How Does the Intersection of Sex and Nonbinary Gender Identity Affect Hiring Discrimination? Evidence from a Correspondence Field Experiment

By TARYN EAMES*

Women have historically faced myriad disadvantages in the labor market, though recent decades have seen a reduction in such inequality (Goldin 2014). In hiring, recent research suggests that, rather than always disadvantaging women, the direction of sex-based discrimination is now based on occupation-specific factors. In particular, while women face discrimination in male-dominated occupations, the opposite is true for men (e.g., Yavorsky 2019).

Existing research focuses on cisgender individuals, despite a growing number identifying as a gender different from their sex assigned at birth. Among gender diverse individuals, nonbinary identities are the most common and fastest growing (Brown 2022). Further, this group faces worse labor market outcomes (Carpenter et al. 2024) and discrimination in hiring (Eames 2024) and other contexts (Fumarco et al. 2024).

This paper contributes to the literature by examining how the intersection of sex and nonbinary gender identity affects hiring discrimination. First, I ask whether male and female nonbinary applicants face different levels of discrimination, building on evidence that LGBT people assigned male at birth often face greater labor market disadvantages, including same-sedx wage gaps (Drydakis 2021), hiring discrimination (Flage 2020), and earnings changes post-transition (Carpenter, Goodman and Lee 2024).

Overall differences may mask occupation-specific heterogeneity. Thus, I also ask: do patterns of sex-based discrimination differ between presumably cisgender applicants and those who disclose "they/them" pronouns? The answer is ex-ante ambiguous: such disclosure may influence perceptions of an applicant's proximity to male-ness or female-ness. For instance, nonbinary pronouns disclosed by male-named applicants might lead employers to perceive them as "more female," either due to uncertainty about their sex or assumptions of femininity. This could mitigate sex-based discrimination in female-dominated occupations and vice versa.

I find no difference in employer response between male and female nonbinary applicants. Given occupational sex composition, I find that nonbinary applicants face discrimination patterns resembling cisgender applicants with the same name-implied sex. I also find evidence of double discrimination: applicants who are both the non-dominant sex and also disclose "they/them" pronouns are doubly penalized.

I. Data

This study uses data from Eames (2024), a correspondence field experiment on hiring discrimination against nonbinary applicants where identity is signaled by listing "they/them" pronouns on their resume. Resumes were submitted to job postings across 15 occupations described in Table 1, which vary in sex composition.

Resumes were submitted in pairs to U.S. job postings; in each pair, one resume listed pronouns below the applicant's name and the other

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did not. Paired resumes were randomly generated and matched on key attributes to ensure applicants had the same implied sex (signaled via first name) and were of similar quality.

Table 1—: Occupations

Occupation	% Male	Category	N
Admin Assistant	6	F Dominated	365
Receptionist	9	F Dominated	500
Nursing Assistant	11	F Dominated	642
Housekeeper	15	F Dominated	380
Cashier	28	F Dominated	316
Server	36	Mixed	332
Baker	44	Mixed	159
Cook	59	Mixed	573
Retail Salesperson	62	Mixed	834
Assembler	62	Mixed	271
Janitor	70	M Dominated	379
Warehouse Worker	80	M Dominated	552
Landscaper	94	M Dominated	358
Truck Driver	95	M Dominated	663
Construction Worker	97	M Dominated	356

Worker sex composition data is from the 2019 American Community Survey. Occupation categories were pre-specified—"F Dominated" is female-dominated; "M Dominated" is male-dominated.

II. Empirical Strategy

To estimate whether nonbinary applicants with female- and male-sounding names experience different rates of discrimination, I run the following linear probability model:

$$(1) \quad y_{iocj} = \lambda F_i + \gamma_1 NB_i + \gamma_2 [F_i \cdot NB_i] + X_i'\beta_1 + Z_j'\beta_2 + \eta_o + \delta_c + \varepsilon_{iocj}$$

where y_{iocj} equals one when applicant i in occupation o and city c receives a positive response from job posting j, NB_i equals one if the applicant discloses "they/them" pronouns, F_i equals one if the applicant has a female-sounding name, X_i and Z_j are vectors of resume and job posting characteristics (see the Appendix), and (η_o, δ_c) are occupation and city fixed effects. Coefficient γ_2 represents the difference in discrimination against nonbinary applicants with female- versus male-sounding names.

To sex-based discrimination differs against presumed cisgender and nonbinary applicants, I run the following linear probability model separately for those who do and do not disclose "they/them" pronouns:

$$(2) \quad y_{iocj} = \lambda_1 F_i + \lambda_2 [F_i \cdot MD_j] + X_i'\beta_1 + Z_j'\beta_2 + \eta_o + \delta_c + \varepsilon_{iocj}$$

where MD_j equals one for male-dominated occupations. Coefficient λ_1 represents the impact of having a female-sounding name (versus a male-sounding name) in female-dominated and mixed occupations; λ_2 reflects the impact in male-dominated occupations. Alternative approaches are reported in the Appendix .[1]

Finally, to assess if applicants are doubly penalized when they are both the non-dominant sex and also disclose "they/them" pronouns, I run the following linear probability model:

$$(3) \quad y_{iocj} = \xi_1 NB_i + \xi_2 ND_i + \xi_3 [NB_i \cdot ND_i] + X_i'\beta_1 + Z_j'\beta_2 + \eta_o + \delta_c + \varepsilon_{iocj}$$

where ND_i equals one when an applicant is the non-dominant sex.[2]

III. Results

Table 2 presents the results of equation (1), and shows that male and female nonbinary applicants face discrimination—I can rule out the possibility that either group avoids hiring discrimination. While precision is limited, results suggest minimal differences in the extent of discrimination faced by male and female nonbinary applicants, with an estimated 0.5 percentage point difference between them.

[1] The Appendix presents two alternatives: one interacting (F_i, NB_i) with FD_j (a female-dominated indicator), and another pooling observations with a triple interaction (F_i, NB_i, MD_j).

[2] Female in male-dominated, male in mixed and female-dominated occupations.

Table 2—: Sex-Based Differences in Hiring Discrimination Against Nonbinary Applicants

	Coefficient Estimate
Female	0.009 (0.015) [-0.020, 0.038]
"they/them"	-0.052 *** (0.011) [-0.074, -0.031]
"they/them" × Female	-0.005 (0.016) [-0.036, 0.026]
Observations	6,680

Note: This table reports coefficient estimates from equation (1), where the dependent variable equals one if the applicant received a positive employer response. Coefficient estimates for control variables are not shown. Standard errors are clustered at the job posting level and reported in parentheses. Confidence intervals are reported in square brackets. Stars indicate statistical significance: *** 1%, ** 5%, * 10% level.

Figure 1 illustrates these results, displaying raw positive response rates for each group. Nonbinary applicants receive fewer responses than cisgender peers, with no clear difference between males and females in either group.

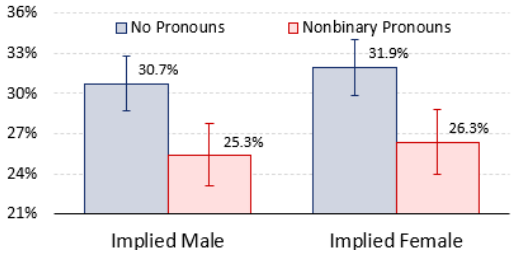

Figure 1. : Positive Employer Response Rates (by Sex and Pronoun Disclosure)

Note: This figure reports positive employer response rates for males and females who disclose no pronouns versus nonbinary pronouns, across male-dominated, mixed, and female-dominated occupation types. Whiskers show the 95% confidence interval associated with the true positive employer response rate for each group, calculated using the normal approximation to the binomial distribution.

Table 3 presents the results of equation (2). Consistent with existing research, presumably cisgender applicants with female-sounding names are 5.4 percentage points (18%) more likely than those with male-sounding names to receive positive responses in female-dominated and mixed occupations. This advantage reverses in male-dominated occupations, where they are 7.9 percentage points (24%) less likely to receive positive responses.

These estimates closely align with those for applicants who disclose "they/them" pronouns, particularly when expressed proportionally rather than in percentage points. Applicants with female-sounding names are 4.1 percentage points (17%) more likely than those with male-sounding names to receive positive responses in female-dominated and mixed occupations, but 6.9 percentage points (26%) less likely in male-dominated occupations. Thus, when it comes to occupation sex composition, nonbinary applicants face discrimination in the same direction as cisgender applicants with the same name-implied sex. Although the statistical power is limited, estimated magnitudes are nearly identical. These findings are consistent with alternative specifications detailed in the Appendix, including models which pool observations and include a triple interaction term.

Table 3—: Patterns in Sex-Based Discrimination

	Coefficient Estimate
Panel A: No pronouns disclosed	
Female	0.054 *** (0.018) [0.018, 0.089]
Female × Male Dominated	-0.133 *** (0.030) [-0.191, -0.074]
Observations	3,985
Panel B: "they/them" pronouns disclosed	
Female	0.041 * (0.021) [0.000, 0.083]
Female × Male Dominated	-0.110 *** (0.035) [-0.178, -0.043]
Observations	2,695

Note: This table reports coefficient estimates from equation (2), where the dependent variable equals one if the applicant received a positive employer response. Coefficient estimates for control variables are not shown. Standard errors are clustered at the job posting level and reported in parentheses. Confidence intervals are reported in square brackets. Stars indicate statistical significance: *** 1%, ** 5%, * 10% level.

Figure 2 illustrates these results, displaying raw positive response rates for each group. As reported in Table 3, this Figure indicates that nonbinary applicants appear to experience the same direction of discrimination given occupation category.

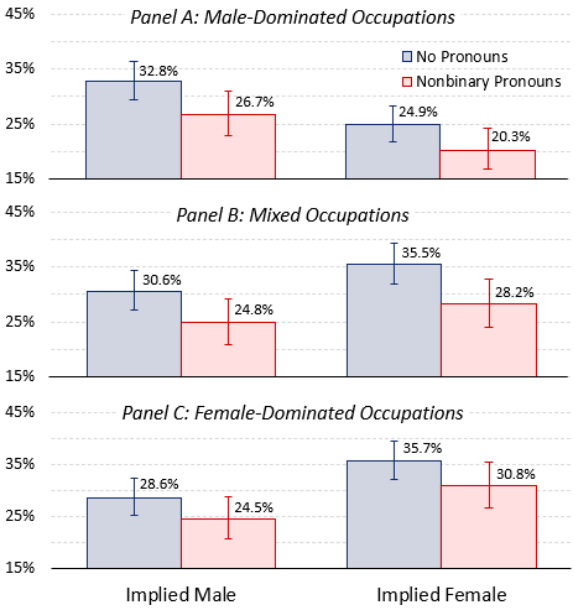

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Figure 2 also suggests the existence of double discrimination: applicants appear to face one penalty for being the non-dominant sex and another for disclosing nonbinary "they/them" pronouns, across all occupation categories.

This is more formally explored in Table 4 which presents the results of equation (3). When applicants are minoritized once, they receive a penalty of 6.7 percentage points (19%) for being the non-dominant sex or a penalty of 6.2 percentage points (18%) penalty for disclosing "they/them" pronouns. When minoritized twice (i.e., when an applicant is both the non-dominant sex and also discloses "they/them" pronouns), discrimination grows to 11.4 percentage points (33%). This is a sizable increase, and statistically larger than either individual penalty, as confirmed by a Wald test evaluating linear combinations of coefficients.[3] As such, applicants who are minoritized on the basis of both sex and nonbinary gender identity are doubly discriminated against.

Table 4—: Double Discrimination

	Coefficient Estimate
Non-Dominant Sex	-0.067 ***
	(0.015)
	[-0.096, -0.038]
"they/them"	-0.062 ***
	(0.012)
	[-0.085, -0.039]
Non-Dominant Sex × "they/them"	0.015
	(0.016)
	[-0.016, 0.046]
Observations	6,680

Note: This table reports coefficient estimates from equation (4), where the dependent variable equals one if the applicant received a positive employer response. Standard errors are clustered at the job posting level and reported in parentheses. Confidence intervals are reported in square brackets. Stars indicate statistical significance: *** 1%, ** 5%, * 10% level.

IV. Discussion

This study provides the first evidence of how the intersection of sex and nonbinary gender identity influences hiring discrimination, and patterns across occupations with varied sex compositions. I find that male and female nonbinary applicants experience discrimination of a similar magnitude. In addition, applicants who disclose "they/them" pronouns experience trends in hiring discrimination similar to presumably cisgender applicants with the same name-implied sex:

[3]Applicants who are minoritized twice face an estimated response rate that is -0.114 percentage points lower than non-minoritized applicantes (standard error 0.016; confidence interval [-0.145, -0.083]). This is -0.047 percentage points lower (standard error 0.011; confidence interval [-0.068, -0.026]) than those minoritized by non-dominany sex alone, and -0.052 percentage points lower (standard error 0.017; confidence interval [-0.085, -0.019]) than those minoritized by disclosing "they/them" pronouns alone.

those with female-sounding names are discriminated against in male-dominated occupations, and vice versa. Across all occupations, applicants face a consistent penalty associated with disclosing "they/them" pronouns. This penalty appears to be independent of implied sex and additive, leading to double discrimination. This may suggest that disclosing "they/them" pronouns does not strongly alter employer perceptions of proximity to male-ness or female-ness (although this is not the only explanation for the observed discrimination patterns).

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