinary people is crucial, as these individuals experience significantly worse labor market outcomes than cisgender individuals (Shannon 2022; Carpenter,

Lee and Nettuno 2022; Carpenter et al. 2024). Further, there is evidence that nonbinary people experience discrimination in the labor market (Eames 2024) and in other contexts (Fumarco et al. 2024).

This paper contributes to the literature by examining how the intersection of sex and nonbinary gender identity influences discrimination across occupations with varying sex compositions. The impact of disclosing “they/them” pronouns in this context is ex-ante ambiguous: such disclosure may alter how employers perceive an applicant’s proximity to male-ness or female-ness. For example, applicants with male-sounding names who disclose nonbinary pronouns might be perceived as “more female,” either due to employer uncertainty about their sex or assumptions of femininity. This perception could mitigate sex-based discrimination in female-dominated occupations or reduce the male advantage in male-dominated ones. As such, nonbinary individuals may face distinct trends in sex-based discrimination relative to cisgender individuals.

I find that in the context of low-skill occupations with varying sex compositions, nonbinary applicants face discrimination patterns resembling those of cisgender applicants with the same name-implied sex. In addition, discrimination appears to be additive: applicants who are both the non-dominant sex and disclose “they/them” pronouns are doubly penalized.

## I. Data

This study uses data from Eames (2024), a correspondence experiment on hiring discrimi-

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nation against nonbinary applicants, where disclosing “they/them” pronouns (listed below an applicant’s name on their resume) is the treatment. From May to October 2023, 7,970 resumes were submitted to job postings across 15 occupations. Occupations are described in Table 1: they were chosen to vary in sex composition and pre-specified as female-dominated, mixed, or male-dominated (Eames 2023).

Table 1—: Occupations

Occupation	% Male	Category	N
Admin Assistant (AA)	6	F Dominated	436
Receptionist (R)	9	F Dominated	598
Nursing Assistant (N)	11	F Dominated	762
Housekeeper (H)	15	F Dominated	458
Cashier (Ca)	28	F Dominated	354
Server (S)	36	Mixed	400
Baker (B)	44	Mixed	186
Cook (Ck)	59	Mixed	692
Retail Salesperson (RS)	62	Mixed	1000
Assembler (A)	62	Mixed	332
Janitor (J)	70	M Dominated	434
Warehouse Worker (W)	80	M Dominated	670
Landscaper (L)	94	M Dominated	426
Truck Driver (T)	95	M Dominated	792
Construction Worker (C)	97	M Dominated	430

Worker sex composition data is from the 2019 American Community Survey. “F Dominated” is female-dominated; “M Dominated” is male-dominated.

Resumes were submitted in pairs to U.S. job postings; in each pair, one resume listed pronouns below the applicant’s name, while the other did not. Paired resumes were randomly generated and matched on key attributes to ensure applicants had the same implied sex and were of similar quality. All applicants had distinctly male- or female-sounding first names.<sup>1</sup> Eames (2024) includes full experimental details.

## II. Empirical Strategy

To estimate discrimination on the basis of applicant sex (signaled via first name) and non-

binary gender identity (signaled via “they/them” pronoun disclosure), I run the following linear probability model:

$$(1) \quad y_{ij} = \gamma_1 NB_i + \gamma_2 [NB_i \cdot FD_j] + \gamma_3 [NB_i \cdot MD_j] \\ + \eta_1 F_i + \eta_2 [F_i \cdot FD_j] + \eta_3 [F_i \cdot MD_j] \\ + X_i' \beta_1 + Z_j' \beta_2 + \varepsilon_{ij}$$

where  $y_{ij}$  equals 1 when applicant  $i$  receives a positive response from job posting  $j$ ,  $F_i$  equals 1 if the applicant is implied female (through name),  $FD_j$  and  $MD_j$  equal 1 if the job posting is in a female-dominated and male-dominated occupation respectively,  $NB_i$  equals 1 if the resume lists “they/them” pronouns,  $X_i$  and  $Z_j$  are vectors of resume and job posting characteristics that may influence baseline employer response, and  $\varepsilon_{ij}$  is an error term.

This specification identifies the independent effects of applicant sex and pronoun disclosure on employer response. It assumes that disclosing nonbinary pronouns influences males and females similarly, regardless of the occupation’s sex composition—an assumption that might not hold, as nonbinary pronoun disclosure could influence perception of the applicant’s proximity to male-ness or female-ness. Additionally, it assumes that occupation sex composition influences discrimination as a step function.

To address this, I semi-parametrically investigate the relationship between positive employer response and the percentage of male workers in an occupation using a two-step approach. First, I estimate the following linear probability model that controls for resume and job posting characteristics but omits the variables of interest:

$$(2) \quad y_{ij} = X_i' \beta_1 + Z_j' \beta_2 + \varepsilon_{ij}$$

I then compute residuals as  $(y_{ij} - \hat{y}_{ij})$ , where  $\hat{y}_{ij}$  is the predicted probability of a positive response from equation (2). Second, I apply Nadaraya-Watson kernel smoothing to estimate group-specific average residuals by occupation

<sup>1</sup>Male: Marcus, Patrick, Joel, Jeremy, Parker, Adrian; female: Lindsay, Jasmine, Hannah, Leah, Marisa, Gina.

sex composition (percent of workers male).<sup>2</sup> This analysis includes four groups: males and females who disclose “they/them” pronouns and who do not disclose any pronouns. These kernel regressions generate non-parametric relationships, allowing the percent of male workers to flexibly and non-linearly affect positive employer response for each group.

### III. Results

Table 2 shows the results of equation (1).

Table 2—: Discrimination Estimates

	Coefficient Estimate
Female	0.046 ** (0.023) [0.001, 0.090]
Female × Female Dominated	0.007 (0.031) [-0.055, 0.068]
Female × Male Dominated	-0.117 *** (0.031) [-0.178, -0.056]
“they/them”	-0.060 *** (0.015) [-0.090, -0.029]
“they/them” × Female Dominated	0.013 (0.022) [-0.030, 0.055]
“they/them” × Male Dominated	0.002 (0.022) [-0.040, 0.044]
Observations	7,970
Resume Controls	✓
Job Controls	✓

This table reports coefficient estimates from equation (1). The dependent variable is an indicator variable which equals 1 if the applicant received a positive employer response. Standard errors are clustered at the job posting level for all regressions, and reported in parentheses. Confidence intervals are reported in square brackets. Stars indicate statistical significance: \*\*\* 1%, \*\* 5%, \* 10% level.

Estimates imply that females are 4.6 percentage points (14%) more likely than males to receive a positive response in female-dominated and mixed occupations. This advantage reverses

in male-dominated occupations, where males are 7.1 percentage points (25%) more likely to receive a positive response. Independently, in all occupations, applicants who disclose “they/them” pronouns are 6.0 percentage points (19%) less likely to receive a positive response than those who do not. Note that by construction, equation (1) assumes independence between sex and nonbinary gender identities.

To investigate intersectionality, Figure 1 presents group-specific non-parametric relationships between an occupation’s sex composition (percent of workers male) and average residual, as estimated using the semi-parametric strategy described above. Residuals above (below) zero indicate that predicted positive employer response is systematically underestimated (overestimated) at a given sex composition level:

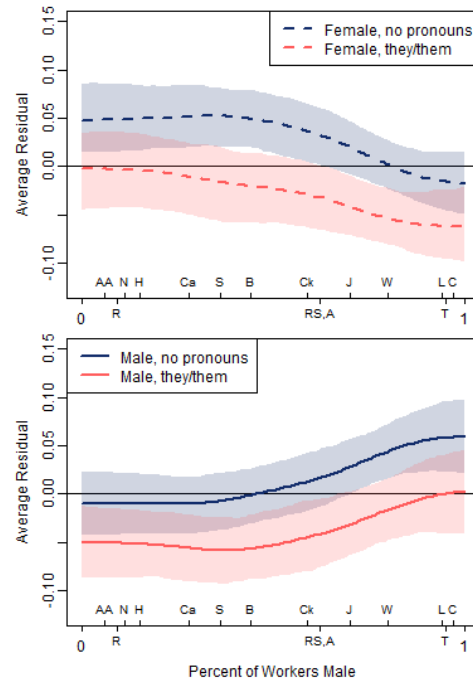


Figure 1. : Average Residuals by Sex and Pronouns

This figure reports group-specific average residuals from equation (2), estimated via Nadaraya-Watson kernel smoothing. Occupation sex compositions are indicated on the x-axis; see Table 1 for occupation names. The kernel-smoothed estimates are generated using a bandwidth of 0.15; results using alternative bandwidths are shown in Figure A1 in the Online Appendix, and are consistent with the above. The shaded areas around the average residual estimates represent 95% confidence intervals, using bootstrapping with 1,000 resampled datasets.

<sup>2</sup>This smoothing is implemented using the `locpoly()` function from the `KernSmooth` package in R (Wand and Jones, 1995).

Consistent with Table 2, these semi-parametric estimates show that females have higher positive employer response rates than males in female-dominated and mixed occupations, but this advantage reverses in male-dominated occupations. Notably, residual trends for applicants with female-sounding names are similar whether or not they disclose nonbinary pronouns—as are the trends for those with male-sounding names. This suggests that disclosing “they/them” pronouns does not alter the relationship between an applicant’s name-implied sex and the occupation’s sex composition. Instead, disclosure appears to impose a consistent penalty across all compositions (i.e., the same male and female curves are shifted down when an applicant discloses “they/them” pronouns).

Figure 2 presents the same non-parametric relationships, organized differently:

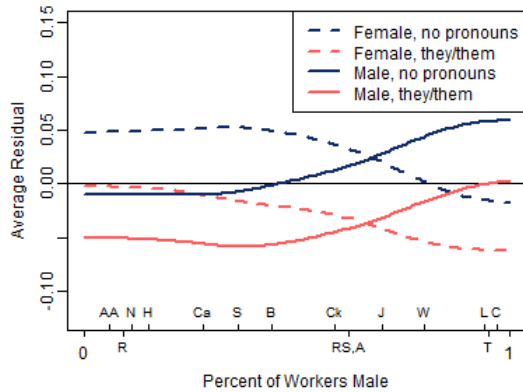


Figure 2. : Average Residuals by Sex and Pronouns

This figure reports group-specific average residuals from Equation (2), estimated via Nadaraya-Watson kernel smoothing based on the percent of workers male in an occupation. Occupation abbreviations are listed on the x-axis; see Table 1 for occupation names. The kernel-smoothed estimates are generated using a bandwidth of 0.15; results using alternative bandwidths are shown in the [Figure A2 in the Online Appendix](#), and are consistent with the above.

This demonstrates the apparent existence of double discrimination: applicants are penalized first for being the non-dominant sex (given an occupation’s sex composition) and again for disclosing nonbinary “they/them” pronouns.

Applicants who are *both* the non-dominant sex and disclose nonbinary pronouns are doubly penalized. For example, in male-dominated occupations, females face a baseline penalty, achieving response rates similar to males who disclose nonbinary pronouns. If these applicants additionally disclose “they/them” pronouns, they receive a second penalty associated with disclosure. Similarly, in female-dominated occupations, males face baseline penalties and are doubly penalized when additionally disclosing nonbinary pronouns.

Figures 1 and 2 support the parametric assumptions of equation (1). Hence, Table 2 shows that applicants with female-sounding names who apply to male-dominated occupations and disclose “they/them” pronouns face positive employer response rates that are 13.1 percentage points (45%) lower than males who do not disclose pronouns. This penalty is 10.6 percentage points (33%) for males who disclose “they/them” pronouns and apply to female-dominated occupations. These results are consistent with those obtained by running equation (1) while including applicants who disclose “they/them” pronouns only—shown in Table 3.

Table 3—: Discrimination Estimates  
(Nonbinary Applicants Only)

	Estimate
	0.042 ** (0.021) [0.000, 0.084]
Female	-0.111 *** (0.035) [-0.179, -0.043]
Female × Male Dominated	
Observations	2,695
Resume Controls	✓
Job Controls	✓

This table reports coefficient estimates from equation (1), for applicants who disclose “they/them” pronouns only. The dependent variable equals 1 if the applicant received a positive employer response. Standard errors are clustered at the job posting level for all regressions, and reported in parentheses. Confidence intervals are reported in square brackets. Stars indicate statistical significance: \*\*\* 1%, \*\* 5%, \* 10% level.

#### IV. Discussion

This study provides new evidence on how intersectionality in terms of sex and nonbinary gender identity influences hiring discrimination. I find that, in the context of low skill occupations, applicants who disclose “they/them” pronouns experience trends in hiring discrimination similar to presumably cisgender applicants with the same name-implied sex. That is, nonbinary applicants with female-sounding names are discriminated against in male-dominated occupations, and vice-versa for those with male-sounding names in female-dominated occupations. Additionally, these applicants face a consistent penalty associated with disclosing “they/them” pronouns across all occupations. This penalty appears to be independent and additive, leading to double discrimination. This may suggest that disclosing nonbinary “they/them” pronouns does not inform employer expectations of proximity to male-ness or female-ness (although this is not the only explanation for the observed discrimination patterns).

These findings highlight the importance of considering intersectionality when estimating discrimination. In this study, I find that discrimination accumulates additively; however, this is not always or even typically the case (Fumarco et al. 2024; Lahey and Oxley 2021). People contain multitudes, and acknowledging this complexity is essential to fully understand and address discrimination.

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