

Public Perceptions of Discrimination at Large Firms

Patrick Kline, UC Berkeley
Evan K. Rose, University of Chicago
Christopher Walters, UC Berkeley

NBER Summer Institute
Labor Studies

July 27, 2026

Is discriminatory conduct an open secret?

Recent work finds that discriminatory conduct varies substantially across firms and industries (Miller, 2017; Gerard et al., 2021; Kline, Rose, Walters, 2022, 2024)

While public attitudes towards racial and gender inequality have been well documented (Alesina, Ferroni, Stantcheva, 2021; Bursztyn et al, 2024), little research to date on whether workers hold beliefs about the conduct of particular firms

Disseminating information about discrimination could reduce economic burden *if* job seekers don't know which employers discriminate

Is discriminatory conduct an open secret?

Recent work finds that discriminatory conduct varies substantially across firms and industries (Miller, 2017; Gerard et al., 2021; Kline, Rose, Walters, 2022, 2024)

While public attitudes towards racial and gender inequality have been well documented (Alesina, Ferroni, Stantcheva, 2021; Bursztyn et al, 2024), little research to date on whether workers hold beliefs about the conduct of particular firms

Disseminating information about discrimination could reduce economic burden *if* job seekers don't know which employers discriminate

Are employer biases an open secret?

- ▶ Do Americans believe that large companies are biased? Which ones and how?
- ▶ How do these beliefs relate to experimental evidence from resume studies?

This project

Survey of beliefs regarding firm recruiting practices

- ▶ Elicit beliefs about 164 large firms—a superset of those studied in KRW (2022)
- ▶ Questions about firm desirability, selectivity, and manager discretion (Mocanu, 2022; Agan et al, 2023)
- ▶ Questions about treatment of distinctive names at both contact and hiring stage, as well as more general discrimination
- ▶ Examine heterogeneity across respondent demographics, employment status, and reported effects of perceived discrimination on search behavior
- ▶ Connect beliefs to experimental contact gaps from KRW (2022)

Key findings

Discrimination looms large: A large share of workers, especially Black workers, report delaying applications because of fear of discrimination

Firms have measurable reputations: There is meaningful dispersion in average beliefs about firm race, gender, and age biases; average beliefs are remarkably similar across respondent groups

Only gender beliefs predict audit evidence: Perceptions of gender bias strongly correlated with experimental gender contact gaps, but race connection is weaker

Selectivity is key race confound: Respondents connect selectivity and lack of hiring discretion with racial bias, a heuristic contradicted by the audit evidence

The survey

Survey design

Contracted w/ Qualtrics to survey respondents about their beliefs

- ▶ Survey took place June-August 2023
- ▶ Used both “convenience” and probability samples
- ▶ Oversample of Black respondents and job seekers

Survey elicited beliefs about practices at a random set of 5 firms

- ▶ All consideration sets include one of three well known “anchor” firms: Home Depot, Coca-Cola, or Kentucky Fried Chicken (KFC).
- ▶ Remaining 4 firms sampled w/o replacement from remaining list of 161 Fortune 500 employers: union of KRW (2022) firms w/ Fortune 100.

Survey introduction

In this survey, we're interested in understanding people's perceptions of entry-level jobs. Some examples of entry-level jobs include cashier, sales associate, delivery driver, and customer service representative.

Prior experience in entry-level jobs

▶ question text

Survey introduction

In this survey, we're interested in understanding people's perceptions of entry-level jobs. Some examples of entry-level jobs include cashier, sales associate, delivery driver, and customer service representative.

Prior experience in entry-level jobs

▶ question text

In this section of the survey, we'd like to understand your beliefs about the hiring practices of five U.S. companies.

Selectivity and desirability of entry-level jobs (e.g., “the likelihood that an applicant would be able to successfully pass an interview”)

▶ question text

Names arm (50% of sample)

*Now suppose two equally qualified applicants apply to these same five companies. As before, the applicants are both **high-school graduates with 1-2 years of relevant experience**, but the **applications use different names**. Each name is either distinctively white or black and either distinctively male or female.*

Here are some examples of such names:

*Distinctively **black** names: Lawanda and Reginald*

*Distinctively **white** names: Allison and Edgar*

*Distinctively **female** names: Charlotte and Ebony*

*Distinctively **male** names: Matthew and Tremayne*

Names arm (50% of sample)

*Now suppose two equally qualified applicants apply to these same five companies. As before, the applicants are both **high-school graduates with 1-2 years of relevant experience**, but the **applications use different names**. Each name is either distinctively white or black and either distinctively male or female.*

Here are some examples of such names:

*Distinctively **black** names: Lawanda and Reginald*

*Distinctively **white** names: Allison and Edgar*

*Distinctively **female** names: Charlotte and Ebony*

*Distinctively **male** names: Matthew and Tremayne*

*For each company, please indicate how much more likely you believe the company is to **contact a job applicant** with a distinctively **[black/white]** name than an applicant with a distinctively **[white/black]** name.*

Names arm (50% of sample)

*Now suppose two equally qualified applicants apply to these same five companies. As before, the applicants are both **high-school graduates with 1-2 years of relevant experience**, but the **applications use different names**. Each name is either distinctively white or black and either distinctively male or female.*

Here are some examples of such names:

*Distinctively **black** names: Lawanda and Reginald*

*Distinctively **white** names: Allison and Edgar*

*Distinctively **female** names: Charlotte and Ebony*

*Distinctively **male** names: Matthew and Tremayne*

*For each company, please indicate how much more likely you believe the company is to **hire a job applicant** with a distinctively **[black/white]** name than an applicant with a distinctively **[white/black]** name.*

Names arm (50% of sample)

*Now suppose two equally qualified applicants apply to these same five companies. As before, the applicants are both **high-school graduates with 1-2 years of relevant experience**, but the **applications use different names**. Each name is either *distinctively white* or *black* and either *distinctively male* or *female*.*

Here are some examples of such names:

*Distinctively **black** names: Lawanda and Reginald*

*Distinctively **white** names: Allison and Edgar*

*Distinctively **female** names: Charlotte and Ebony*

*Distinctively **male** names: Matthew and Tremayne*

*For each company, please indicate how much more likely you believe the company is to **hire a job applicant** with a distinctively **[black/white]** name than an applicant with a distinctively **[white/black]** name.*

5-point scale ranging from “much less likely” to “much more likely,” along with a “Don’t know / prefer not to answer” option

Names arm (50% of sample)

*Now suppose two equally qualified applicants apply to these same five companies. As before, the applicants are both **high-school graduates with 1-2 years of relevant experience**, but the **applications use different names**. Each name is either **distinctively white** or **black** and either **distinctively male** or **female**.*

Here are some examples of such names:

*Distinctively **black** names: Lawanda and Reginald*

*Distinctively **white** names: Allison and Edgar*

*Distinctively **female** names: Charlotte and Ebony*

*Distinctively **male** names: Matthew and Tremayne*

*For each company, please indicate how much more likely you believe the company is to **hire a job applicant** with a distinctively **[black/white]** name than an applicant with a distinctively **[white/black]** name.*

Randomly permute order (e.g., black/white vs. white/black) to assess influence of base category framing

Names arm (50% of sample)

*Now suppose two equally qualified applicants apply to these same five companies. As before, the applicants are both **high-school graduates with 1-2 years of relevant experience**, but the **applications use different names**. Each name is either **distinctively white** or **black** and either **distinctively male** or **female**.*

Here are some examples of such names:

*Distinctively **black** names: Lawanda and Reginald*

*Distinctively **white** names: Allison and Edgar*

*Distinctively **female** names: Charlotte and Ebony*

*Distinctively **male** names: Matthew and Tremayne*

*For each company, please indicate how much more likely you believe the company is to **hire a job applicant** with a distinctively **[black/white]** name than an applicant with a distinctively **[white/black]** name.*

Ask about race and gender distinctive names in random order

Names arm: Example question formatting

Now suppose two equally qualified applicants apply to these same five companies.

As before, the applicants are both **high-school graduates with 1-2 years of relevant experience**, but the **applications use different names**. Each name is either distinctively white or black and either distinctively male or female.

Here are some examples of such names:

Distinctively **black** names: Lawanda and Antwan

Distinctively **white** names: Amanda and Brett

Distinctively **female** names: Rebecca and Latonya

Distinctively **male** names: Finn and Lamar

For each company, please indicate how much more likely you believe the company is to **contact a job applicant** with a distinctively **black** name than an applicant with a distinctively white name.

[illegible]

Conduct arm (50% of sample)

*Please indicate how likely you think it is that each company below would **discriminate against [black/white]** job seekers.*

Conduct arm (50% of sample)

*Please indicate how likely you think it is that each company below would **discriminate against [black/white]** job seekers.*

5-point scale ranging from “very unlikely” to “very likely,” along with a “Don’t know / prefer not to answer” option

Randomly permute framing of question (e.g., against white vs. against black), directly elicits beliefs about direction of bias

Ask about race, gender, and age in random order

Conduct arm: Example question formatting

Please indicate how likely you think it is that each company below would **discriminate against black** job-seekers.

	Very likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Very unlikely	Don't know/ prefer not to answer
Dr Pepper Snapple Group	☐	☐	☐	☐	☐	☐
Allstate	☐	☐	☐	☐	☐	☐
Stanley Black & Decker (DeWalt, Lenox, Porter Cable)	☐	☐	☐	☐	☐	☐
Performance Food Group (Vistar, PFG Customized)	☐	☐	☐	☐	☐	☐
KFC	☐	☐	☐	☐	☐	☐

Survey Completion
0%  100%



Survey conclusion

Fear of discrimination

Have you ever put off applying for a job out of fear of discrimination?

Discretion in hiring

*At most companies, hiring decisions are made by individual managers. However, companies differ in the amount of oversight placed on these hiring decisions. For each company, please indicate how likely you think it is that managers can **hire their preferred candidate without input** from colleagues or superiors.*

Information sources

▶ question text

Attention check

▶ question text

Summary Stats

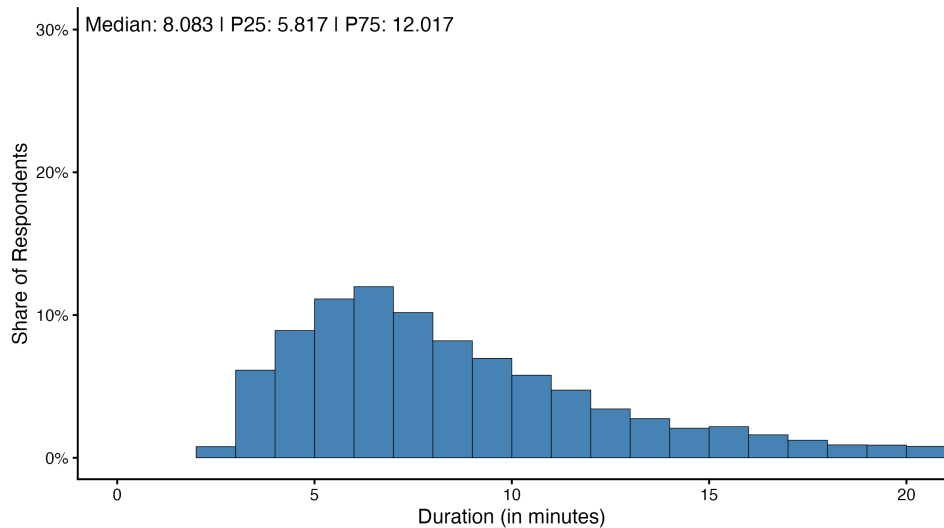
Summary statistics: Demographics and education

	All		Probability		Convenience	
	Count	Share	Count	Share	Count	Share
Demographics						
Female	4406	0.676	1317	0.554	3089	0.746
Black	3217	0.494	1068	0.449	2149	0.519
White	2714	0.417	1069	0.45	1645	0.397
Hispanic	694	0.107	275	0.116	419	0.101
[18,25)	832	0.128	177	0.074	655	0.158
[25,40)	2023	0.311	734	0.309	1289	0.311
[40,65)	2558	0.393	959	0.404	1599	0.386
Education						
High School Diploma	1620	0.249	415	0.175	1205	0.291
Some College / Associate Degree	2725	0.418	1008	0.424	1717	0.415
Bachelor's / Graduate Degree	1897	0.291	891	0.375	1006	0.243
N. Of Respondents	6515		2376		4139	

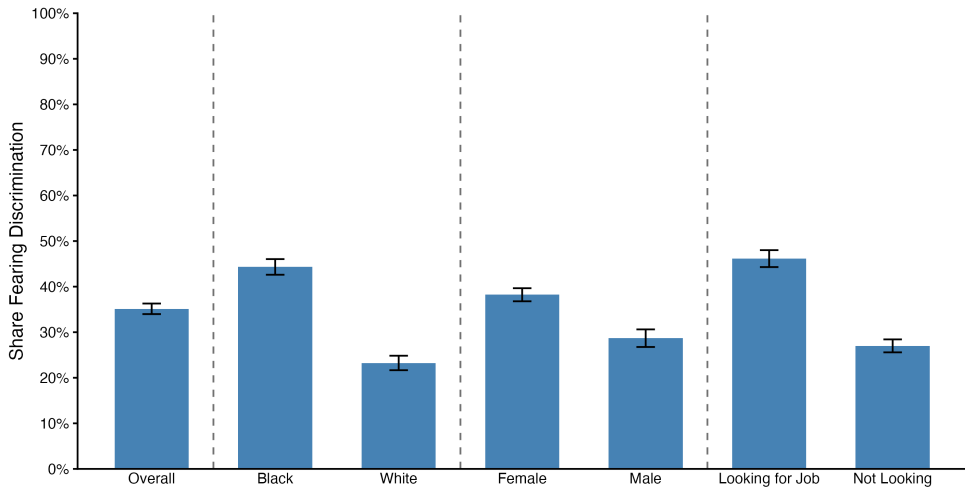
Summary statistics: Work and income

	All		Probability		Convenience	
	Count	Share	Count	Share	Count	Share
Employment						
Working As Paid Employee	3233	0.496	1369	0.576	1864	0.45
Working Self-employed	578	0.089	168	0.071	410	0.099
Not Working: Looking For Work	795	0.122	143	0.06	652	0.158
Not Working: Retired	993	0.152	425	0.179	568	0.137
Not Working: Other	916	0.141	271	0.114	645	0.156
Income						
Less Than \$5,000	431	0.066	67	0.028	364	0.088
\$5,000 To \$29,999	1784	0.274	467	0.197	1317	0.318
\$30,000 To \$59,999	2048	0.314	672	0.283	1376	0.332
\$60,000 To \$99,999	1297	0.199	588	0.247	709	0.171
\$100,000 Or More	955	0.147	582	0.245	373	0.09
N. Of Respondents	6515		2376		4139	

Median response time ~ 8 mins

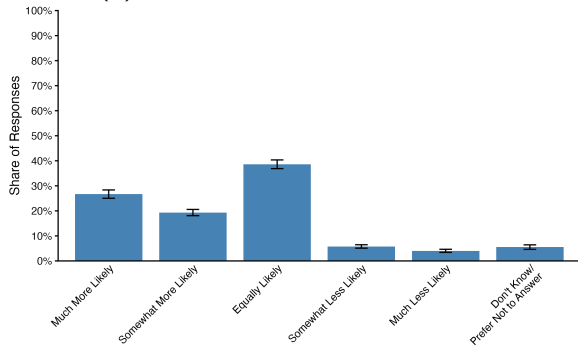


Fear of discrimination prevalent

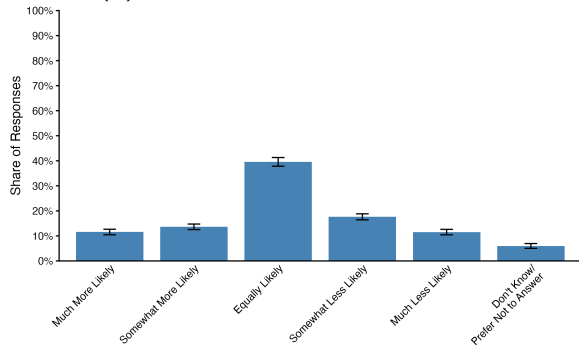


Names arm: Respondents expect contact bias in favor of white names

(a) Favor white vs. black names

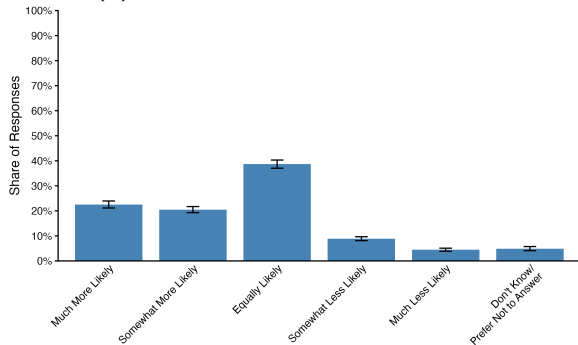


(b) Favor black vs. white names

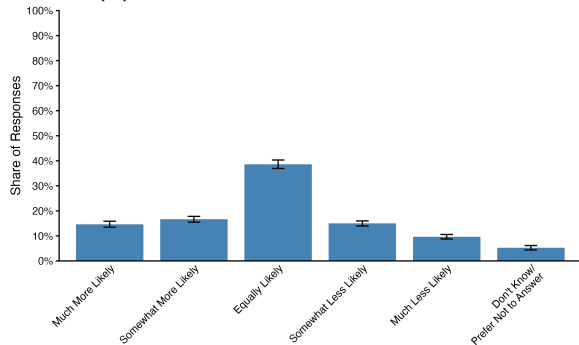


Names arm: Similar patterns for male vs. female names

(a) Favor male vs. female names

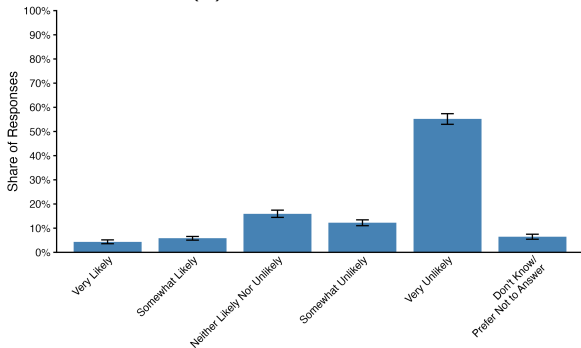


(b) Favor female vs. male names

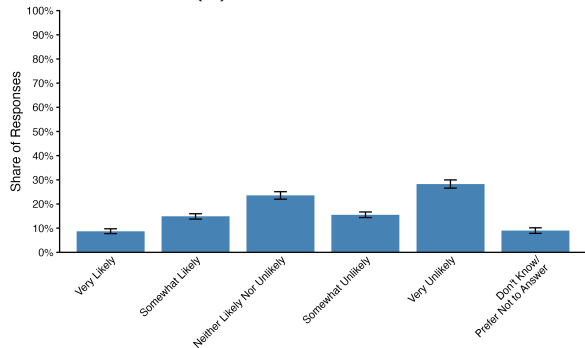


Conduct arm: More discrimination against black than white job-seekers

(a) Against white

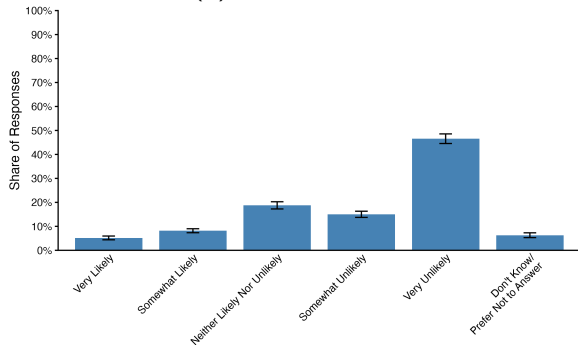


(b) Against black

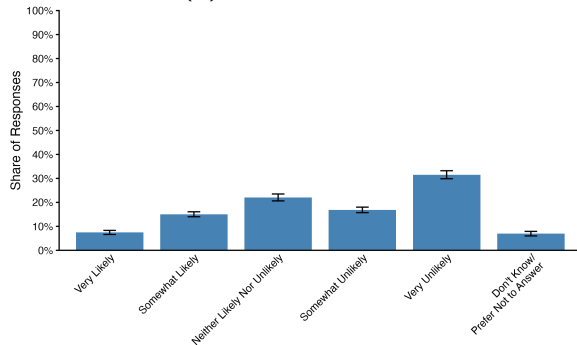


Conduct arm: More discrimination against women anticipated

(a) Against male



(b) Against female



Aggregating beliefs

From cardinal to ordinal

Unclear how to interpret cardinal information in terms like “much more likely” or “somewhat likely”

- ▶ Respondents may grade on different scales

Two approaches:

- ▶ Likert scores: simple averages of respondent ratings on 1–5 scale
- ▶ Borda scores: rank-ordered comparisons only

Likert scores are transparent and easy to interpret; Borda scores “difference out” respondent-specific grading scales

In practice, the two approaches yield similar results

Likert score basics

Each respondent i rates firm j on a 5-point Likert scale: $r_{ij} \in \{1, 2, 3, 4, 5\}$

The *Likert score* for firm j is the population average rating:

$$L_j = \mathbb{E}[r_{ij} \mid j \in C_i]$$

where C_i is respondent i 's choice set

Estimated by the sample mean $\hat{L}_j = \frac{1}{N_j} \sum_{i:j \in C_i} r_{ij}$

Likert score basics

Each respondent i rates firm j on a 5-point Likert scale: $r_{ij} \in \{1, 2, 3, 4, 5\}$

The *Likert score* for firm j is the population average rating:

$$L_j = \mathbb{E}[r_{ij} \mid j \in C_i]$$

where C_i is respondent i 's choice set

Estimated by the sample mean $\hat{L}_j = \frac{1}{N_j} \sum_{i:j \in C_i} r_{ij}$

Simple, transparent, and easy to interpret

- ▶ But relies on cardinality of Likert scale
- ▶ Sensitive to differences in grading scales / framing effects

Borda basics

Write $j \succ_i k$ if respondent i ranks j strictly above k and $j \sim_i k$ if they are tied

Define $w_{ijk} = 1\{j \succ_i k\} + \frac{1}{2}1\{j \sim_i k\}$

Borda score for firm j is the sample average of w_{ijk} :

$$\hat{B}_j = \left(\sum_{i:j \in C_i} \sum_{k \in C_i \setminus \{j\}} w_{ijk} \right) / \left(\sum_{i:j \in C_i} (|C_i| - 1) \right)$$

where $C_i \subset \{1, \dots, J\}$ is respondent i 's choice set (in paper: adjust for anchors)

Borda basics

Write $j \succ_i k$ if respondent i ranks j strictly above k and $j \sim_i k$ if they are tied

Define $w_{ijk} = 1\{j \succ_i k\} + \frac{1}{2}1\{j \sim_i k\}$

Borda score for firm j is the sample average of w_{ijk} :

$$\hat{B}_j = \left(\sum_{i: j \in C_i} \sum_{k \in C_i \setminus \{j\}} w_{ijk} \right) / \left(\sum_{i: j \in C_i} (|C_i| - 1) \right)$$

where $C_i \subset \{1, \dots, J\}$ is respondent i 's choice set (in paper: adjust for anchors)

Scale-free way to aggregate across respondents

- ▶ Recovers underlying ordering if probabilistic notation of transitivity holds [▶ details](#)
- ▶ But recovers only relative information

Estimation and pooling

Several variants on each discrimination question due to random frames

- ▶ Turns out that firm beliefs are tightly correlated across framings [▶ details](#)
- ▶ Exception: race conduct questions, where “against white” has no signal

Estimation and pooling

Several variants on each discrimination question due to random frames

- ▶ Turns out that firm beliefs are tightly correlated across framings [▶ details](#)
- ▶ Exception: race conduct questions, where “against white” has no signal

⇒ pool randomized framings of each question, except for race conduct

Estimation and pooling

Several variants on each discrimination question due to random frames

- ▶ Turns out that firm beliefs are tightly correlated across framings [▶ details](#)
- ▶ Exception: race conduct questions, where “against white” has no signal

⇒ pool randomized framings of each question, except for race conduct

Beliefs in names and conduct arm also turn out to be tightly correlated ⇒ construct an outcome pooling both arms too

Estimation and pooling

Several variants on each discrimination question due to random frames

- ▶ Turns out that firm beliefs are tightly correlated across framings [▶ details](#)
- ▶ Exception: race conduct questions, where “against white” has no signal

⇒ pool randomized framings of each question, except for race conduct

Beliefs in names and conduct arm also turn out to be tightly correlated ⇒ construct an outcome pooling both arms too

Robustness exercises explore unpooled results

Estimation and pooling

Several variants on each discrimination question due to random frames

- ▶ Turns out that firm beliefs are tightly correlated across framings [▶ details](#)
- ▶ Exception: race conduct questions, where “against white” has no signal

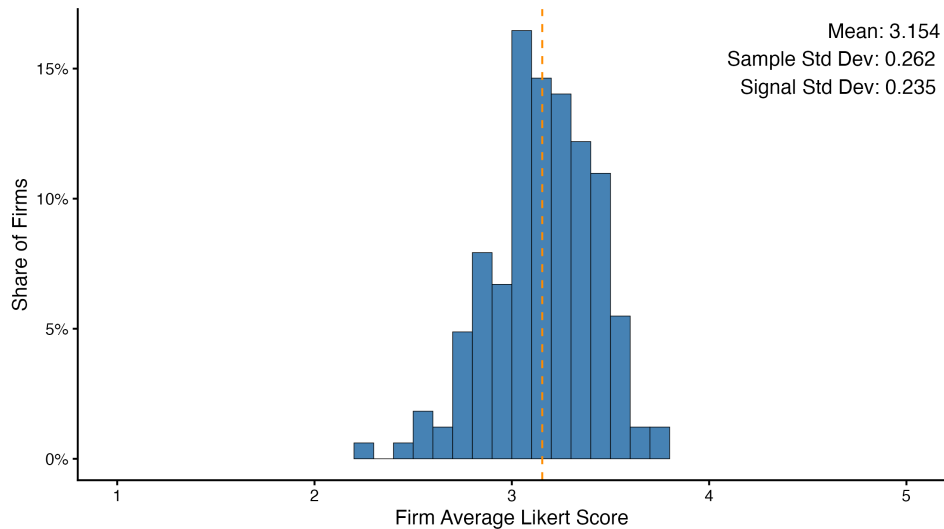
⇒ pool randomized framings of each question, except for race conduct

Beliefs in names and conduct arm also turn out to be tightly correlated ⇒ construct an outcome pooling both arms too

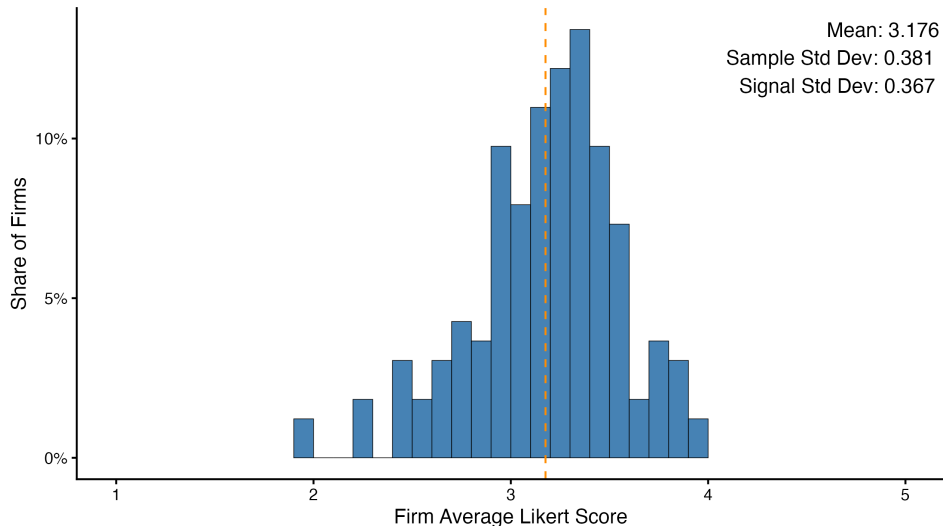
Robustness exercises explore unpooled results

“Don’t know / prefer not to answer” responses dropped ($\approx$ 2-3% of responses)

Distribution of beliefs about firm's race discrimination



Distribution of beliefs about firm's gender discrimination (pooled measure)



Means and variances of beliefs across outcomes (pooled measure)

Outcome	Sample	Likert			Borda		
	Responses	Mean	Sample Std Dev	Signal Std Dev	Mean	Sample Std Dev	Signal Std Dev
Discrimination Black (Conduct)	7,743	2.661	0.319	0.240	0.503	0.079	0.067
Discrimination Black (Contact)	15,179	3.407	0.250	0.214	0.498	0.071	0.064
Discrimination Black (Hire)	15,167	3.451	0.241	0.204	0.498	0.067	0.061
Discrimination Black (Pooled)	22,922	3.154	0.262	0.235	0.500	0.070	0.066
Discrimination Female (Conduct)	15,245	3.170	0.396	0.362	0.502	0.086	0.082
Discrimination Female (Contact)	15,232	3.181	0.398	0.377	0.503	0.100	0.095
Discrimination Female (Hire)	15,193	3.201	0.416	0.396	0.503	0.101	0.097
Discrimination Female (Pooled)	30,477	3.176	0.381	0.367	0.503	0.090	0.088
Discrimination Older (Conduct)	14,594	3.253	0.248	0.195	0.498	0.057	0.047
Firm Desirability	30,966	3.879	0.142	0.106	0.499	0.038	0.032
Firm Selectivity	30,806	2.485	0.595	0.588	0.502	0.141	0.139
Manager Discretion	30,298	3.221	0.377	0.362	0.500	0.087	0.085

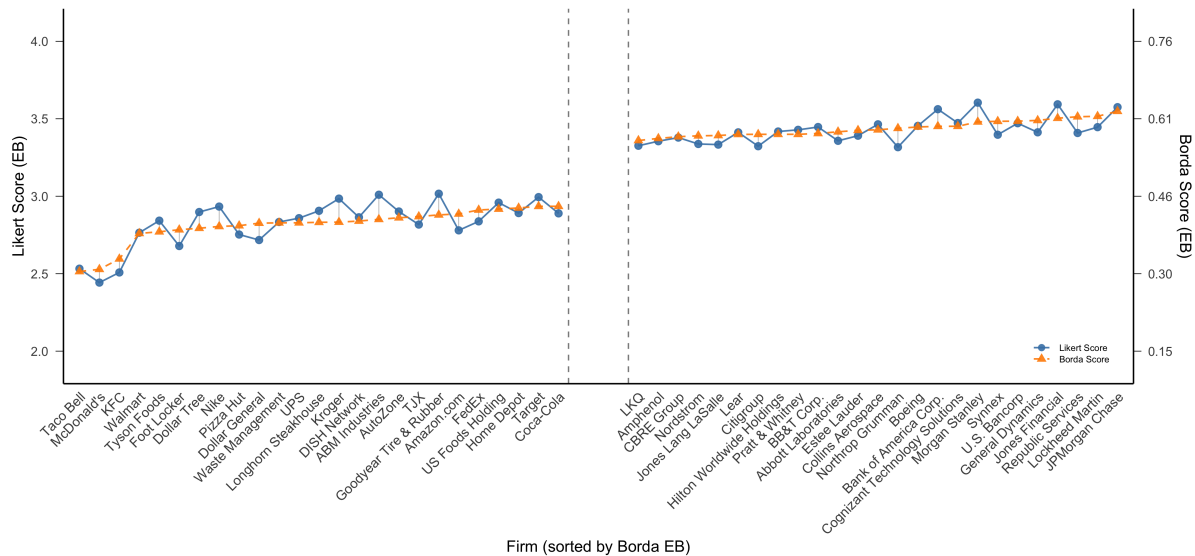
Means and variances of beliefs across outcomes (pooled measure)

Outcome	Sample	Likert			Borda		
	Responses	Mean	Sample Std Dev	Signal Std Dev	Mean	Sample Std Dev	Signal Std Dev
Discrimination Black (Conduct)	7,743	2.661	0.319	0.240	0.503	0.079	0.067
Discrimination Black (Contact)	15,179	3.407	0.250	0.214	0.498	0.071	0.064
Discrimination Black (Hire)	15,167	3.451	0.241	0.204	0.498	0.067	0.061
Discrimination Black (Pooled)	22,922	3.154	0.262	0.235	0.500	0.070	0.066
Discrimination Female (Conduct)	15,245	3.170	0.396	0.362	0.502	0.086	0.082
Discrimination Female (Contact)	15,232	3.181	0.398	0.377	0.503	0.100	0.095
Discrimination Female (Hire)	15,193	3.201	0.416	0.396	0.503	0.101	0.097
Discrimination Female (Pooled)	30,477	3.176	0.381	0.367	0.503	0.090	0.088
Discrimination Older (Conduct)	14,594	3.253	0.248	0.195	0.498	0.057	0.047
Firm Desirability	30,966	3.879	0.142	0.106	0.499	0.038	0.032
Firm Selectivity	30,806	2.485	0.595	0.588	0.502	0.141	0.139
Manager Discretion	30,298	3.221	0.377	0.362	0.500	0.087	0.085

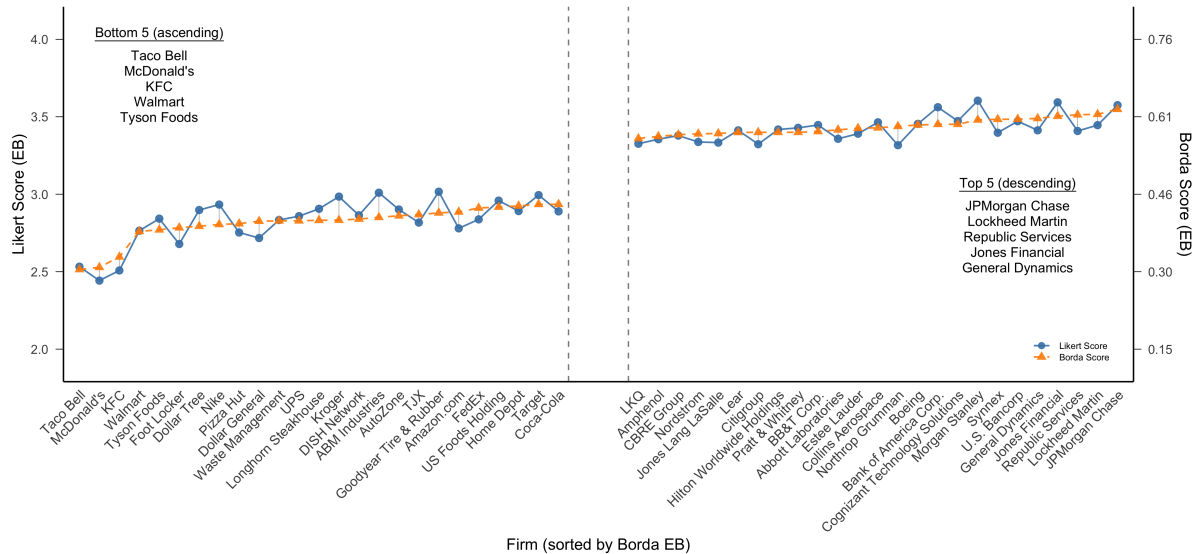
Means and variances of beliefs across outcomes (pooled measure)

Outcome	Sample	Likert			Borda		
	Responses	Mean	Sample Std Dev	Signal Std Dev	Mean	Sample Std Dev	Signal Std Dev
Discrimination Black (Conduct)	7,743	2.661	0.319	0.240	0.503	0.079	0.067
Discrimination Black (Contact)	15,179	3.407	0.250	0.214	0.498	0.071	0.064
Discrimination Black (Hire)	15,167	3.451	0.241	0.204	0.498	0.067	0.061
Discrimination Black (Pooled)	22,922	3.154	0.262	0.235	0.500	0.070	0.066
Discrimination Female (Conduct)	15,245	3.170	0.396	0.362	0.502	0.086	0.082
Discrimination Female (Contact)	15,232	3.181	0.398	0.377	0.503	0.100	0.095
Discrimination Female (Hire)	15,193	3.201	0.416	0.396	0.503	0.101	0.097
Discrimination Female (Pooled)	30,477	3.176	0.381	0.367	0.503	0.090	0.088
Discrimination Older (Conduct)	14,594	3.253	0.248	0.195	0.498	0.057	0.047
Firm Desirability	30,966	3.879	0.142	0.106	0.499	0.038	0.032
Firm Selectivity	30,806	2.485	0.595	0.588	0.502	0.141	0.139
Manager Discretion	30,298	3.221	0.377	0.362	0.500	0.087	0.085

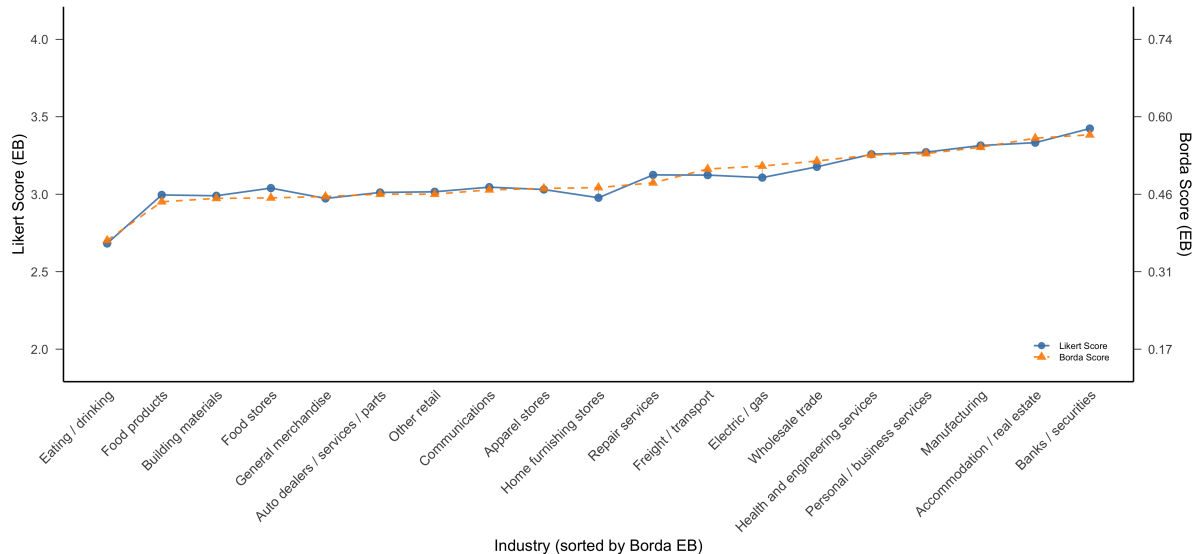
Top/Bottom 25: More likely to favor white (pooled)



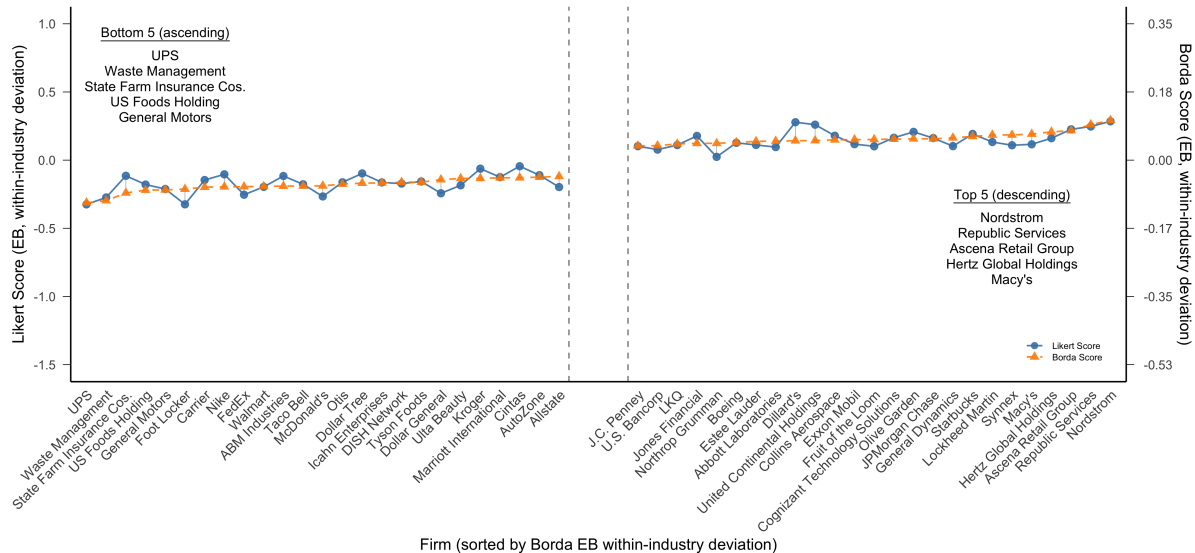
Top/Bottom 25: More likely to favor white (pooled)



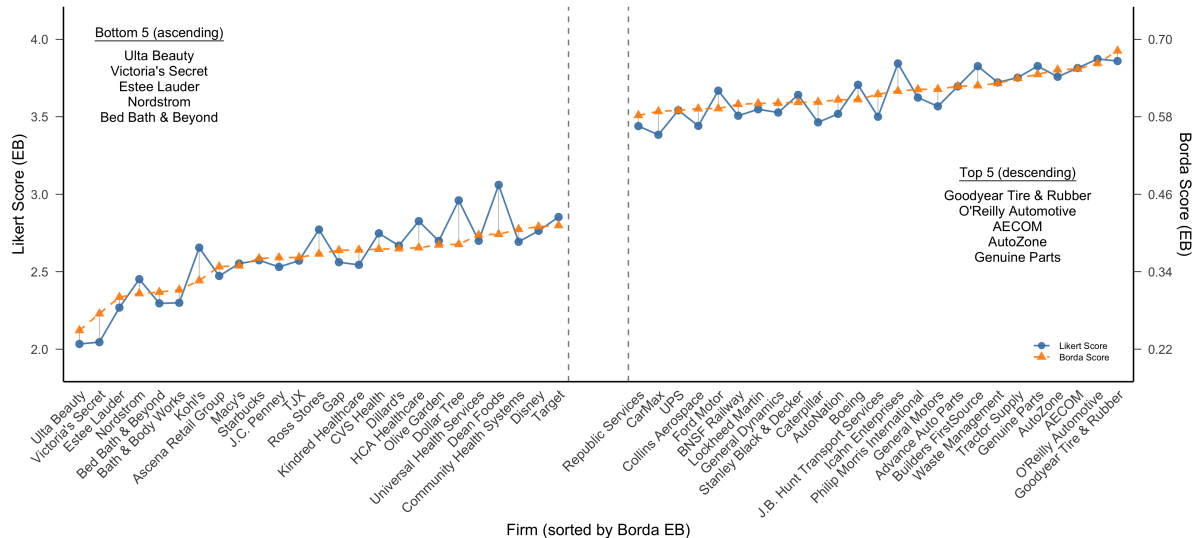
Industry averages: More likely to favor whites (pooled)



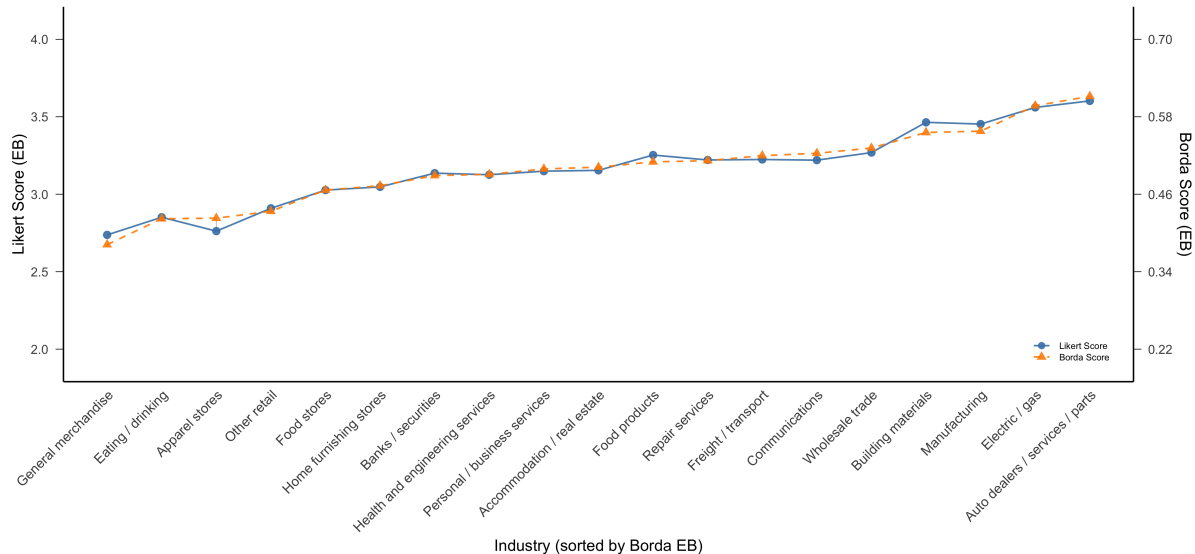
Industry deviations: More likely to favor whites (pooled)



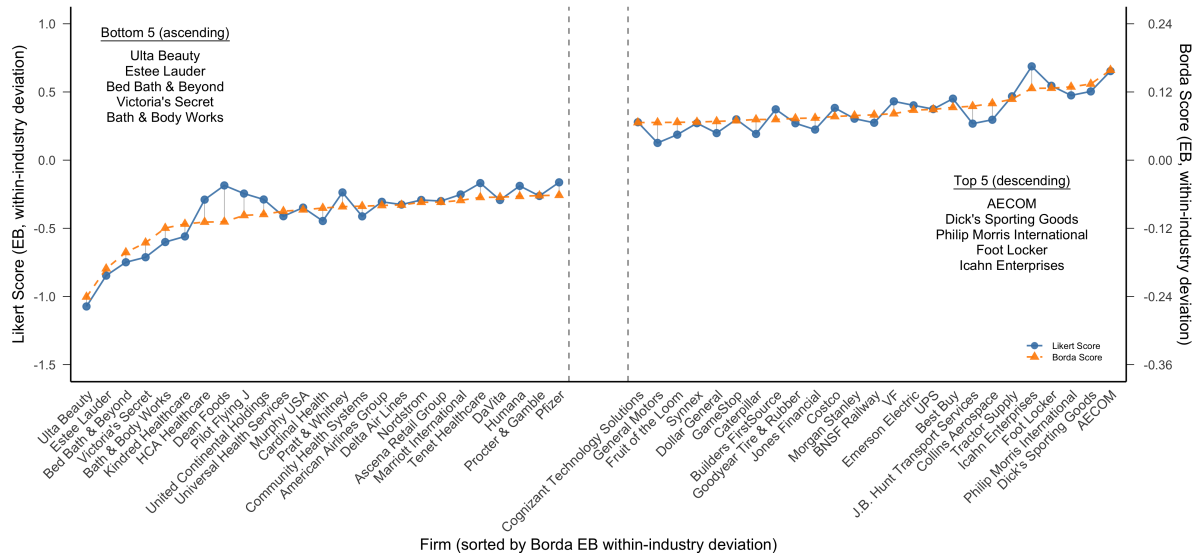
T/B 25: More likely to favor men (pooled)



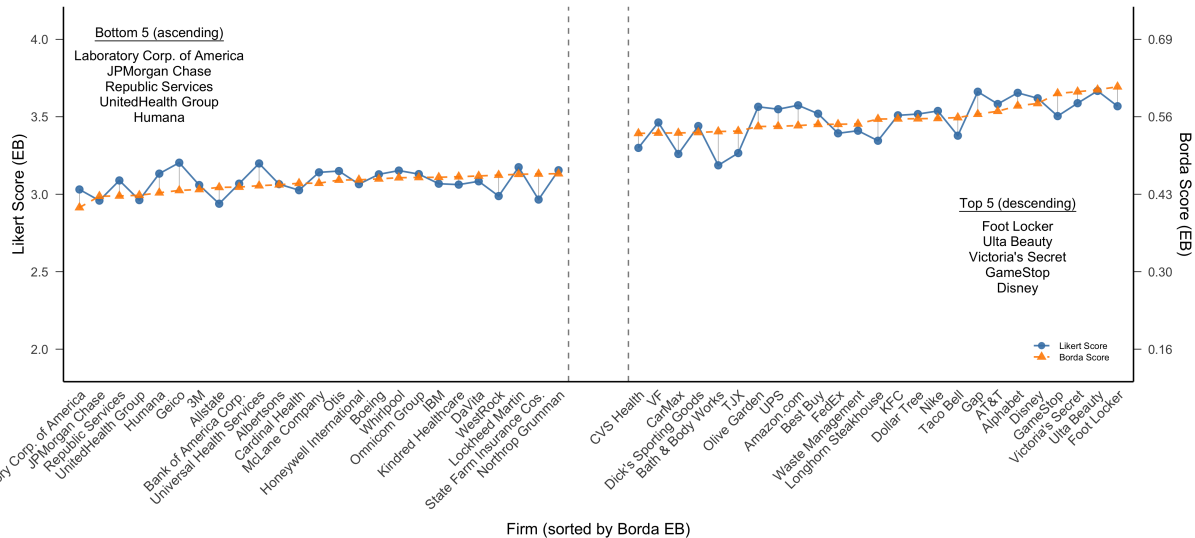
Industry avgs: More likely to favor men (pooled)



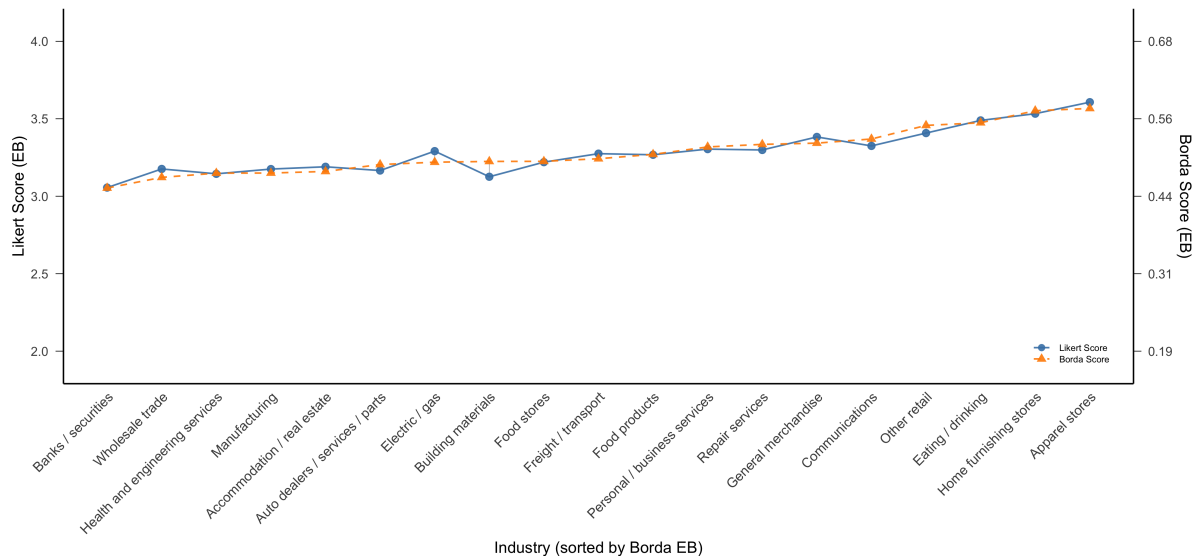
Industry devs: More likely to favor men (pooled)



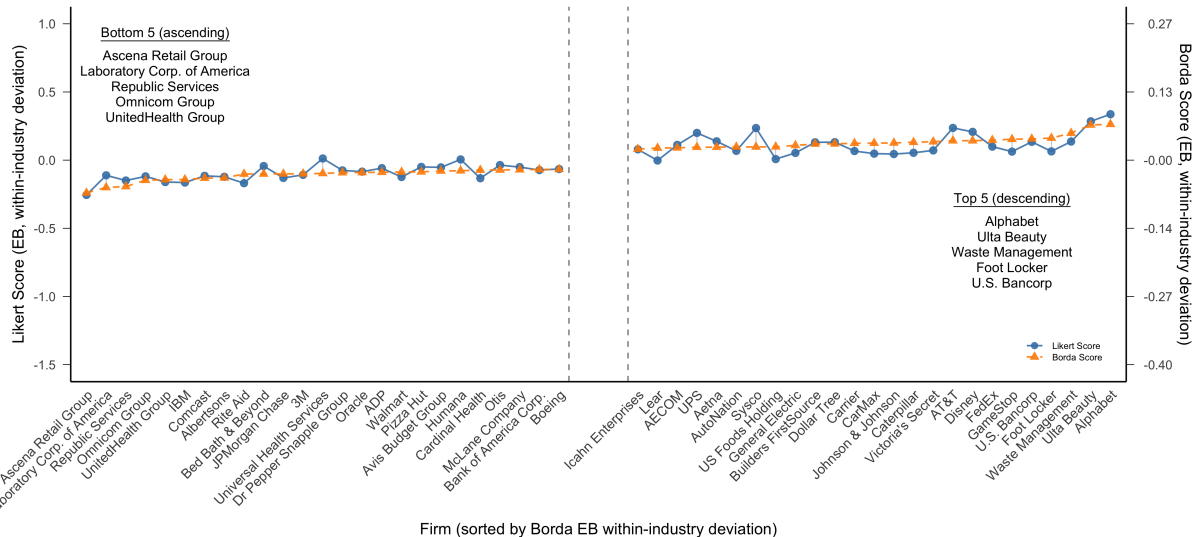
T/B 25: More likely to favor young workers (conduct)



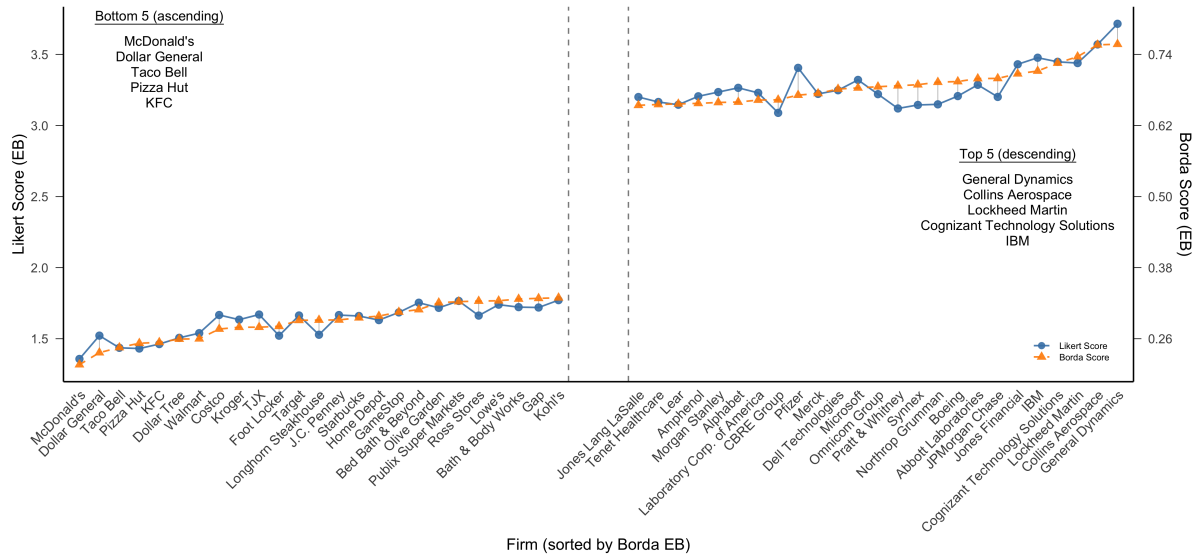
Industry avgs: More likely to favor young workers (conduct)



Industry devs: More likely to favor young workers (conduct)



T/B 25: Firm Selectivity



Correlating beliefs

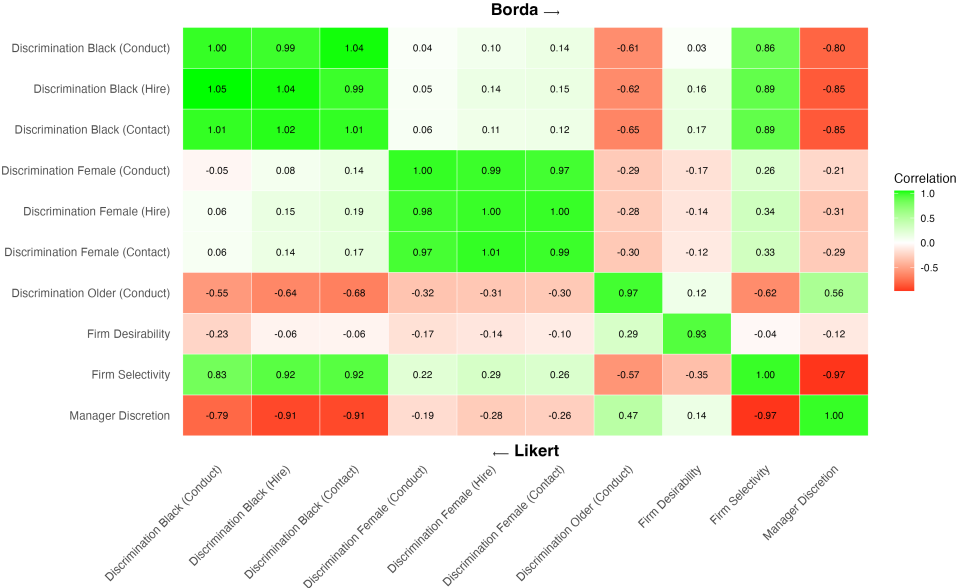
Correlating beliefs across questions and respondents

How do beliefs about different forms of discrimination correlate?

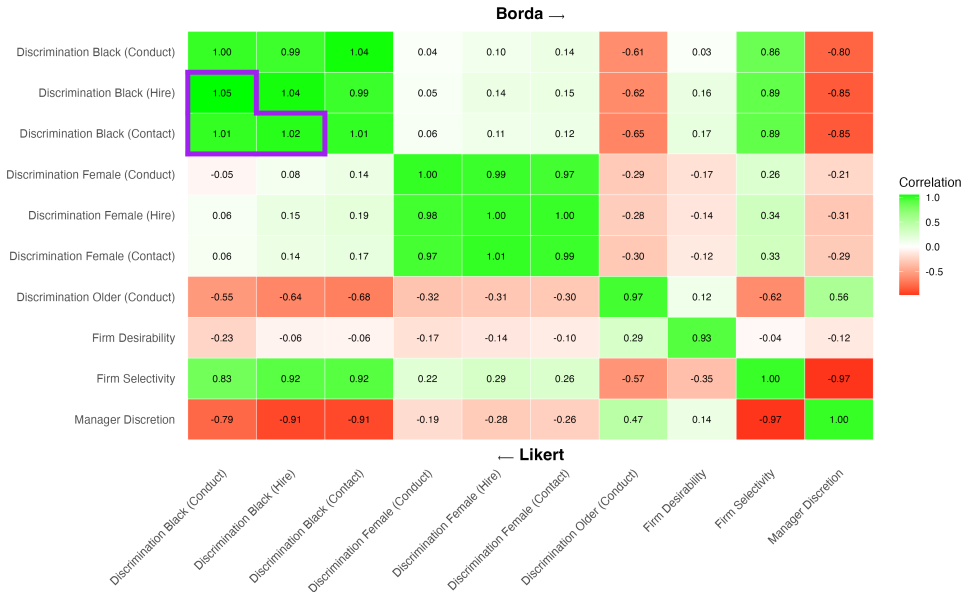
How do beliefs correlate across groups of respondents?

Compute signal correlations across questions / groups accounting for sampling error, as well as within-question across Likert / Borda measures

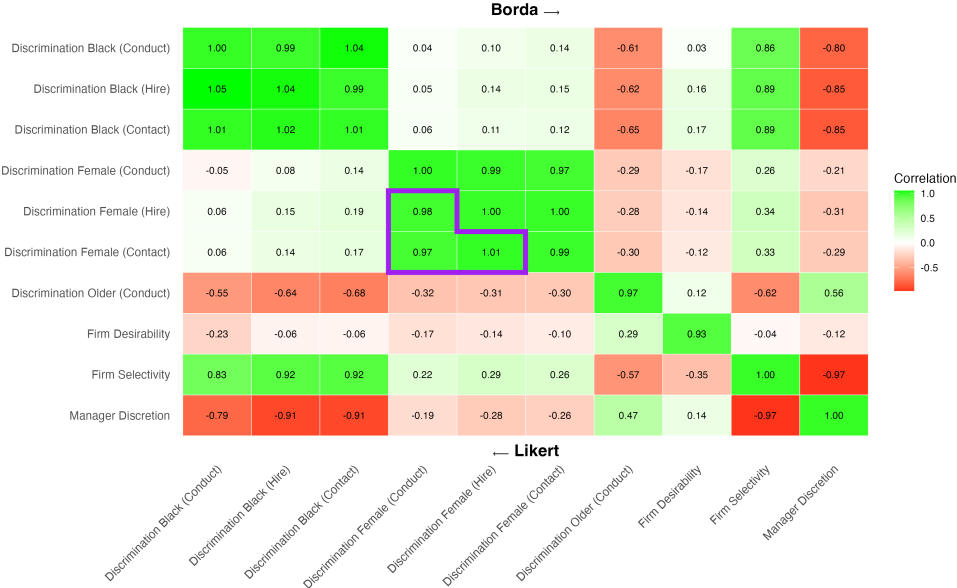
Signal correlation estimates



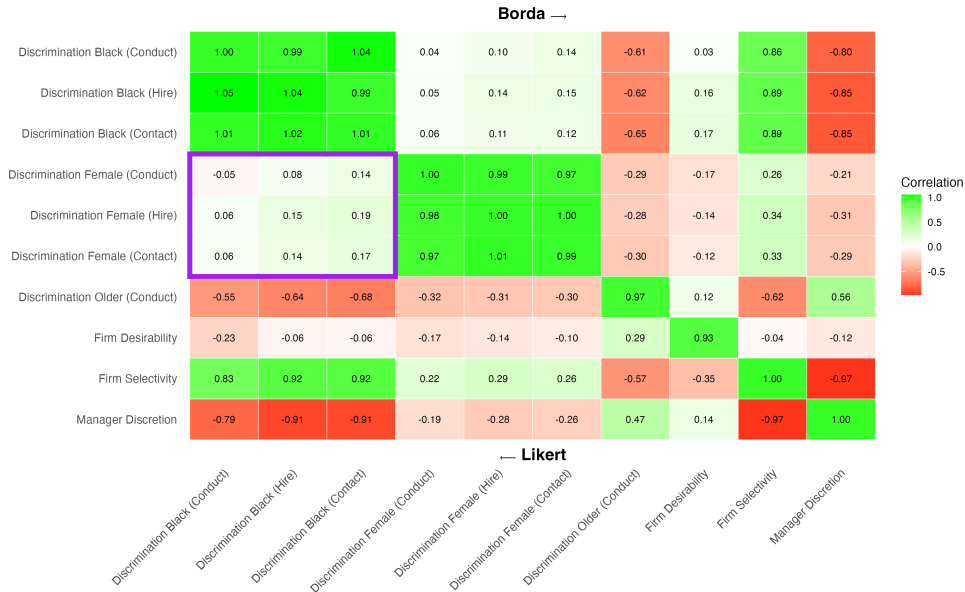
Racial bias questions highly correlated



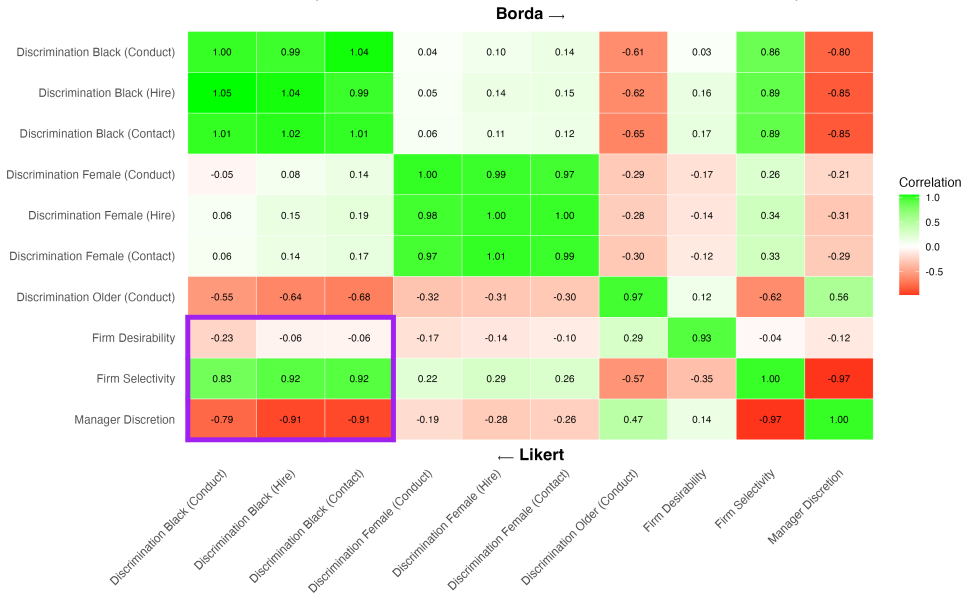
Gender bias questions highly correlated



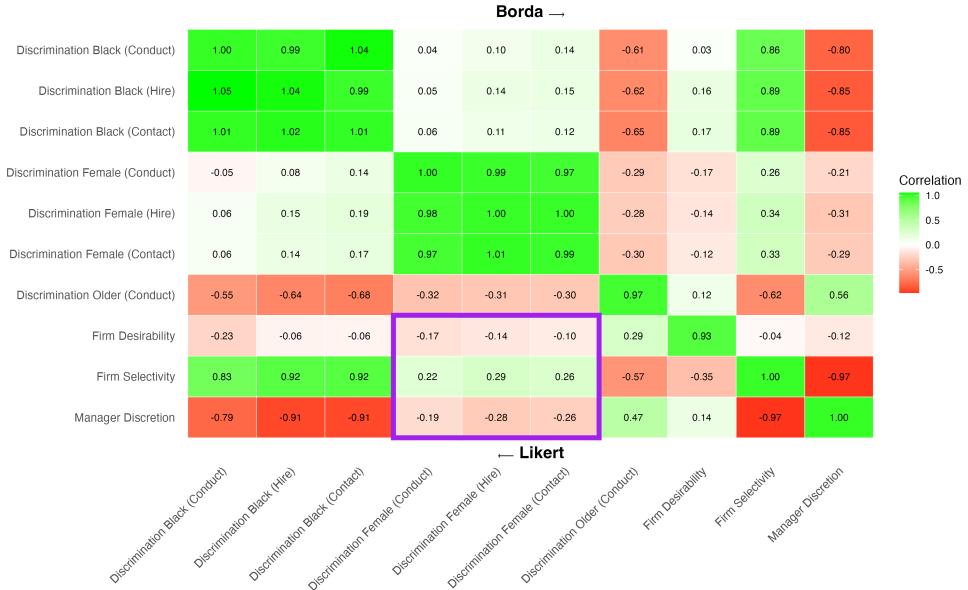
Mild correlation between race and gender biases



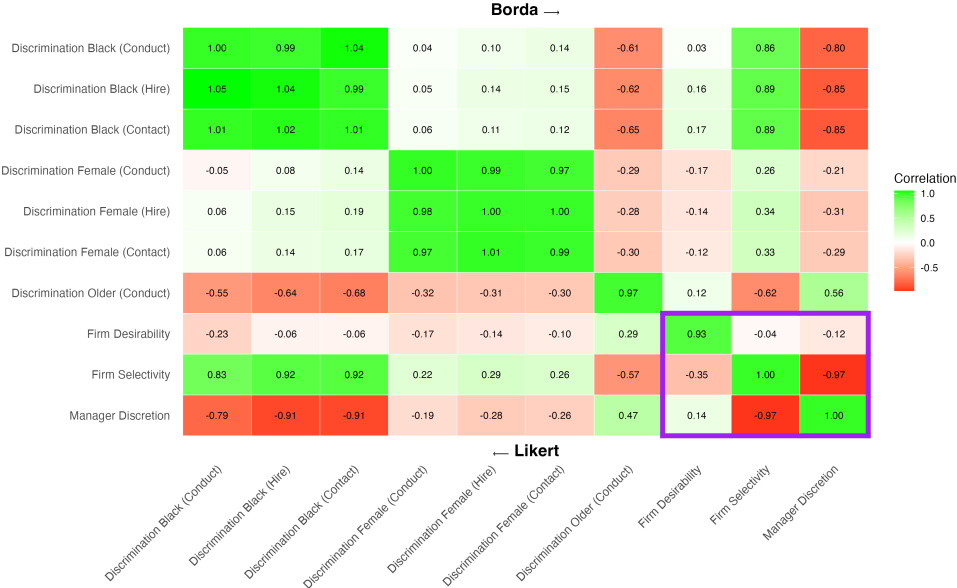
Racial bias strongly corr w/ selectivity; strong neg corr w/ discretion



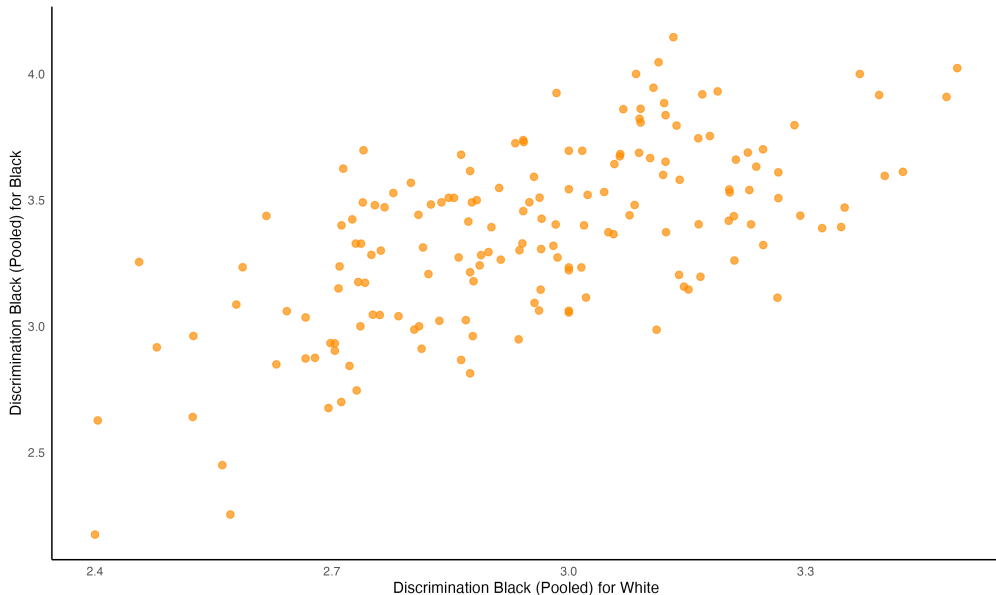
Gender bias pos corr w/ selectivity; negative corr w/ discretion



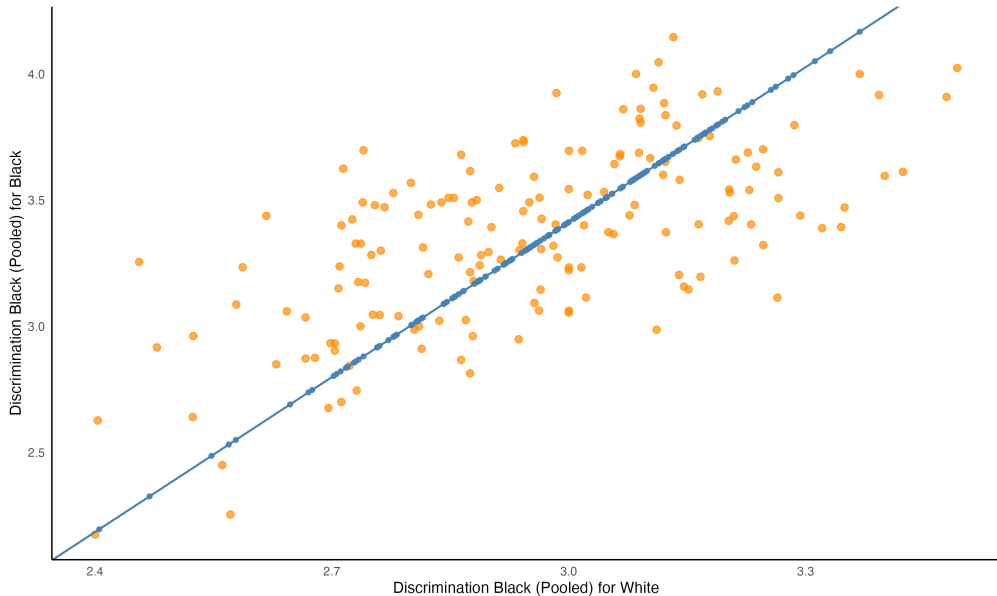
Selectivity and discretion strongly negatively correlated



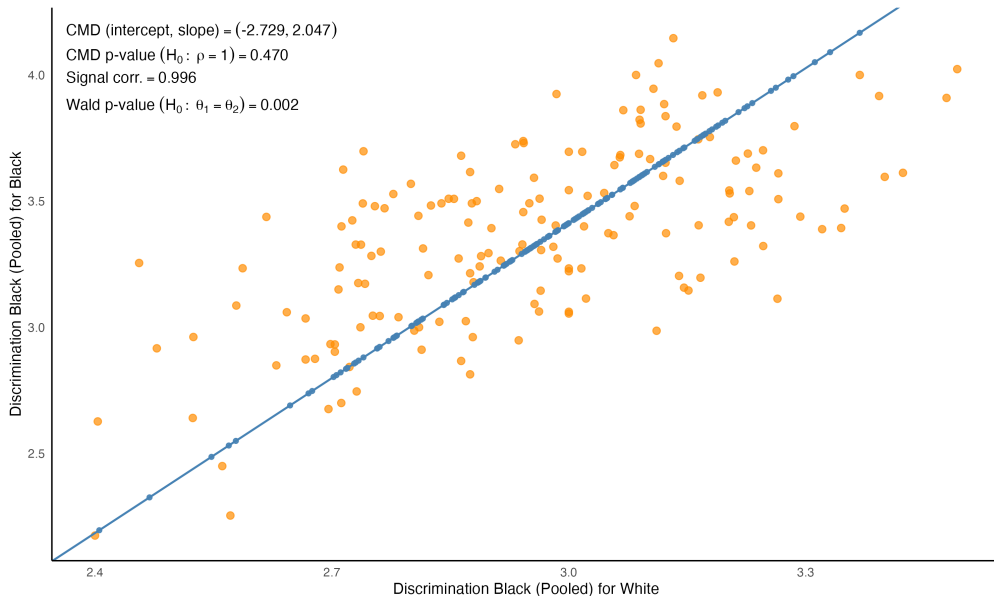
Race discrimination beliefs across black and white respondents



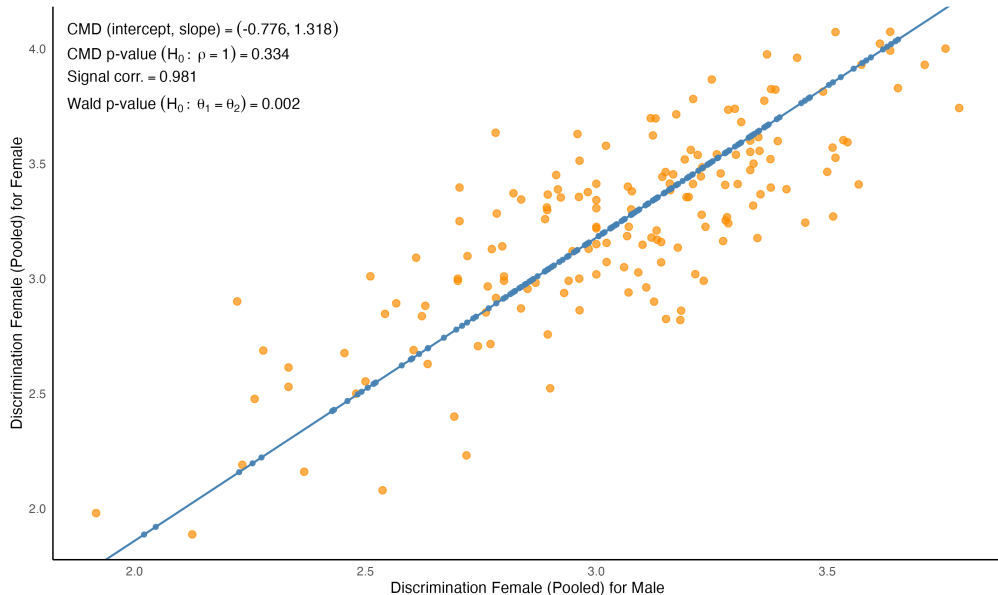
Race discrimination beliefs across black and white respondents



Race discrimination beliefs across black and white respondents



Gender discrimination beliefs across Female and Male respondents



Beliefs very highly correlated across demographic groups

	Discrimination Black (Pooled)			Discrimination Female (Pooled)		
	Corr	CMD p-value	Wald p-value	Corr	CMD p-value	Wald p-value
		$H_0 : \rho = 1$	$H_0 : \theta_1 = \theta_2$		$H_0 : \rho = 1$	$H_0 : \theta_1 = \theta_2$
Panel A: Likert						
Black vs White	0.996	0.470	0.002	1.001	0.476	0.396
Female vs Male	1.015	0.430	0.166	0.981	0.334	0.002
Looking for a Job vs Not	0.934	0.060	0.042	0.993	0.412	0.402
Feared Discrimination vs Not	1.003	0.602	0.002	0.988	0.170	0.044
Age ≥ 40 vs < 40	0.952	0.336	0.118	0.983	0.048	0.052
At Least Some College vs HS Diploma or less	0.897	0.250	0.152	0.953	0.088	0.012
Convenience vs Probability	0.932	0.206	0.152	0.981	0.180	0.138
Confident vs Not (Gender)	0.916	0.134	0.004	1.015	0.828	0.554
Confident vs Not (Race)	0.944	0.212	0.008	0.964	0.066	0.068
Panel B: Borda						
Black vs White	0.954	0.314	0.002	1.000	0.488	0.454
Female vs Male	0.970	0.284	0.268	0.969	0.188	0.028
Looking for a Job vs Not	1.000	0.474	0.392	0.984	0.230	0.184
Feared Discrimination vs Not	0.989	0.412	0.402	0.991	0.490	0.396
Age ≥ 40 vs < 40	0.936	0.056	0.012	1.000	0.218	0.156
At Least Some College vs HS Diploma or less	1.018	0.728	0.400	0.992	0.540	0.008
Convenience vs Probability	1.022	0.534	0.524	0.990	0.302	0.272
Confident vs Not (Gender)	1.001	0.532	0.406	0.979	0.098	0.098
Confident vs Not (Race)	0.988	0.350	0.292	0.970	0.044	0.032
N	164			164		

Do beliefs predict contact gaps?

Correspondence experiment

- ▶ 97 Fortune 500 firms studied in Kline, Rose, Walters (2024)
- ▶ Distinctively Black names called back less often than White names
- ▶ Female names called back about as often as male names
- ▶ But enormous heterogeneity across firms in both sorts of contact gaps.

EIV regressions

Let Y_j be an experimental contact gap at firm j and S_j the corresponding Likert or Borda score; interested in linear relationship

$$Y_j = \beta S_j + X_j' \gamma + \epsilon_j,$$

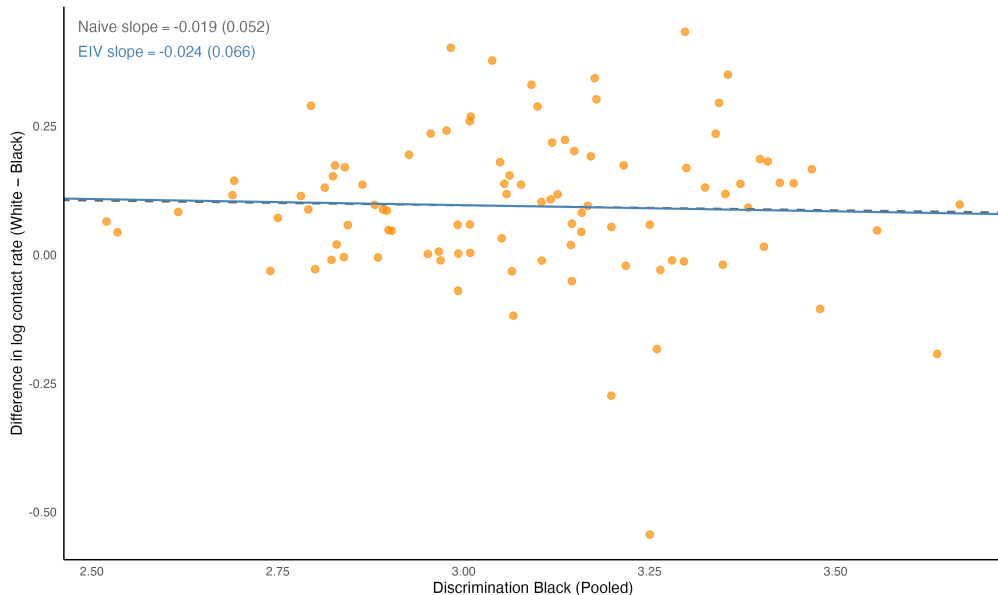
where X_j is either constant, a vector of industry dummies, or other controls.

Errors in variables (EIV) regressions (Fuller, 1987) address measurement error ($\hat{S}_j - S_j$). In bivariate case, the EIV slope can be written

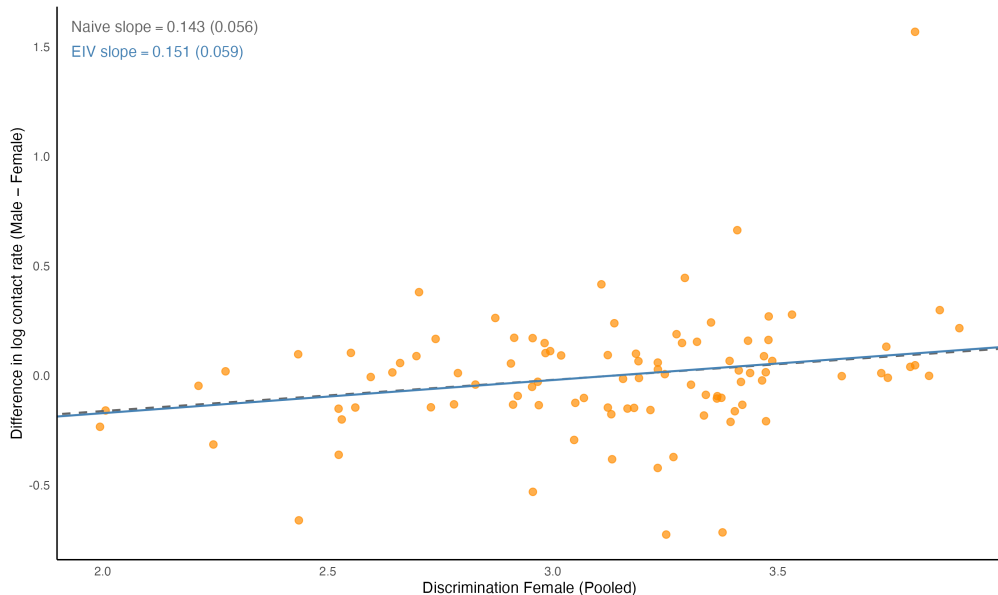
$$\hat{\beta}_{EIV} = \frac{\mathbb{C}_n[Y, \hat{S}]}{\mathbb{V}_n[\hat{S}] - \mathbb{E}_n[\sigma^2]}$$

- Test $\beta = 0$ to evaluate predictive power of shared beliefs for experimental Y .

Race contact gaps unrelated to race discrimination beliefs



But significant positive relationship for gender



Mostly insignificant relationships between racial contact gaps and beliefs

	Likert				Borda			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Race								
Discrimination Beliefs	-0.007 (0.065)	0.196 (0.095)	0.351 (0.152)	0.751 (0.299)	-0.082 (0.226)	0.546 (0.327)	0.833 (0.433)	2.054 (0.705)
Selectivity Beliefs			-0.181 (0.065)	-0.375 (0.145)			-0.535 (0.215)	-1.220 (0.419)
Panel B: Gender								
Discrimination Beliefs	0.148 (0.057)	0.126 (0.060)	0.159 (0.056)	0.132 (0.064)	0.563 (0.229)	0.598 (0.253)	0.629 (0.225)	0.623 (0.268)
Selectivity Beliefs			-0.043 (0.046)	0.034 (0.069)			-0.174 (0.200)	0.203 (0.321)
Industry FE		X		X		X		X

Mostly insignificant relationships between racial contact gaps and beliefs

	Likert				Borda			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Race								
Discrimination Beliefs	-0.007 (0.065)	0.196 (0.095)	0.351 (0.152)	0.751 (0.299)	-0.082 (0.226)	0.546 (0.327)	0.833 (0.433)	2.054 (0.705)
Selectivity Beliefs			-0.181 (0.065)	-0.375 (0.145)			-0.535 (0.215)	-1.220 (0.419)
Panel B: Gender								
Discrimination Beliefs	0.148 (0.057)	0.126 (0.060)	0.159 (0.056)	0.132 (0.064)	0.563 (0.229)	0.598 (0.253)	0.629 (0.225)	0.623 (0.268)
Selectivity Beliefs			-0.043 (0.046)	0.034 (0.069)			-0.174 (0.200)	0.203 (0.321)
Industry FE		X		X		X		X

Gender relationship more robust

	Likert				Borda			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Race								
Discrimination Beliefs	-0.007 (0.065)	0.196 (0.095)	0.351 (0.152)	0.751 (0.299)	-0.082 (0.226)	0.546 (0.327)	0.833 (0.433)	2.054 (0.705)
Selectivity Beliefs			-0.181 (0.065)	-0.375 (0.145)			-0.535 (0.215)	-1.220 (0.419)
Panel B: Gender								
Discrimination Beliefs	0.148 (0.057)	0.126 (0.060)	0.159 (0.056)	0.132 (0.064)	0.563 (0.229)	0.598 (0.253)	0.629 (0.225)	0.623 (0.268)
Selectivity Beliefs			-0.043 (0.046)	0.034 (0.069)			-0.174 (0.200)	0.203 (0.321)
Industry FE		X		X		X		X

Gender relationship more robust

	Likert				Borda			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Race								
Discrimination Beliefs	-0.007 (0.065)	0.196 (0.095)	0.351 (0.152)	0.751 (0.299)	-0.082 (0.226)	0.546 (0.327)	0.833 (0.433)	2.054 (0.705)
Selectivity Beliefs			-0.181 (0.065)	-0.375 (0.145)			-0.535 (0.215)	-1.220 (0.419)
Panel B: Gender								
Discrimination Beliefs	0.148 (0.057)	0.126 (0.060)	0.159 (0.056)	0.132 (0.064)	0.563 (0.229)	0.598 (0.253)	0.629 (0.225)	0.623 (0.268)
Selectivity Beliefs			-0.043 (0.046)	0.034 (0.069)			-0.174 (0.200)	0.203 (0.321)
Industry FE		X		X		X		X

Wrapping up

Summary: fear and loathing

1/3rd of respondents report having put off applying to a job for fear of discrimination

Firms have measurable reputations for race, gender, and age discrimination

The gender preferences of firms seem to be an “open secret”

- ▶ High agreement between demographic groups and w/ audit evidence
- ▶ Beliefs predictive even within industries

Beliefs about firms' racial preferences more complicated

- ▶ Strongly correlated across groups
- ▶ But predict audit evidence only within industry or conditional on selectivity beliefs

Paranoia about racial discrimination?

“Illuminati” / anti-elite theory of race discrimination?

- ▶ Respondents believe that selective firms are the most biased
- ▶ Selective firms are also believed to have the least discretion

Paranoia about racial discrimination?

“Illuminati” / anti-elite theory of race discrimination?

- ▶ Respondents believe that selective firms are the most biased
- ▶ Selective firms are also believed to have the least discretion

Both heuristics appear at odds with the evidence

- ▶ Selectivity predicts less bias in correspondence studies
- ▶ Manager discretion often conduit for bias (Mocanu, 2022; Agan et al., 2023)

Paranoia about racial discrimination?

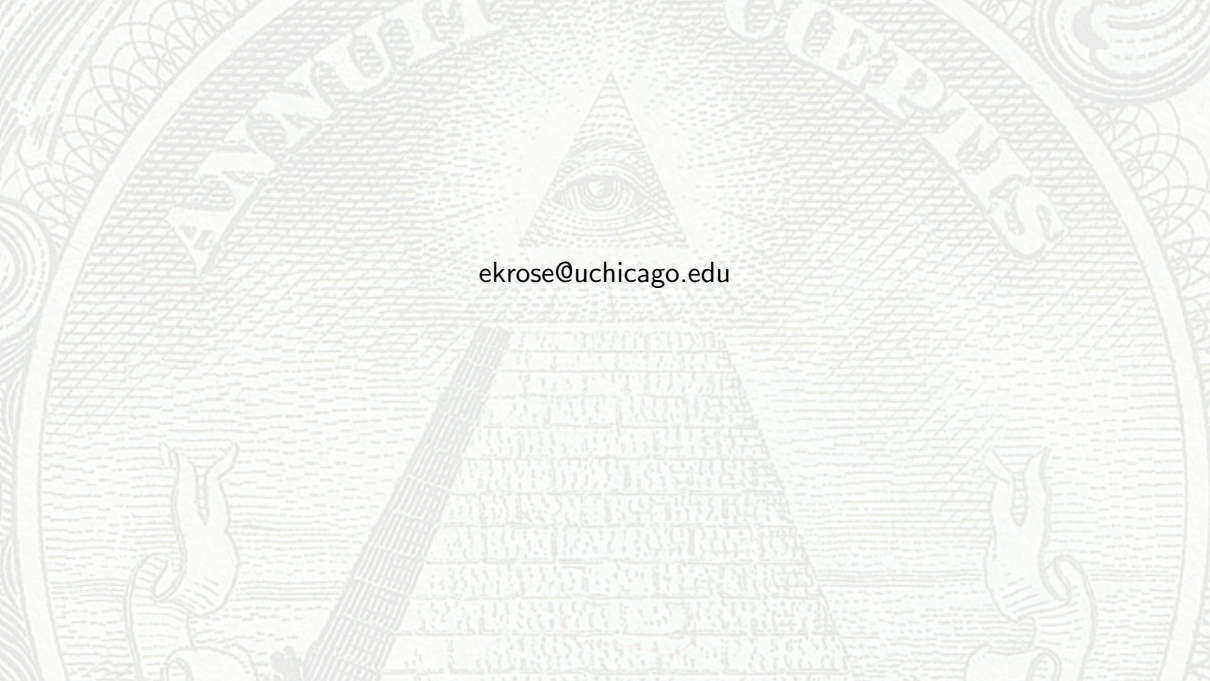
“Illuminati” / anti-elite theory of race discrimination?

- ▶ Respondents believe that selective firms are the most biased
- ▶ Selective firms are also believed to have the least discretion

Both heuristics appear at odds with the evidence

- ▶ Selectivity predicts less bias in correspondence studies
- ▶ Manager discretion often conduit for bias (Mocanu, 2022; Agan et al., 2023)

Can providing objective information about firm biases to job seekers improve their search efficiency?



ekrose@uchicago.edu

Bonus Material

Survey introduction

Have you held an entry-level job in the last 2 years?
[Yes/No/Prefer not to answer]

▶ back

Beliefs about selectivity

In this section of the survey, we'd like to understand your beliefs about the hiring practices of five U.S. companies. We will ask you a series of questions about the likelihood that individuals are contacted for a job interview, hired for a job, and accept a job at these companies.

Beliefs about selectivity

In this section of the survey, we'd like to understand your beliefs about the hiring practices of five U.S. companies. We will ask you a series of questions about the likelihood that individuals are contacted for a job interview, hired for a job, and accept a job at these companies.

*Consider a **high-school graduate** with 1-2 years of relevant experience who has applied to an entry-level job.*

*Please indicate the likelihood that an applicant would be able to successfully **pass an interview** with each of the following companies.*

Beliefs about selectivity

In this section of the survey, we'd like to understand your beliefs about the hiring practices of five U.S. companies. We will ask you a series of questions about the likelihood that individuals are contacted for a job interview, hired for a job, and accept a job at these companies.

*Consider a **high-school graduate** with 1-2 years of relevant experience who has applied to an entry-level job.*

*Please indicate the likelihood that this applicant would **accept an entry-level job** at each of these companies, if offered one.*

Beliefs about selectivity

In this section of the survey, we'd like to understand your beliefs about the hiring practices of five U.S. companies. We will ask you a series of questions about the likelihood that individuals are contacted for a job interview, hired for a job, and accept a job at these companies.

*Consider a **high-school graduate** with 1-2 years of relevant experience who has applied to an entry-level job.*

*Please indicate the likelihood that this applicant would **accept an entry-level job** at each of these companies, if offered one.*

Responses are elicited for each company on 5-point scale ranging from “very unlikely” to “very likely”, along with “Don't know / prefer not to answer” option.

Survey conclusion: Information sources

Your responses indicated that you think [firm] is likely to discriminate against Black applicants. What sources of information did you use to arrive at this conclusion?

Select all that apply.

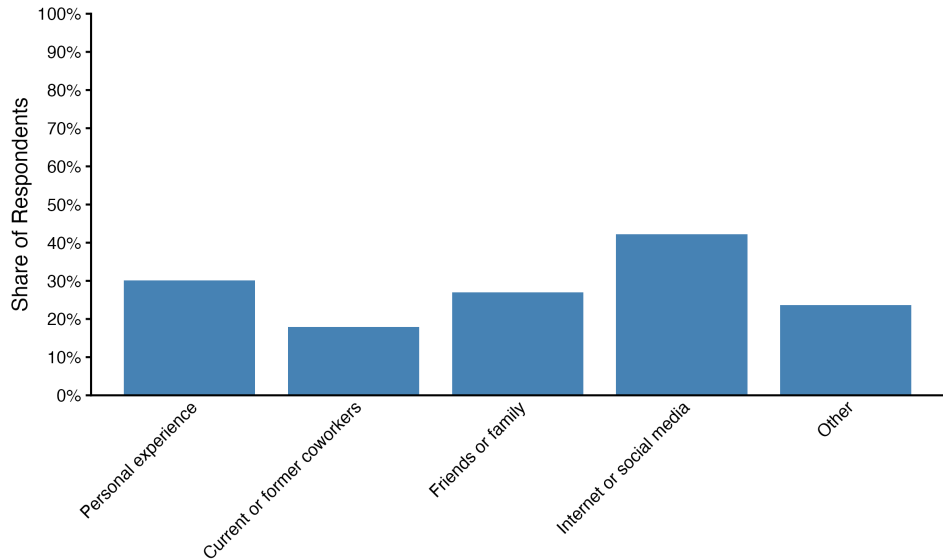
- ▶ *Personal experience*
- ▶ *Current or former coworkers*
- ▶ *Friends or family*
- ▶ *Internet or social media*
- ▶ *Other*

Survey conclusion: Attention check

In the previous section you answered questions on the hiring practices of five U.S. companies. Which of the following companies were you asked about? (select all that apply)

▶ back

Mixture of information sources on race discrimination beliefs



Borda scores and SST [▶ back](#)

Define population pairwise win and tie probabilities:

$$p_{jk} = \Pr(j \succ_i k) \quad \text{and} \quad t_{jk} = \Pr(j \sim_i k),$$

Expected pairwise score is $w_{jk} := p_{jk} + \frac{1}{2}t_{jk}$

Strong stochastic transitivity (SST) implies that for j, k, ℓ if

$$w_{jk} \geq 0.5 \quad \text{and} \quad w_{k\ell} \geq 0.5, \quad \text{then} \quad w_{j\ell} \geq \max\{w_{jk}, w_{k\ell}\}.$$

If SST holds, Borda ordering recovers underlying preference ordering when all w_{ijk} observed (Korba et al, 2017; Shah and Wainwright, 2018). Here, w_{ijk} missing at random.

SST does not imply IIA (e.g., can allow some dependence on choice sets) [▶ details](#)

Proposition: Global Consistency of “Common-Opponent” Borda

Assume:

1. **Strong Stochastic Transitivity (SST):** The pairwise scores $\{w_{jk}\}$ satisfy SST.
2. **No knife-edge indifference:** For all distinct firm pairs j, k , $w_{jk} \neq 0.5$.
3. **Symmetric Design:** The survey consists of two disjoint sets of firms, $\mathcal{A}$ (Anchors) and $\mathcal{N}$ (Non-anchors). Choice sets are formed by drawing one firm uniformly from $\mathcal{A}$ and four uniformly from $\mathcal{N}$.
4. **Distinguishability:** For any distinct j, k with $w_{jk} \neq 0.5$, $\exists \ell \in \mathcal{N}$ s.t. $w_{j\ell} \neq w_{k\ell}$.

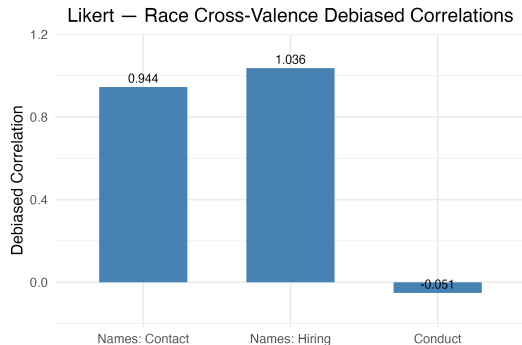
Then, for *any* pair of distinct firms $j, k \in \mathcal{A} \cup \mathcal{N}$, the population Borda ranking coincides with the pairwise majority relation:

$$B_j > B_k \iff w_{jk} > 0.5 \quad (\iff p_{jk} > p_{kj}),$$

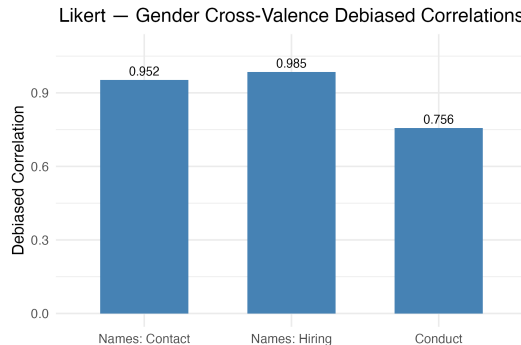
where $B_j := \mathbb{E}[\hat{B}_j] = \frac{1}{|\mathcal{N}|} \left[\frac{1}{2} \mathbf{1}\{j \in \mathcal{N}\} + \sum_{k \in \mathcal{N} \setminus \{j\}} w_{jk} \right]$ is expected Borda score.

Cross-valence signal correlations [▶ back](#)

(a) Likert, Race

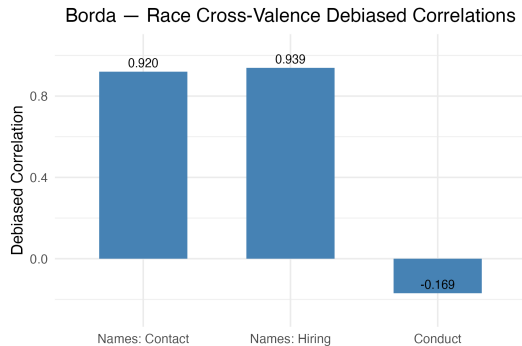


(b) Likert, Gender

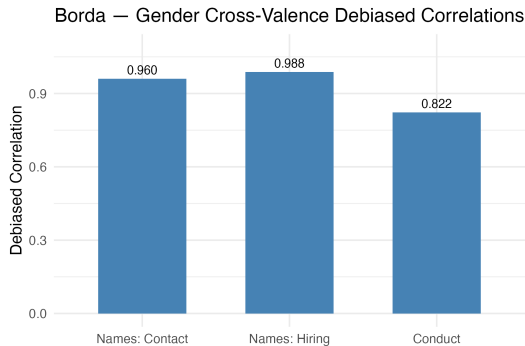


Cross-valence signal correlations [▶ back](#)

(c) Borda, Race



(d) Borda, Gender



Characterizing strength of agreement [▶ back](#)

Use squared standard errors $\{V_{Lj}, V_{Bj}\}$ to estimate signal variances:

$$\hat{\sigma}_L^2 = \frac{1}{J} \sum_{j=1}^J \left((\hat{L}_j - \bar{L})^2 - V_{Lj} \right), \quad \hat{\sigma}_B^2 = \frac{1}{J} \sum_{j=1}^J \left((\hat{B}_j - \bar{B})^2 - V_{Bj} \right)$$

When signal is faint, estimate can be negative; correct using (Katz, 1961):

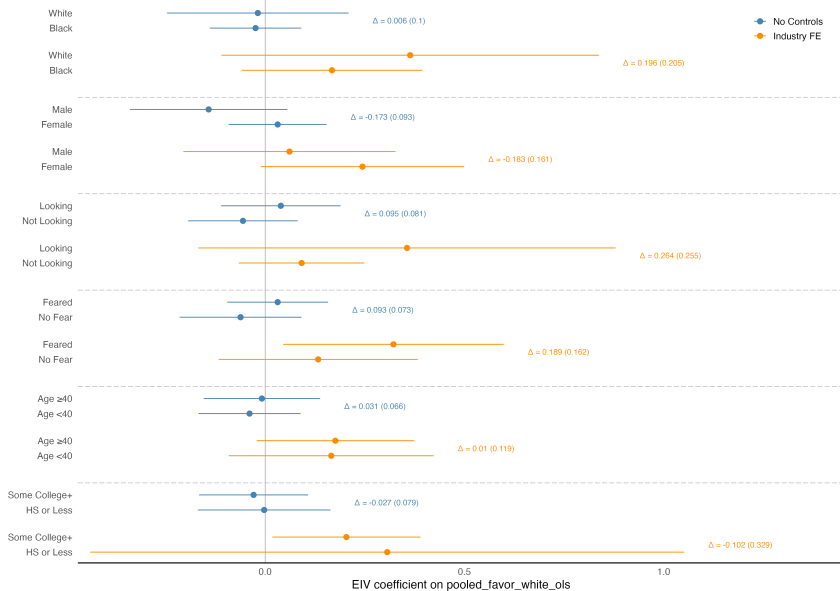
$$\dot{\sigma}_L^2 = \hat{\sigma}_L^2 + \hat{\mathbb{V}}[\hat{\sigma}_L^2]^{1/2} \frac{\phi(z_L)}{\Phi(z_L)}, \quad \dot{\sigma}_B^2 = \hat{\sigma}_B^2 + \hat{\mathbb{V}}[\hat{\sigma}_B^2]^{1/2} \frac{\phi(z_B)}{\Phi(z_B)}.$$

where $\hat{\mathbb{V}}[\hat{\sigma}_L^2]$ and $\hat{\mathbb{V}}[\hat{\sigma}_B^2]$ are computed analytically, and $z_L = \hat{\sigma}_L^2 / \hat{\mathbb{V}}[\hat{\sigma}_L^2]^{1/2}$ and $z_B = \hat{\sigma}_B^2 / \hat{\mathbb{V}}[\hat{\sigma}_B^2]^{1/2}$ are studentized variance estimates

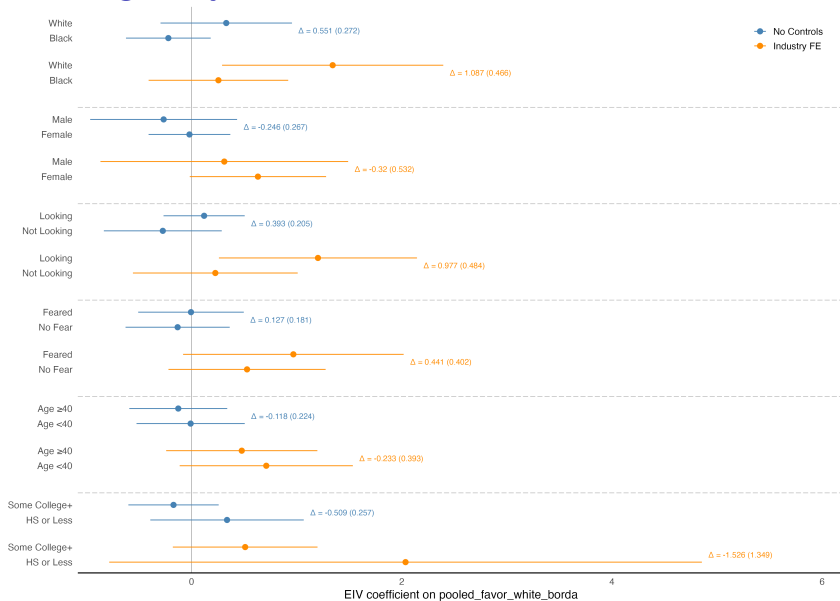
Signal strengths for non-pooled questions [▶ back](#)

Outcome	Likert				Borda			
	Std Dev	Signal Std Dev	Reliability	T-stat no signal	Std Dev	Signal Std Dev	Reliability	T-stat no signal
Race								
Discrimination Black (Contact)	0.250	0.214	0.736	9.016	0.070	0.064	0.828	12.014
Discrimination Black - Black Wording (Contact)	0.335	0.283	0.714	8.782	0.090	0.079	0.777	10.388
Discrimination Black - White Wording (Contact)	0.229	0.150	0.429	4.476	0.065	0.052	0.622	6.657
Discrimination Black (Hire)	0.241	0.204	0.718	8.778	0.067	0.061	0.824	11.579
Discrimination Black - Black Wording (Hire)	0.331	0.278	0.706	8.783	0.085	0.074	0.770	9.997
Discrimination Black - White Wording (Hire)	0.210	0.124	0.352	3.576	0.062	0.049	0.615	6.511
Discrimination Black (Conduct)	0.319	0.240	0.566	6.133	0.078	0.066	0.729	8.704
Discrimination Black - Black Wording (Conduct)	0.319	0.240	0.566	6.133	0.078	0.066	0.729	8.704
Discrimination Black - White Wording (Conduct)	0.181	0.034	0.036	-1.755	0.032	0.010	0.098	0.284
Gender								
Discrimination Female (Contact)	0.398	0.377	0.898	15.459	0.099	0.094	0.905	16.799
Discrimination Female - Male Wording (Contact)	0.390	0.352	0.815	10.681	0.101	0.092	0.820	11.467
Discrimination Female - Female Wording (Contact)	0.448	0.411	0.842	11.940	0.109	0.100	0.841	12.692
Discrimination Female (Hire)	0.416	0.396	0.907	16.579	0.101	0.096	0.913	17.565
Discrimination Female - Male Wording (Hire)	0.414	0.377	0.831	11.139	0.100	0.091	0.828	11.569
Discrimination Female - Female Wording (Hire)	0.455	0.420	0.850	12.487	0.111	0.102	0.853	13.426
Discrimination Female (Conduct)	0.396	0.362	0.833	13.422	0.086	0.081	0.894	15.345
Discrimination Female - Male Wording (Conduct)	0.367	0.308	0.706	8.239	0.081	0.071	0.781	9.052
Discrimination Female - Female Wording (Conduct)	0.473	0.430	0.826	12.143	0.106	0.098	0.856	13.104
Age								
Discrimination Older (Conduct)	0.248	0.195	0.621	6.920	0.056	0.046	0.673	7.771
Discrimination Older - Younger Wording (Conduct)	0.393	0.330	0.706	8.514	0.097	0.087	0.806	11.386
Discrimination Older - Older Wording (Conduct)	0.328	0.252	0.592	6.966	0.079	0.064	0.660	8.073

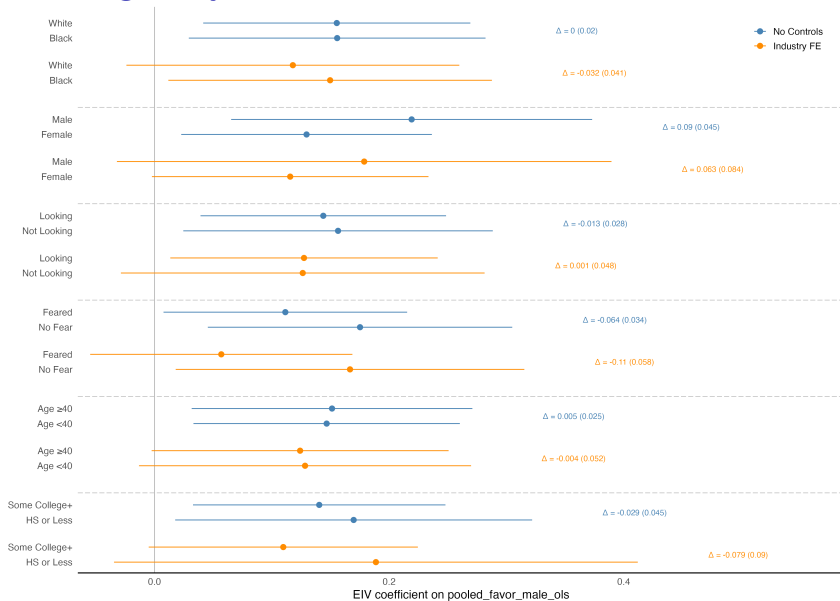
EIV heterogeneity



EIV heterogeneity



EIV heterogeneity



EIV heterogeneity

