Employer Preferences and Job-Seeker Beliefs: Experimental Evidence from the Post-College Job Search Process*

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March 25, 2026

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Abstract

Job seekers' beliefs about employer preferences may matter for their search behavior and outcomes, but they are poorly understood. Partnering with a large public university in the Southeastern U.S., we develop a two-sided incentivized experiment on both employers and job-seeking students to examine the nature, accuracy, and potential consequences of job seekers' beliefs. We first establish a detailed picture of what employers actually value, including underexplored elements like extracurriculars. Relative to this benchmark, students are highly misinformed about the preferences of the employers they are targeting: in particular, they overestimate the importance of professional internships while underestimating the role of work experience, extracurriculars, and GPA. Miscalibration is higher among non-white students and those with more racially-homogeneous friend groups. Inaccurate beliefs are associated with worse job outcomes, with 1 SD worse information linked to up to 4pp lower probability of having a position and $2000 lower wages for some students. Our work introduces new methodological approaches and provides evidence on employer preferences and information quality among job seekers in an understudied context, with implications for the design of interventions to reduce frictions in the job search process.

JEL Codes: M51, J24, D83, C93
Keywords: labor economics; personnel economics; employer preferences; information asymmetry; job search; field experiment

*The authors are grateful to Sandra Black, Alessandra Casella, Simon Lee, Jeffrey Shrader, and Ebonya Washington, as well as Erwin Tiongson and Bitsy Perlman, for their invaluable support and guidance. We also thank Michael Best, Mark Dean, Michelle Jiang, Judd Kessler, Brendan Moore, Suresh Naidu, Hannah Solheim, Jack Willis, and seminar participants at Columbia, AFE, APPAM, and MDRC for insightful feedback. We are indebted to Samuel Tharp and Isha Rudramurthy for excellent research assistance. We thank our survey partners for their generous cooperation that made this research possible. This work was supported by the National Science Foundation (SES 2215219) and the Russell Sage Foundation. Caron acknowledges the support of the NSF Graduate Research Fellowship. Human subjects research approval was obtained from Columbia IRB (Protocols: AAAU-2562 and AAAU-7492). A pre-analysis plan was filed in the AEA RCT Registry, AEARCTR-0009574. All errors and omissions are ours.

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1 Introduction

"Writing a resume requires a ton more skills than I thought [it] did"

—Senior college student reflecting on his job search experience

Job seekers often prepare applications drawing on what they believe employers are looking for in an applicant. These beliefs and their accuracy, may be shaped by job seekers' experiences, socioeconomic background, and networks, and may in turn matter for their job search behavior and outcomes, bringing questions of economic mobility and demographic wage gaps to the fore. Yet, the supply and demand sides of labor markets are typically studied in isolation: most existing work either focuses on employer preferences or on information among job seekers.[1] This leaves a gap in our understanding of important and policy-relevant questions at the intersection—what employers want in contrast to what job seekers *believe* they want, and how much, if at all, these beliefs relate to outcomes. Our paper fills this gap.

We conduct a novel, two-sided experimental technique in the undergraduate campus recruiting setting. We partner with a large, mid-tier public university in the Southeastern US and conduct incentivized, pre-registered experiments on both employers recruiting on that campus and the seniors and juniors looking to be hired by them to examine: (1) how employers evaluate candidate characteristics on a resume, and (2) whether (and which) students accurately understand employer preferences, and (3) how those beliefs correlate with students' job search outcomes.

We document employers' preferences, adding new evidence on employers in this understudied context and new dimensions of employers' preferences, including how they value extracurriculars. We show that job seekers tend to misunderstand employer preferences, overestimating the importance of professional internships and underestimating the value of non-professional ("work for money") jobs (e.g., barista). This miscalibration is most pronounced among non-white students and those with more racially homogenous friend groups, suggesting a potential role for networks in shaping beliefs. Inaccurate beliefs are linked with poor job search outcomes, including lower wages, consistent with information quality playing a role in job outcomes.

Why situate this study in the undergraduate job search setting? We study young adults finishing their degree and seeking to land their first full-time job, which has been shown to have lasting effects on individuals' career trajectory (Kahn 2010; Oreopoulos, von Wachter,

[1] For example, Kessler, Low, and Sullivan (2019) study employer preferences, while Jiang and Zen (2025) and Kiessling et al. (2024) study job seekers' beliefs about wages.

and Heisz 2012). The issue of information quality (or lack thereof) in this context is already palpable in existing reports, with a 2024 national survey finding that 43% of students graduating from 4 year colleges felt they were not well prepared for their job search (NACE 2024). If information frictions play a role in this market, measuring them may shed light on difficulties that students may experience in their job search. The undergraduate recruiting setting is also ideal because it represents a structured labor market, with employers recruiting from a specific, well-defined population of undergraduates. This allows us to study both employers and the population from which they are recruiting. A major asset of our design is that our partnership with a university career center allows us to initiate direct and sustained contact with a large and diverse group of both recruiters and students.

Our two-sided experimental approach sequentially measures employer preferences and then job seeker beliefs. First, we employ the Incentivized Resume Rating (IRR) approach of Kessler, Low, and Sullivan (2019) on recruiters seeking to hire students for a job or internship, particularly focusing on "generalist" employers who were open to students from a variety of majors.[2] Employers evaluated 40 hypothetical resumes constructed from *real* resumes we previously collected from job-seeking students. These hypothetical resumes included random variation in student major, GPA, work experience, and whether and what type of extracurriculars the candidate participated in (academic, volunteering, country club sports, and backyard sports). In return for their ratings, employers received the resumes and contact information of 10 real students who matched their preferences—a reward that incentivizes truth-telling. These employers rated each resume on a 1-10 Likert scale for hiring interest, perceived likelihood of accepting the job offer, and willingness to pay (WTP).

On the student side, we recruited job-seeking students to complete an analogous resume rating exercise. Each student first reported a set of sectors they were targeting in their job search and was then randomly assigned to one of those sectors; throughout the exercise, they were asked to imagine themselves as an employer from that sector. Anchoring each student to a fixed sector ensures that a (mis)match in sectoral focus does not confound measurements of belief accuracy. To incentivize effortful and thoughtful responses, we informed students that we had collected employers' preferences from our prior survey and offered them additional bonus payments for accurately guessing the preferences of employers in their assigned sector. As a complement, employers and students also completed a point-allocation exercise about the relative importance of a broader set of candidate characteristics,[3] such as standardized

[2]This helps to ensure that the hypothetical resumes employers review, which show a range of majors, can yield meaningful variation in responses and follows from the approach of Kessler, Low, and Sullivan 2019.

[3]Similar point-allocation methods have been widely used in prior work to assess the relative weight

test scores and culture fit, which the IRR exercise did not randomize.

Employers' IRR exercise reveals that employers strongly value multiple jobs held during college, GPA, professional internships, and extracurricular activities.[4] All else equal, employers are more interested in hiring candidates who have two prior work experiences, even if that experience is not related to their college degree, than in hiring candidates who have a single professional internship in place of such experience. Having an extracurricular activity increases employer interest by as much as a 0.9 GPA point increase, with higher values for sports and volunteer activities over academic ones (e.g., Biology Club). These overall results mask substantial heterogeneity between employers: high-paying, highly-specialized employers place more weight on professional internships and GPA—and have higher willingness to pay for these—while low-paying, less-specialized employers value non-professional work experience and extracurriculars.

However, students tend to misjudge these employer preferences in systematic ways. We measure the accuracy of students' beliefs using the estimates from the IRR experiment to calculate the distance between each student's coefficients and the average coefficient estimated for employers in the student's target sector. We find that students overestimate the importance of professional internships, while relatively underestimating the weight that employers place on the other resume elements (i.e., GPA, extracurriculars, and other past experience). A causal forest analysis reveals a telling asymmetry: while employer preferences vary substantially by position type and sector, student beliefs do not—instead, a student's own GPA is consistently the strongest predictor of what they think employers value. High-GPA students believe employers weigh GPA more heavily and discount the role of additional work experience. Inaccurate beliefs are more pronounced among non-white students and those with more racially homogeneous friend-groups, suggesting that diverse social networks are potentially a channel through which students acquire better labor market information.

Finally, we study whether the accuracy of job-seekers' beliefs is associated with their job search outcomes. This is an interesting empirical question: beliefs about employer preferences over resume elements may matter during the job search by affecting how students present themselves to employers, but they may not matter if employers only screen resumes for certain characteristics, like GPA or prior experience, that are not immediately responsive

individuals place across various elements. See, for example, Bandiera et al. (2021), Ares et al. (2024), and Fabre, Douenne, and Mattauch (2025).

[4]We define extracurriculars as activities students do as part of a group or organization outside of their regular academic engagements. This is also the definition that we provided to students participating in the experiment. As an example, they were told that extracurriculars can include, but are not limited to, sports, student interest groups, professional organizations, cultural/religious organizations, and so on.

to students' beliefs.

We find that students with more inaccurate beliefs have worse job outcomes, even after conditioning on demographics and other factors like GPA, suggesting that our measure of information quality captures relevant elements mediating labor market outcomes. For example, students with 1 standard deviation (SD) worse information about the preferences of employers in their industry also end up accepting lower wage jobs. The margin of the relationship with job outcomes is depends on a student's GPA. For low-GPA students, even after controlling for GPA and other characteristics, worse information is associated with a lower probability of getting a position (i.e., a negative association at the extensive margin). For high-GPA students, 1 SD worse information is associated with up to $2000 lower annual wages (i.e., a negative association at the intensive margin). These results indicate that our experimental measure of information quality captures a relevant aspect of students' job outcomes that is not captured by other observable characteristics.

Our findings shed light on how employers evaluate students' resumes and document that poor information about employer preferences is associated with meaningful disadvantages in job outcomes. This evidence is consistent with a role for beliefs in a job search process in which students target particular kinds of employers. We find that employer preferences are highly heterogeneous by pay and specialization, but that students do not anticipate this kind of heterogeneity. Instead, students' beliefs vary with GPA, and these beliefs relate to job outcomes at different margins depending on GPA, suggesting potential sorting between types of positions.

Although we cannot fully rule out that other unobserved student characteristics, such as preferences or inherent motivation, might confound the relationship between information and job outcomes, several features of our design mitigate this concern. We compare each student's beliefs to employer preferences within their self-reported target sector, so sectoral sorting cannot explain the gaps we document. Our information quality measures are only weakly correlated with students' own self-assessments of preparedness, suggesting they capture something that students themselves do not recognize as a deficit or systematic pattern. Finally, the relationship is present even when controlling for demographics and qualifications like GPA, that is, observable measures of students' preparedness or drive. Thus, our findings suggest that information quality may be a meaningful mediator, and potential source of friction, in the job search process.

This paper contributes to several strands of literature. First, we introduce a new experimental technique for measuring the quality of job seekers' information about employers'

preferences. While prior experimental work has elicited either employer preferences (e.g., Kessler, Low, and Sullivan (2019)) or job-seekers' beliefs (e.g., Jiang and Zen (2025)), we study both employers and students associated with the same university in order to better understand how accurately job-seekers understand the preferences of employers they are targeting in their job search. An exception is Abebe et al. (2025), who use a two-sided belief-elicitation survey alongside a job fair experiment in Ethiopia to show that both (incentivized) firms and job-seekers hold distorted beliefs about labor market fundamentals such as wage and ability distributions. We instead offer insights on job seekers' beliefs about what employers value on a resume. To our knowledge, our work is the first to use incentive-compatible belief elicitation methods on *both* sides of a labor market to directly measure the gap between employer hiring preferences and job seekers' beliefs about those preferences.

Second, this paper expands the literature on employer preferences by considering an under-studied dimension of candidates' profiles: their extracurricular activities. Surveys of employers show that they value candidates' problem-solving skills, teamwork, communication, and initiative and work ethic (NACE 2025), but we know little about how employers evaluate these skills in the hiring process. We highlight extracurriculars as a key channel by which employers evaluate these skills. At the same time, extracurriculars constitute a significant part of time-use on college campuses and have been linked with wage premia in post-college careers (Amornsiripanitch et al. 2023; Barron, Ewing, and Waddell 2000; Long and Caudill 1991; Heckman and Loughlin 2021), but have not yet been examined systematically by prior work eliciting employer preferences (e.g., Kessler, Low, and Sullivan (2019)). Further, existing work has shown that access to and persistence in extracurricular activities and sports are strongly correlated with socioeconomic background (Aspen Institute 2022; Snellman et al. 2015; Morrison 2021). Hence, the new evidence we generate about employers' use of extracurriculars in hiring may contribute to understanding demographic gaps in labor market outcomes and obstacles to intergenerational mobility.

Finally, this work also adds evidence on an understudied but important context and student body. Prior work has emphasized large public universities as important sites for intergenerational mobility (Chetty et al. 2020). Yet, there is limited evidence on them in the academic literature, which has tended to draw samples from highly selective and elite contexts that only a small share of the US population attends. Existing studies (e.g., Loury and Garman (1995), Dale and Krueger (2002), and Dale and Krueger (2014)) have examined the relationship between college selectivity and job outcomes, motivating a need for greater understanding of the drivers of job outcomes across types of universities. This

paper contributes by providing new insight on employer preferences and student beliefs in a large mid-tier public university where over a third of students are first generation college students. In this way, our work helps to inform researchers and practitioners—such as career centers—about the beliefs, experiences, and challenges faced by students of different backgrounds.

2 Context

Our experiment takes place at a large, mid-tier public university in the Southeastern U.S. The university enrolls about 10,000 undergraduate students per year, with an acceptance rate of over 75%. As of 2025, it falls roughly around the median among public universities assessed by US News (US News 2025). A large majority of its student body are in-state students, and many alumni remain in the state. It offers a variety of majors, with the most popular being business administration and law, psychology, nursing, criminal justice, management, and biology.

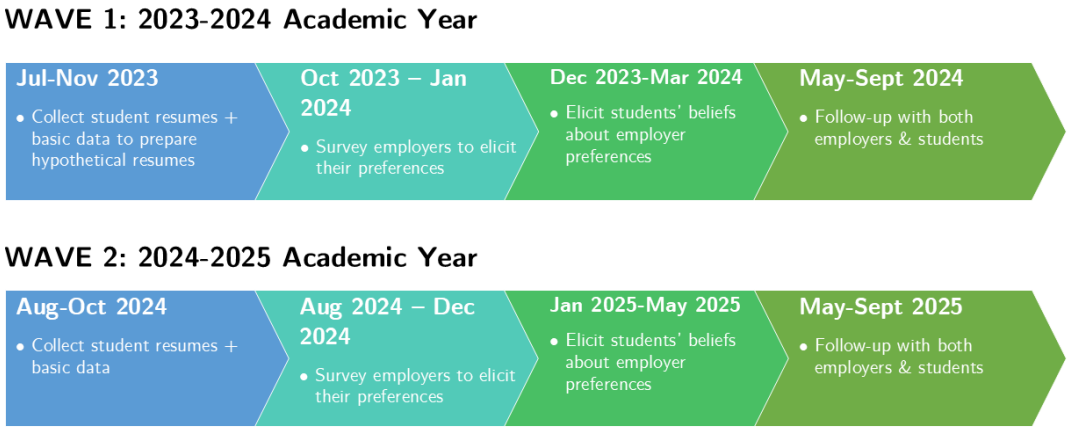
This context likely differs substantially from those examined in previous work. For example, Kessler, Low, and Sullivan (2019) studies students at the University of Pennsylvania, an Ivy League University ranked 10 in US universities by US News with tuition of approximately $69,000 per year, and the University of Pittsburgh, a public university ranked 70 in US universities with an in-state tuition cost of approximately $21,000 per year (US News 2025). Their work found substantial differences in the preferences of employers across these two contexts. Motivated by the importance of looking at even more academic contexts, our study sheds light on a mid-tier university with lower selectivity and lower tuition (less than $10,000 for in-state students).

Our context may differ from contexts studied in the past due to the selection of students, the preparation and information they receive, and the job opportunities open to them after graduation. For example, about 30% of students on this campus receive Pell grants, and over a third of students are first generation college students. At the University of Pennsylvania, these figures are 18% and 15%, respectively (Penn 2021). Students' also preparation likely differs, with an average high school GPA of 3.9 out of 4 at both the the University of Pennsylvania and the University of Pittsburgh and 3.4 out of 4 at the university we are studying (US News 2025). In 2017, the median salary earned by graduates was below $40,000, which is substantially lower than the $51,000 annual median salary earned by graduates from University of Pittsburgh in 2019 (Pitt 2023).

3 Experimental design

In order to understand employers' preferences and students' beliefs in this context, we implemented a two-sided, incentivized experiment designed to elicit employer preferences and students' beliefs about those preferences in the 2023-2024 (Wave 1), and 2024-2025 (Wave 2) academic years.[5] The detailed timelines of each wave and survey are presented in Figure 1. Both employer and student participants were initially recruited through direct emails from the university's career center. For the final follow up surveys (which took place starting in May), employers and students who had already participated in a prior survey were contacted directly.

Figure 1: Timeline of surveys across two waves



3.1 Incentivized resume rating design

The main activity in the employer survey was an incentivized resume rating (IRR) exercise, following Kessler, Low, and Sullivan (2019). Employers were incentivized to participate on the basis of receiving matches with real job-seekers they might be interested in hiring, as well as a lottery to win one $300 gift card if they participated in a follow-up survey. They

[5] Although we originally pre-specified a single round of the experiment, we performed two rounds in order to reach our target sample sizes.

were notified that the data collected from their responses would also be used in a research study. The full text of the invitation email appears in Appendix A.

In this design, each employer viewed 40 randomly-generated, hypothetical resumes, known by the employers to be hypothetical. Each employer rated each resume on three metrics: hiring interest, perceived probability of the candidate accepting an offer, and the highest wage the employer would offer to the candidate based on this information alone. Although the resumes were known by the employers to be hypothetical, they were incentivized to reveal their true preferences because their responses were used to match them with real students that they might be interested in hiring via a machine learning algorithm.

The randomization of the resumes is discussed in the next section. Since each employer reviewed multiple resumes, the treatment (i.e., exposure to different resume elements) occurred within subject, under the assumption that employer preferences are invariant to the order in which the resumes are presented (see discussions of within-subject experimental designs, e.g., List (2025)).

Following the IRR activity, employers also completed a ranking activity to allocate 100 hypothetical points based on the relative weight they place on different resume components. Results from this exercise appear in Appendix Section F. Employers were also asked about their demographic and professional characteristics.

3.2 Designing realistic hypothetical resumes

In order to ensure that we elicit employer preferences that are generalizable beyond the experiment, we designed the hypothetical resumes viewed by employers to appear realistic.

To do this, we collected resumes from students before the beginning of the exercise. Beginning in July 2023, students were asked to submit their resumes in exchange for the opportunity to be matched with an employer who might be interested in hiring them. Students were also offered an optional, additional $5 payment to provide demographic and background information in a short survey. We collected 71 resumes in this initial phase in Wave 1 and 63 in Wave 2.

We parsed data from the resumes, with a focus on extracurriculars, work experiences, and skills. These were lightly cleaned to ensure that no identifying information would be revealed and lightly edited for clarity. These resume elements became the building blocks of the hypothetical resumes shared with employers.

Each resume contained the following main randomized elements: name, major, GPA, and a first work experience—either internship-type (professional experience, e.g., tutoring, research assistantships, or other internships, 50% of resumes) or non-professional (e.g., barista, server, cashier, etc., 50%). In addition to these, 65% of resumes also included a second work experience (always a non-professional experience) and 65% of resumes included an (unpaid) extracurricular activity. See Appendix B for further details on the design.

Overall, the resumes we designed were highly realistic in content, thus likely reflecting the types of resumes employers in this setting are likely to see. Although the hypothetical resumes were likely shorter than many real resumes (only 31% of resumes we collected contained 2 or fewer work experiences), the types of work experiences are in line with what employers might expect to see. 82% of resumes we collected showed at least one non-professional experience, consistent with 82.5% of hypothetical resumes showing at least one such experience. In addition, 60% of resumes showed at least one internship-type experience, consistent with 50% of hypothetical resumes. Finally, of the resumes collected, 63% showed an extracurricular activity, consistent with the 65% of hypothetical resumes doing the same.

3.3 Employer sample and representativeness

We collected complete responses from 169 employers—91 employers in Wave 1, and 78 employers in Wave 2.[6] Summary statistics for this sample are presented in Table 1.

Our sample consists of experienced and relatively highly educated employers. Respondents have an average of 11 years of hiring experience, suggesting they are generally experienced in evaluating job candidates and that there is large dispersion among our respondents, with a standard deviation of 8.3 years. More than half of the respondents (54%) have a college degree, and about 29% further hold a graduate degree. The remaining smaller share of respondents report their highest level of education as an associate degree (9.5%) or high-school diploma (7%). Compared with Census estimates of the adult population of the county in which the university is located, these employers are more likely to have at least a college degree (54% compared to 30%) (Census 2024).

Our sample slightly overrepresents White, Asian, and multi-racial individuals relative to the surrounding area. About 89% of employers in our sample identify as White, while 4% are Asian, 3% are Black or African American, and 5% are Multi-racial or identify as other.

[6]Relative to prior IRR studies, which were conducted on 72 subjects (in Kessler, Low, and Sullivan 2019) and on 69 subjects (in Zhang 2022), this sample size is quite high and suitable for our planned analyses.

Table 1: Summary statistics for employer sample

	N	Mean	SD	Min	Max
Years of hiring experience	255	10.00	8.35	1	45
Graduate degree	161	0.30	0.46	0	1
High-school diploma	159	0.07	0.25	0	1
Associate degree	159	0.09	0.29	0	1
College degree	159	0.53	0.50	0	1
Male	160	0.46	0.50	0	1
Female	160	0.53	0.50	0	1
Non-binary/third gender	160	0.01	0.11	0	1
Asian	159	0.04	0.19	0	1
Black or African American	159	0.03	0.16	0	1
White	159	0.89	0.32	0	1
Multi-racial or Other	159	0.05	0.22	0	1
First-generation college graduate	138	0.40	0.49	0	1

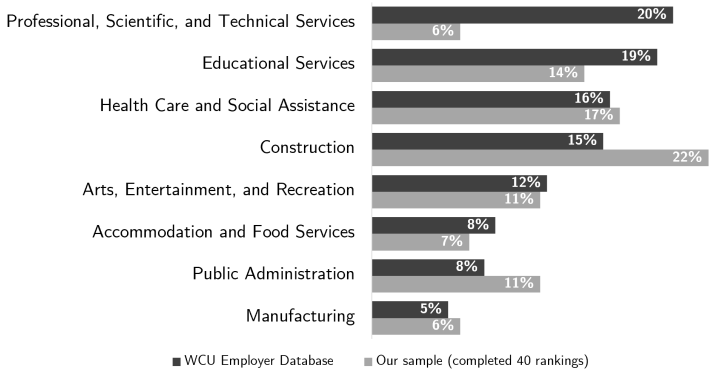
Notes: This table shows descriptive statistics on employers who participated in the experiment. Observations differ due to attrition and item non-response. Attrition is further discussed in Appendix C.

Compared with Census estimates of the population of the county in which the university is located, our sample slightly over-represents White individuals, Asian individuals, and multi-racial individuals, while underrepresenting other groups (Census 2024). The gender breakdown shows that 49% of respondents are female and 1.2% are non-binary or third gender. In terms of socioeconomic background, 40% of our employer respondents are first generation college graduates.

The industry breakdown of our employers is shown in Figure 2. While our sample over-represents employers in the construction and public sectors, it underrepresents those in the educational services and professional, scientific, and technical services sectors. Otherwise, the industry composition of employer respondents from other sectors is generally representative of the industry distribution of the more than 900 employers who recruited students from that university in the 2023-24 academic year.

Our final follow up survey with employers had about a 30% return response rate in Wave 1, with 40% of respondents reporting that they reached out to at least one candidate we recommended. This suggests that employers took the incentive to participate in our survey and be matched to candidates fairly seriously.

Figure 2: Comparing our employer sample to the population of recruiters



Notes: This figure shows the distribution of employer industries in the sample which completed the experimental exercise relative to a database collected by the career office of employers with high or medium engagement over a six month period. Employers may belong to more than one industry.

Response rates of employers between the surveys is discussed in Appendix C. Overall, while there was some attrition during and across our surveys, it does not appear to be systematically correlated with factors that could materially affect or confound our findings. We find no evidence that attrition during the resume rating exercise is predicted by employer sector or the characteristics of the resumes shown.

4 Employer preferences

In this section, we use the IRR technique to analyze the value employers place on different resume elements, including GPA, work experience, internships, and extracurricular activities. We find that employers value all of these characteristics, including placing a high value on extracurriculars. We also show that these preferences vary substantially with both job characteristics (e.g., salary and sector) and with characteristics of individual recruiters (e.g., years of experience).

4.1 Empirical strategy

We focus our analysis on the linear regression specification presented in Equation 1. The outcome, V_{ij}, is the rating of subject i on resume j. Among the three employer ratings we study—hiring interest, the perceived likelihood that the candidate would accept a job

from that employer,[7] and the highest salary the employer would be willing to pay (the willingness to pay, or WTP)—the former is the primary outcome of interest. The main explanatory variables on the right hand side concern elements of that resume j, namely, the GPA, work experience, internship-type experience, and whether or not that resume has an extracurricular.

$$V_{ij} = \beta_1 \text{GPA}_j + \beta_2 \text{Second work exp.}_j + \beta_3 \text{Internship}_j + \beta_4 \text{HasExtracurricular}_j + \delta_i + \gamma_j + \varepsilon_{ij} \quad (1)$$

where δ_i and γ_j represent subject and order fixed effects (i.e., how many resumes that subject had previously rated before resume j), respectively. We also test robustness to excluding these fixed effects. The coefficients from this equation provide an estimate of the average treatment effect of each resume element on employers' ratings.

The linear regression approach captures the direction and magnitude of the effects, but may not fully capture their relative importance compared to each other resume features. Such an approach may also not fully capture interactions across other coefficients. Thus, as a complementary approach, we conduct a Shapley decomposition, which offers a more flexible and interpretable approach (Shorrocks 1982; Wendelspiess Chávez Juárez 2015). It quantifies how much each variable (such as extracurriculars, GPA, or work experience) contributes to the model's explanatory power by calculating its marginal contribution to R^2 across all possible combinations of covariates. This allows us to measure the relative share of variance explained by each component in a way that accounts for overlapping contributions among predictors. This Shapley decomposition approach was not included in our original pre-analysis plan but is incorporated in the paper as an exploratory addition. We believe it adds value by helping to unpack which candidate characteristics matter most to employers when evaluating resumes.

Both the regression coefficients and the Shapley decomposition provide estimates of the average effects of each resume element on employers' ratings, but employer preferences are likely highly heterogeneous. We explore this heterogeneity in two related ways.

First, we emphasize this heterogeneity by studying the interactions between employer preferences and the characteristics of the position, the recruiter themselves, and the workplace. Along with these characteristics, to discern the signals employers infer from extracurriculars, we use variation in the amount of information we provided employers about candidate race (via name), income background (via high school information), and personality

[7] Candidate likelihood of accepting is primarily included in order to ensure that employers separate the question of likelihood of acceptance from their ratings of candidate interest.

(via taglines). By including interactions between these and the main resume elements, the analysis tests whether the value of extracurriculars changes depending on how much other information the employer receives. For example, if extracurriculars proxy for race when the candidate's race is ambiguous/unobservable, then their effect may diminish when the candidate's race is unambiguous/directly observable.

Second, given the potentially highly multidimensional nature of this heterogeneity, we explore it more fully using the causal forest method developed by Athey, Tibshirani, and Wager (2019), Tibshirani et al. (2025), and Wager and Athey (2018). This method allows us to create a highly flexible, nonparametric approach to estimating treatment effects and allows us to predict conditional average treatment effects for each employer, conditional on their characteristics. This allows us to further understand the potentially complex interactions between things like job characteristics, employer characteristics, and resume contents.

As described in technical detail in Athey, Tibshirani, and Wager (2019), we use a series of regression trees to explore treatment effect heterogeneity in our data. Each regression tree is formed by recursively splitting the data into subgroups ("leaves") in a way that maximizes the heterogeneity between resulting subgroups. To avoid overfitting, these trees are trained on are trained on a 50% sample of the data and tested on a 50% testing subset. This splitting allows us to create comparisons between employers "treated" by a given resume element and comparison employers in the same subgroup, who have similar sets of relevant characteristics. We build a forest of 2000 trees in order to create weights for these comparisons according to how often employers share a leaf (how similar they are in relevant characteristics). This allows us to identify treatment effect heterogeneity by identifying treatment effects for different subgroups of observations. To ensure the trees are "honest" predictors of treatment effects, we additionally create a 50% training/test split between the observations used to develop each tree and the observations used to estimate the treatment effects. Because of its function in selecting the most relevant characteristics for treatment effect heterogeneity, this method is particularly well-suited to an exploratory case like ours, where we have rich data on resumes and employers' characteristics and seek to identify the most important patterns in employers' responses.

4.2 Experimental evidence on employer preferences

Using the regression outlined in the previous section, in this section, we analyze employers' preferences over candidates' characteristics. We find that employers are more interested

in hiring candidates with higher GPAs, more work experiences, internship-type experiences, and extracurricular activities, with having an extracurricular activity increasing interest by as much as 0.5-0.9 GPA points and by as much as an internship-type experience rather than a non-professional experience. Employers report that candidate with more work experiences are more likely to accept their position if offered. They show a positive willingness to pay for candidates with internship-type experiences, perhaps reflecting that these characteristics help employers differentiate between top candidates they are interested in hiring.

We find that employers are more interested in candidates with each of the main resume elements studied. Table 2 shows the regression based on Equation 1, where employer hiring interest is examined as a function of the GPA, and whether or not the resume includes a second work experience, an internship-type experience (relative to a non-professional experience), and an extracurricular activity.

In contrast to findings in other contexts, although we find that all of these resume elements play a role in employer interest, a second work experience (i.e., an additional, non-professional "work for money" experience) plays the largest role. This finding stands in contrast to that by Kessler, Low, and Sullivan (2019), who find that, in the elite university context, "work for money" experiences (such as the second work experience in our exercise) did not increase employer interest. While Kessler, Low, and Sullivan (2019) find that this kind of work experience increases interest by only as much as 0.07 GPA points (statistically insignificant), our results in Table 2 indicate that this kind of work experience increases interest by as much as 1.6 GPA points in our context.

Another way to quantify the magnitude of the importance of this resume element is, following Kessler, Low, and Sullivan (2019), to imagine that employers use an interest threshold to decide whether to call candidates back for further consideration. Supposing that employers call back candidates for whom they report an interest of at least 6, a second work experience would increase callbacks by 4.7 percentage points, or 13% relative to the mean callback rate of 35%. Alternative thresholds appear in Appendix Figure D.3. This stark finding, which differs from prior work, highlights value of better understanding this understudied context.

Beyond this finding on the importance of non-professional experiences, we emphasize another novel finding: employers also place a high value on extracurricular activities. The presence of an extracurricular activity on a resume (relative to no extracurricular activity) increases employer interest by about 0.14 points, which is about 3.3% of average interest. This is equivalent to the increase in interest corresponding to a 0.9 point increase in candidate GPA, and it is as large as the impact of having an internship-type experience relative

Table 2: Employer responses and resume elements

	(1) Interest	(2) Likelihood to accept	(3) Willingness to pay	(4) IHS(WTP)
GPA	0.154*	0.0658	0.548	0.0347
	(0.0820)	(0.0735)	(0.421)	(0.0340)
Has second work exp.	0.245***	0.201***	0.295	0.0190
	(0.0524)	(0.0488)	(0.285)	(0.0245)
Has intern-type experience	0.140***	0.0241	0.710***	0.0493**
	(0.0532)	(0.0510)	(0.252)	(0.0214)
Has extracurricular	0.140**	0.0778	-0.286	-0.0371
	(0.0542)	(0.0518)	(0.311)	(0.0267)
Dependent variable mean	4.184	3.704	28.70	3.173
Dependent variable SD	2.938	2.674	21.65	1.858
Observations	7158	7158	7158	7158

Notes: This table shows the association between resume characteristics and employer responses. The dependent variable in each regression is noted: interest represents the employer's interest in hiring the candidate on a scale of 1-10, likelihood to accept represents the employer's belief about a candidate's likelihood of accepting their position on a scale of 1-10, willingness to pay represents the highest annual salary the employer would be willing to pay this candidate in thousands of dollars, and IHS(WTP) is the inverse hyperbolic sine of this. Standard errors clustered at the respondent level in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

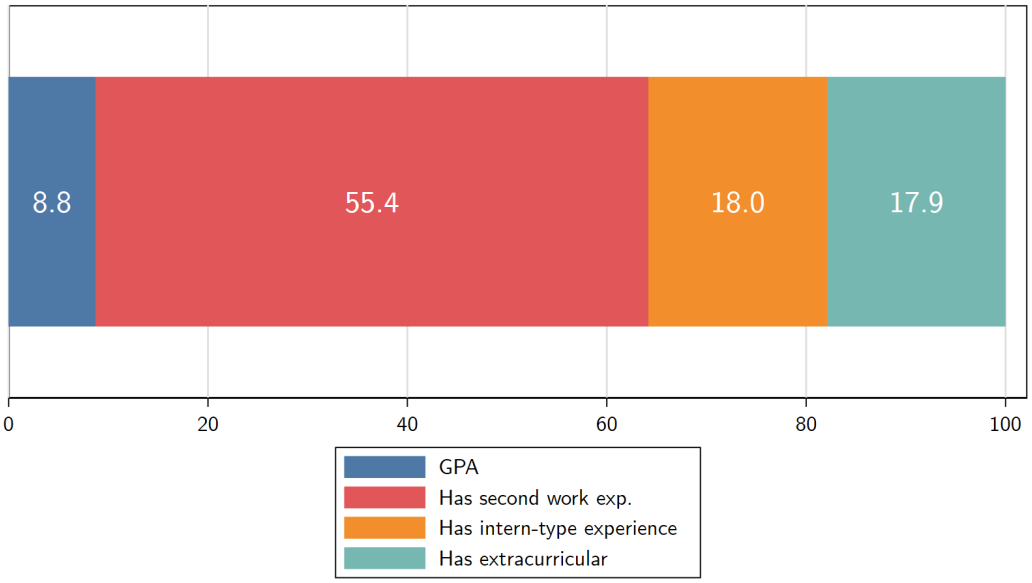
to a non-professional experience. In our hypothetical callback analysis, an extracurricular increases callbacks up to 2.9 percentage points (Appendix Figure D.3). This highlights the important role extracurriculars may play in the hiring process, and we further examine possible mechanisms for employers' reliance on extracurriculars in the following analyses.

Appendix Table D.1 tests the robustness of the results on employers' interest. Column (1) repeats the results on employer interest from Table 2. Including subject fixed effects as in Column (2) substantially changes the size of the coefficient on the GPA, reducing it by half, but does not result in economically important changes to the coefficient sizes on the other resume characteristics. This suggests that within-employer average interest levels may be correlated with the importance they place on GPAs. Adding controls for resume order, removing employers who had a low variance in their interest rankings, who did not finish their 40 rankings, or those who completed the survey in under 1/4 the median time do not substantially affect the results.

To summarize the relative importance that employers give to resume elements, Figure 3 shows a Shapley decomposition of how much each resume element contributes to employer interest. As would be expected from the relative size of the coefficients in the main results, having a second work experience accounts for the largest share (55.4%), followed by internship-type experiences (18.0%), extracurricular activities (17.9%), and GPA (8.8%).

These results highlight that prior work experience plays a dominant role in driving employer evaluations, with academic performance and other resume traits contributing meaningfully but to a lesser extent.

Figure 3: Shapley decomposition of the importance employers place on various resume components



Notes: This figure shows the results of a Shapley decomposition of the regression of employer's interest in hiring a candidate on resume characteristics. Each bar and number represent the percent of the regression R^2 explained by the corresponding resume element.

Along with studying employers' interest in particular candidates, we also assess their beliefs about the likelihood that a candidate would take a certain position. As in Kessler, Low, and Sullivan (2019), this question helps to ensure that employers separate their interest in a candidate from their expectations about likelihood of being able to recruit such a candidate. Table 2 shows that employers find candidates with more work experiences to be more likely to accept the position they are offering. In general, employers report that they believe candidates have a low likelihood of accepting their positions, with an average likelihood of 3.7 out of 10, compared with an average employer interest of 4.2 out of 10. Employers believe that candidates with a second work experience, which is always a non-professional experience, are more likely to accept, with a coefficient of 0.201, or a 5.4% increase relative to the mean likelihood. However, likelihood to accept is not significantly associated with other resume elements, but coefficients are positive in all cases. The presence of a second work experience may signal to the employer that the candidate is interested and

willing to work in their position.

Given that employers are more interested in candidates with certain qualifications, we attempt to quantify this interest in monetary terms by assessing employers' willingness to pay for each candidate. We find some evidence that employers also exhibit a high willingness to pay for candidates with internship-type experiences, but not for other characteristics. It should be noted that employers' average willingness-to-pay to hire particular candidates, $28,690, is substantially lower than the average salary employers reported that they expected to offer for their positions, which was $42,356. This may reflect that employers only expect to offer salaries to candidates who meet a certain threshold (approximately 22% of willingness-to-pay responses are zeros). On average, employers are willing to pay an additional $710 per year to candidates with internship-type experiences. This is about 4.9% when using the inverse hyperbolic sine of willingness to pay.[8] Although internship-type experiences are the least important characteristic for predicting employer interest in a candidate, they are important for predicting willingness to pay.

These results do not contradict the results on employers' interest, but rather mask substantial heterogeneity in employers' willingness to pay. This heterogeneity is the subject of the next section.

4.3 Heterogeneity in employer preferences

Having shown evidence about the average preferences of employers we next ask whether these preferences vary between employers of different types. In this section, we find evidence that employers' preferences vary significantly across job characteristics, with employers offering highly-paid positions putting more weight on internships and GPA and employers offering lower-paid positions putting more weight on the number of work experiences and extracurriculars. Preferences also vary substantially with employers' personal characteristics, including years of experience, education, race, and gender, highlighting the important role that individual recruiters' preferences may play in evaluating candidates.

First, we show that employers' preferences vary according to the characteristics of the position for which the employers are hiring, including whether the position offered above the average salary. Columns (1) and (2) of Table 3 show results from the same regression of employer interest on resume characteristics used above, split by characteristics of the position

[8] Although not pre-specified, we make the common inverse hyperbolic sine transformation of employers' willingness to pay to test robustness and ease comparability with other work.

for which the employer is hiring. Employers hiring for positions offering an annual salary higher than the average in our sample place a much higher weight on GPA and internship-type experiences, with little emphasis on extracurriculars. In contrast, employers hiring for positions offering lower than the average annual salary place much more emphasis on the number of past work experiences and extracurriculars, with little weight on GPA and internship-type experiences.[9] This highlights that preferences vary substantially between different types of employers, with above-average-salary employers placing weight on a very different set of characteristics than below-average-salary employers. For example, although we found above that the average employer in our sample is significantly more interested in candidates who have higher GPAs and at least one extracurricular, this is not true of all employers. Instead, some employers place a very high weight on these elements, while others place almost no weight on them.

Beyond differences by salary, we also find evidence that employer preferences are weaker for employers reviewing Science majors and those reviewing Social Science and Humanities (SSH) majors.[10] The results split by Science and SSH appear in columns (3) and (4) of Table 3. This is consistent with a pattern in which those reviewing Science resumes may screen resumes based on major or specific skills only, as they may be hiring for specialized technical positions. In our sample, these employers are much more likely to report being interested in one or a few majors only (53%) than those reviewing SSH resumes (21%) and thus may primarily screen resumes on major only. Accordingly, the average interest is also much lower for Science resumes (3.4 compared to 4.8). A similar issue is described by Kessler, Low, and Sullivan (2019). The variation in employer preferences by sector is highlighted in Appendix Figure D.4, which plots employers' coefficients by sector for the five most common sectors in our sample.

Variation is employer preferences is not limited to the characteristics of the job for which they are hiring: we also substantial heterogeneity by employers' personal characteristics. Appendix Table D.3 presents results according to the characteristics of the recruiter responding to our survey. Given that individuals who play different roles in a firm may evaluate candidates differently, we first test for differences according to whether the individual reports being typically involved in screening resumes in their firm and find no differences. Along with their roles in their firms, employers' preferences may also depend on learning about

[9] Appendix Table D.2 uses an interaction term to test whether the differences in how employers evaluate resume elements are significantly different between the two groups and confirms that they are.

[10] Again, Appendix Table D.2 confirms that the differences in how employers evaluate second work experiences and extracurriculars are statistically significant.

Table 3: Heterogeneity in employer interest by job characteristics

	(1) Above avg. salary	(2) Below avg. salary	(3) Science	(4) Social science and hum.
GPA	0.360***	-0.0447	0.178	0.132
	(0.118)	(0.112)	(0.125)	(0.111)
Has second work exp.	0.0916	0.399***	0.0808	0.404***
	(0.0616)	(0.0805)	(0.0702)	(0.0754)
Has intern-type experience	0.260***	0.0312	0.140*	0.138*
	(0.0664)	(0.0807)	(0.0724)	(0.0775)
Has extracurricular	0.00315	0.283***	-0.0199	0.267***
	(0.0736)	(0.0791)	(0.0810)	(0.0711)
Dependent variable mean	3.374	4.978	3.419	4.837
Dependent variable SD	2.905	2.746	2.823	2.876
Observations	3543	3615	3300	3858

Notes: This table shows heterogeneity in employers' preferences according to characteristics of the position for which they are hiring. The dependent variable is the employer's interest in hiring the candidate on a scale of 1-10. Each column represents a subsample of observations. Column (1) contains those hiring for a position with an annual salary higher than the average in our sample, column (2) contains those with an annual salary below average, column (3) contains those reviewing science resumes, and column (4) contains those reviewing social science and humanities resumes. Standard errors clustered at the respondent level in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

the quality of candidates they evaluate overtime. As such, we study differences between employers who have above the average years of experience in our sample relative to those with below-average experience. We find that employers with fewer than average years of experience in recruiting are more likely to value extracurriculars, while those with above average years of experience place almost no weight on these.

Turning to employers' education and demographic characteristics, the evidence suggests that employers' preferences may depend on the other qualitative similarities employers have with candidates and their backgrounds. Appendix Table D.3 shows that employers who are themselves alumni of the university we study place a much higher value on extracurriculars than other employers (and, in fact, value these more than a second work experience or an internship-type experience). Meanwhile, preferences over other candidate characteristics are more similar between the groups. There are several possible explanations for this: it may be that information about the nature and quality of extracurricular activities may be difficult for non-alumni to assess, or it may be that employers value similarity to themselves, preferring students participating in activities they also took part in at their university. In a similar vein, we also find that employers weigh extracurriculars more if their own race matches that indicated by the resume to be evaluated.

What explains why employers' preferences vary, and, especially, why their preferences over extracurriculars vary so much? We add additional insights on the role of information on extracurriculars—an element of students' resumes that has not been systematically studied in previous research, even though extracurriculars/hobbies are a core part of individuals' time use and network formation, especially for undergraduate students. Extracurriculars can also have highly raced and classed aspects,[11] which may play a role in hiring.[12] In Appendix E, we further unpack this by exploring whether the information content of the resumes affects employers' preferences and, particularly, their preferences for extracurriculars. We find that employers place a high value, in particular, on sports and volunteer activities relative to academic activities. Employers who report using extracurriculars to evaluate non-cognitive skills place an especially high value on sports. However, we find limited evidence that employers use extracurriculars to evaluate candidates' socioeconomic status, personality, or race in the absence of other signals of these available on the resume.

How can we further summarize these dimensions of heterogeneity? We use the causal forest approach described in Section 4.1 to explore how employers' preferences according to the characteristics studied above.

A striking pattern emerges from this exploration: employers hiring for generalist, lower-paying positions place much more emphasis on extracurriculars and having additional "work-for-money" work experiences than their counterparts. Figure 4 demonstrates this by plotting the relationship between employers' preferences for a second work experience, the salary they expect to offer for the position, and the number of student majors they were open to hiring from. The results show that a second work experience and an extracurricular on the resume increase employers' interest the most for employers offering low salaries and willing to hire from any major.[13] For employers hiring for more specialized, more highly-paid positions, additional work experiences still have a small positive effect, while the effect of an extracurricular becomes close to zero for the highest-paying, most specific positions.

However, Figure 4 also shows that, even when employers value additional work experiences and extracurriculars, they generally have a low willingness to pay for these character-

[11] Previous descriptive studies find that higher income and white households spend significantly higher amounts on kids' sports, particularly in travel/elite or club and in sports with expensive equipment relative to lower income families and Black households, whose children are more likely to participate in free-play/community settings or cheaper sports. See Institute (2019), Institute (n.d.), Aspen Institute (2022), and NSGA (2014). The racial composition of college sports teams that focus on more expensive sports also tends to skew white (Morrison 2021).

[12] See Rivera (2011).

[13] Some very low salaries can be explained by temporary positions, e.g., summer internships.

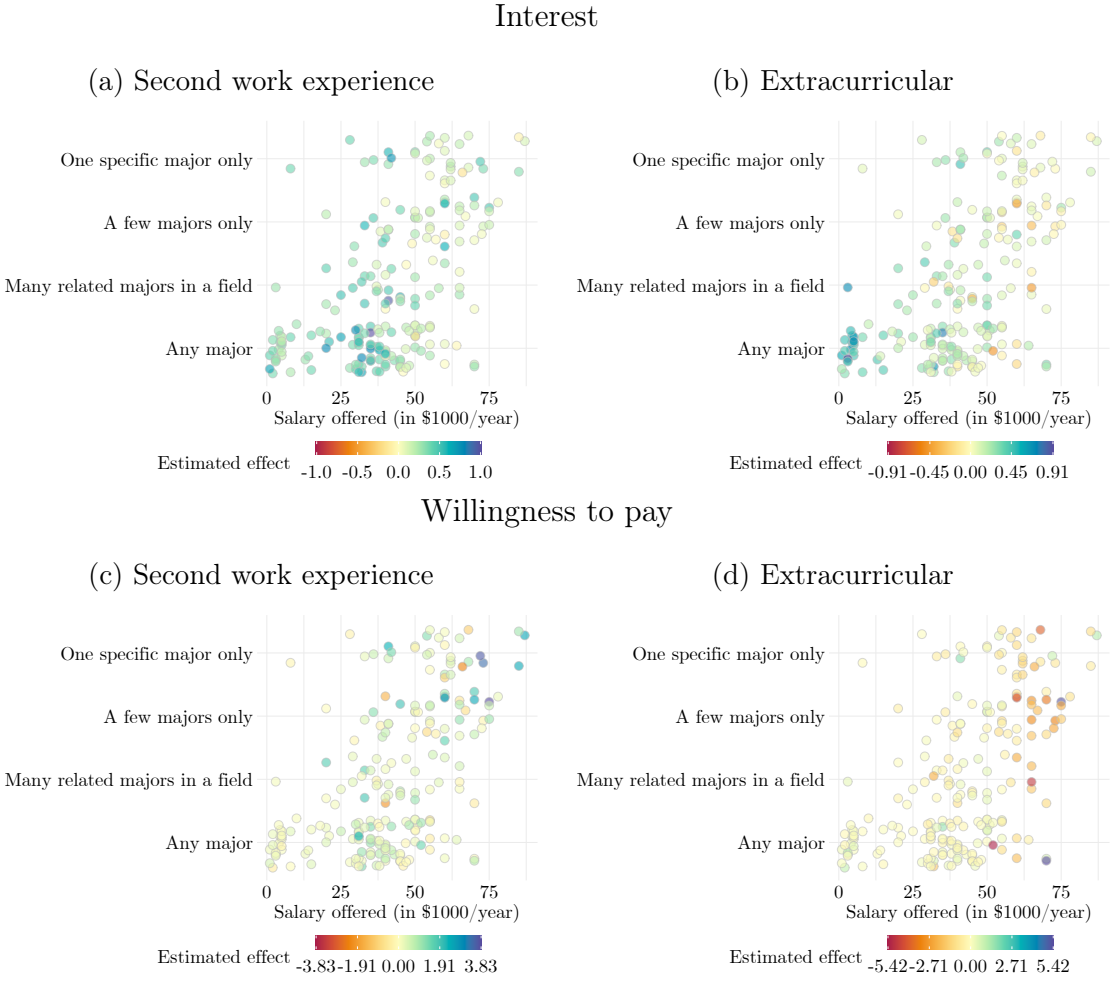
istics. This may reflect, in part, their smaller base expected salary offers, as well as perhaps reflecting less wage flexibility or a larger pool of competitive candidates for these jobs. This analysis helps explain the otherwise conflicting result of increased interest in resumes with these characteristics but a lack of willingness to pay for them.

Meanwhile, we find that nearly all employers except those offering very low salaries (possibly hiring for temporary positions) place a high value on GPA and internship-type experiences. These results appear in Figure 5, which plots employers' preferences for GPA and internship-type experiences against their expected salary offers and their major selectiveness. The figure shows that GPA and internship-type experiences increase employer interest for nearly all employers in the sample.

However, only employers hiring for highly-specialized, high-paying positions, often in the sciences rather than social sciences and humanities, exhibit strong willingness to pay for these characteristics. In particular, Figure 5 shows that employers offering salaries over about $50,000 per year are often willing to pay several thousand dollars per year more to candidates with prior internship experience, while employers offering less than this have lower willingness-to-pay. This heterogeneity too helps to explain the average null willingness to pay for internship experiences.

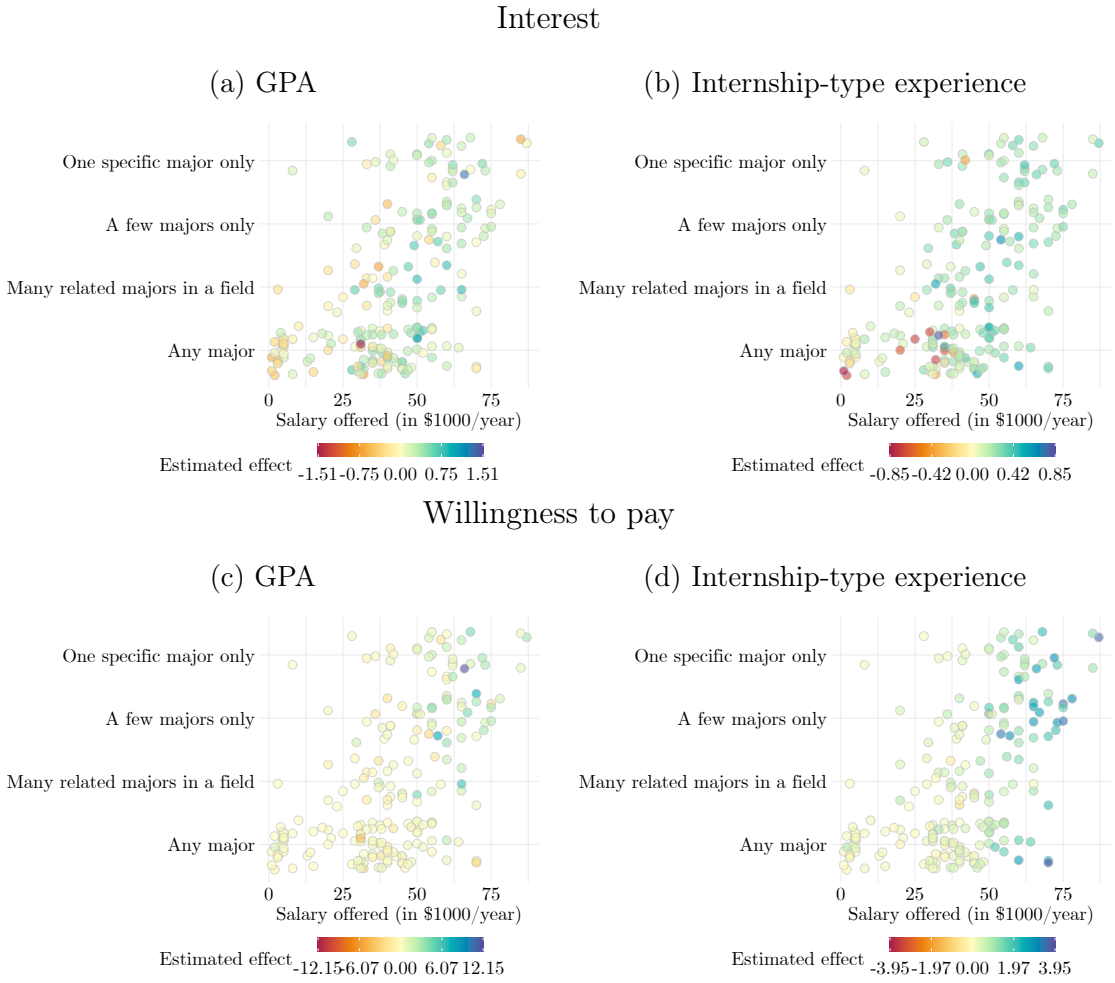
Finally, we also test for evidence of employer heterogeneity by using a LASSO regression to discern important elements of heterogeneity. We use the heteroskedastic plugin penalty parameter (λ) developed by Belloni et al. (2012). In a regression interacting all of the above employer characteristics with the four main resume elements, we find that 5 coefficients receive non-zero values, confirming that the division between major types and by salary are among the most important elements of heterogeneity.

Figure 4: Heterogeneity in employers' interest and willingness to pay for work experience and extracurriculars



Notes: This figure shows the results of the causal forest analysis described in this section. It plots an employer's preferences according to their specificity in considering candidates of different majors and the salary they report offering for the position. Estimated effects correspond to the effect of the resume characteristic on employer's interest in or willingness to pay for a candidate. Panel (a) plots the effect of a second work experience on interest, panel (b) the effect of an extracurricular on interest, panel (c) the effect of a second work experience on willingness to pay, and panel (d) the effect of an extracurricular on willingness to pay. Points are jittered along the y-axis for visual clarity.

Figure 5: Heterogeneity in employers' interest and willingness to pay for GPA and internship-type experiences



Notes: This figure shows the results of the causal forest analysis described in this section. It plots an employer's preferences according to their specificity in considering candidates of different majors and the salary they report offering for the position. Estimated effects correspond to the effect of the resume characteristic on employer's interest in or willingness to pay for a candidate. Panel (a) plots the effect of GPA on interest, panel (b) the effect of an internship-type experience on interest, panel (c) the effect of GPA on willingness to pay, and panel (d) the effect of an internship-type experience on willingness to pay. Points are jittered along the y-axis for visual clarity.

5 Students' beliefs about employer preferences

Having studied employers' preferences for different resume elements, we now turn to the question of students' beliefs about those resumes. We construct a measure of students' information quality based on the experimental results. We also develop a complementary measure from the 100-point allocation exercise; the full results for this second measure appear in Appendix Section F. We show that students' beliefs about employer preferences correlate with their time use.

5.1 Design of student experiment

To capture students' beliefs, we introduce a new design based on the IRR method, in which students are incentivized to report their beliefs about employers. We also collect detailed demographic information about both employers and students, and also follow up with the on outcomes from the respective year's recruiting cycle.

In order to investigate whether students understand employer preferences, we conducted a similar IRR exercise on students. Students were recruited via direct emails from the career center offering them the opportunity to participate in a paid study on the job search process. The invitation email appears in Appendix A.

As in the IRR exercise designed for employers, each participating student evaluated 20 hypothetical resumes. Throughout the exercise, students were asked to anchor their responses to their beliefs about a single employer about which they would be well-informed. This is key to the exercise to ensure that student preferences represent their beliefs about employer preferences, holding the type of employer constant across resumes, rather than, for example, imagining different employers that might be interested in each resume. Specifically, students were asked to choose two types of employers that were closest to their own job search, drawn across industries from common types arising in our employer sample, and were randomly assigned to complete the exercise with that employer in mind. Students were reminded frequently throughout the exercise to bear this single employer in mind as they completed the ratings.

To increase power and corresponding to the most informative resumes, students viewed resumes that were constructed with non-ambiguous names, high school identifiers, and neutral taglines, and rated their perceived desirability from the standpoint of an employer. In addition to these Likert scale evaluations, students were asked to allocate 100 hypo-

thetical points across key resume attributes (e.g., GPA, work experience, extracurricular involvement), reflecting their beliefs about the relative importance employers place on each element.

Participants received a $15 base compensation for participating in this survey, and were further offered additional pay to incentivize effort: in each of the two waves, the top-performing student—based on how closely their ratings on the hypothetical resumes approximated actual employer responses—received a $50 prize, the next 4 students won $25 each, and the following 10 students won $15 each. This incentive scheme was designed to elicit thoughtful and effortful responses while preserving variation in prediction accuracy across the sample.

Our second student survey had about 515 respondents in both rounds. In addition to having students complete a similar IRR exercise as employers, we also asked them additional questions about the size and homogeneity of their social circles to enable us to analyze how the size and homogeneity of students' social circles relates to (in)accurate beliefs about the labor market.

The third student survey was sent to students near the end of the on-campus recruiting cycle (in May 2024 and 2025 for rounds 1 and 2, respectively). We asked students about the outcomes of their internship/job search (e.g., how many offers they got, salaries, etc.).

5.2 Student sample and representativeness

We received 951 complete responses from students in the main IRR exercise. For participants who provided their demographic information, Table 4 summarizes the demographic and socioeconomic characteristics of the students in our sample. Most students identify as female (62%), while 32% identify as male and about 5% as non-binary or third gender.[14] The sample is predominantly white (83%), with smaller shares identifying as multi-racial or another race (8%), Black or African American (6%), Asian (2.5%), and American Indian or Alaska Native (1%). About 35% of students are first-generation college students, and 47% report receiving Pell grants, indicating that a substantial share come from lower-income backgrounds.

Overall, this sample is fairly representative of the broader university student body in recent years. The share of first-generation students is slightly over a third in our sample and also in the student body profile. Our sample somewhat overrepresents Pell grant recipients,

[14]Multiple gender responses were allowed to best capture students' gender.

with 47% of our sample receiving these compared with about a third from the population. Our sample also somewhat overrepresents White students. In terms of gender, the sample includes 62% female students, which is roughly similar to the share in the population. Data obtained from the career center for the 2023-2024 academic year indicate that the average GPA was 3.33 among seniors and 3.25 among juniors. In our sample, students self-report an average GPA of 3.52, within 0.43-0.61 SD of these figures. Overall, the sample is broadly representative of the student body on key dimensions relevant to our analysis.

Table 4: Summary statistics for student sample

	N	Mean	SD	Min	Max
Female	930	0.62	0.49	0	1
Male	930	0.32	0.47	0	1
Non-binary/third gender	930	0.05	0.21	0	1
Asian	904	0.02	0.15	0	1
Black or African American	904	0.06	0.23	0	1
American Indian or Alaska Native	904	0.01	0.10	0	1
White	904	0.83	0.38	0	1
Multi-racial or Other	904	0.08	0.27	0	1
First-generation college student	925	0.35	0.48	0	1
Receives Pell grants	803	0.47	0.50	0	1
Self-reported GPA	914	3.52	0.44	1.7	4.9

Notes: This table shows descriptive statistics on the students who participated in the experiment. Observations differ due to attrition and non-response during the survey. Attrition is further discussed in Appendix C.

Finally, we collected job outcomes for 229 students (36%) from May-Sept 2024 in Wave 1, and from 175 students (28%) in Wave 2. The data from these returnees help us quantify the relationship between students (mis)perceptions about employer preferences and their job search outcomes. While participation in follow-up surveys is limited, we find no evidence of attrition in reporting job outcomes correlated with students' characteristics (see Appendix C).

5.3 Student beliefs about employer preferences

In this section, we show that students place a high and positive value on GPA, number of work experiences, internship-type experiences, and extracurriculars, with coefficients gener-

ally larger than those estimated for employers. Relative to employers, students overestimate the importance of internship-type experiences.

We find that students think that GPA, prior work experience, internship-type experience, and extracurriculars all positively influence employer interest. Table 5 shows the main results for students' beliefs about employer preferences. GPA and internship-type experience receive the largest estimated effects, followed by second work experience and extracurriculars. Students also believe that employers are highly willing to pay for these characteristics, especially for internship-type experiences and GPA. It is also worth noting that students believe employers have a high willingness to pay overall, with a mean of $36,770 compared to employers' $28,690. The results are stable across different robustness checks, including removing subject fixed effects, removing controls for resume order, and excluding certain response types (Appendix Table G.4).

Table 5: Student beliefs about employer preferences

	(1)	(2)	(3)
	Interest	Willingness to pay	IHS(WTP)
GPA	0.702***	2.483***	0.0782***
	(0.0517)	(0.305)	(0.0166)
Has second work exp.	0.477***	1.567***	0.0608***
	(0.0312)	(0.183)	(0.00962)
Has intern-type experience	0.649***	2.319***	0.0948***
	(0.0333)	(0.198)	(0.0120)
Has extracurricular	0.328***	1.075***	0.0377***
	(0.0300)	(0.170)	(0.0102)
Dependent variable mean	4.905	36.77	4.015
Dependent variable SD	2.459	19.41	1.066
Observations	20772	20772	20772

Standard errors in parentheses

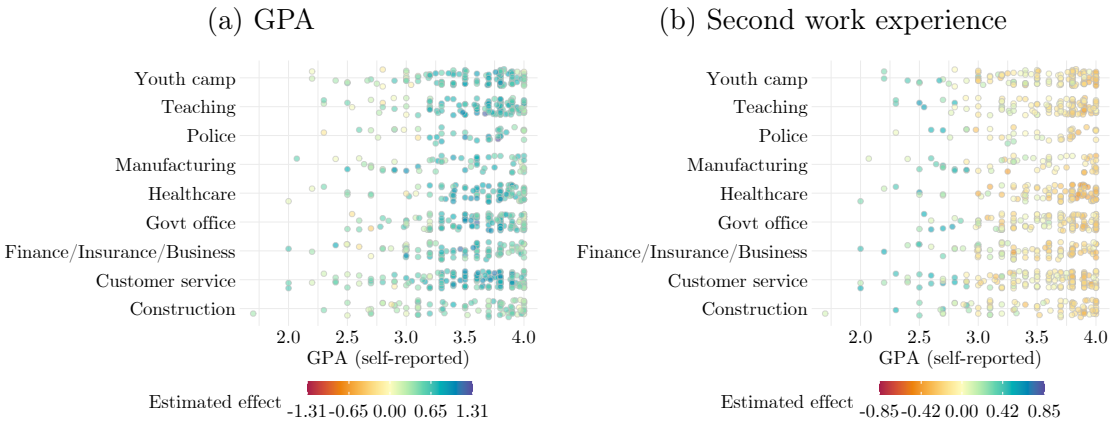
* $p < .1$, ** $p < .05$, *** $p < .01$

Notes: This table shows the association between students' beliefs about employers' preferences and resume characteristics. The dependent variable in each regression is noted: interest represents the student's belief about the employer's interest in hiring the candidate on a scale of 1-10, willingness to pay represents the student's belief about the highest annual salary the employer would be willing to pay this candidate in thousands of dollars, and IHS(WTP) is the inverse hyperbolic sine of this. Standard errors clustered at the respondent level in parentheses * $p < .1$, ** $p < .05$, *** $p < .01$

As for employers, these average preferences mask substantial heterogeneity in students' beliefs, but along very different dimensions than for employers. A causal forest approach analogous to that developed for employers reveals little heterogeneity in students' beliefs

Figure 6: Heterogeneity in students' beliefs

Interest



Notes: This figure shows the results of the causal forest analysis described in this section. It plots a student's beliefs about employer preferences according to the job sector the student anchored to for the exercise and the student's GPA as self-reported in our survey. Estimated effects correspond to a student's belief about the effect of the resume characteristic on employer's interest in a candidate. Panel (a) plots beliefs about GPA and panel (b) plots beliefs about a second work experience. Points are jittered along the y-axis for visual clarity.

according to the type of employer they have in mind. Instead, across types of employers/positions, we find that students' GPA is consistently one of the most important predictors of heterogeneity in beliefs. For example, Figure 6 plots students' beliefs about employers' interest in GPA and a second work experience. The figure shows clearly that students with high GPAs themselves believe that employers place higher weight on GPA and less—even negative— weight on a second work experience. Despite the strong heterogeneity by type of position we found in the employer results, student beliefs are largely similar regardless of the type of employer/position the student was instructed to focus on.

Besides GPA, students' beliefs are not highly heterogenous by their other personal characteristics or demographics.

In order to show the relevance of these measures of students' beliefs, we next study whether their beliefs as measured by this exercise map to their choices on time use and presentation on their resumes. In our survey, we asked students to report the time they spent on several activities in a typical week during the academic year. We study whether these measures correlate with students' beliefs about employer preferences, as measured by the IRR exercise, in order to show that this measure captures an aspect relevant to students' choices in the real world. We analyze the relationship between beliefs and time use by regressing

students' coefficients derived from the individual-level version of the regression above on their outcomes. This analysis is not causal (that is, it does not imply that students' beliefs drive their choices). Instead, for example, motivated reasoning may lead students who spend more time on certain activities to value those activities in the resume rating exercise. Even though this exercise is correlational, it demonstrates that student beliefs about employer preferences are related to the choices they make.

First focusing on academics, as in the causal forest results, we show that students who place more weight on GPA tend to have higher GPAs themselves. Column (1) of Table 6 shows that there is no correlation between students' beliefs and the time they spend on academic activities. However, column (2) shows that students who place more emphasis on GPA do report higher GPAs in our survey: a 1 standard deviation larger coefficient on GPA in the IRR exercise is associated with a 0.05 increase in GPA, or about a 1.5% increase. Column (3) uses the limited sample of resumes we collected from students to study whether beliefs are associated with the elements students put on their resumes. We find that only 60% of students list their GPA on their resumes. Although the results lack power due to the small sample size of resumes we collected and can link to students' responses, students who place more emphasis on GPA are less likely to hide their GPAs from employers.

Turning from academics to internships and work experience, we show that students who place more weight on internships are more likely to work part-time during the academic year. Column (4) shows that a 1 SD larger coefficient on internship is associated with a 3.3 percentage point increase in the probability of working at a job or internship between 1 and 30 hours per week during the academic year. Meanwhile, students who place more weight on GPA are less likely to work during the academic year, perhaps reflecting tradeoffs students make about their time use.

Finally, with respect to extracurriculars, there is little association between students' beliefs about extracurriculars and the time they spend on those activities. In column (6) is reflected in their time use (time spent on organized group activities, organized college-level athletics, or amateur group athletics). This is consistent with a story in which students' motivation for participating in extracurriculars is not employment-focused but rather for other purposes, like enjoyment, exercise, and socializing. At the same time, column (7) suggests a positive relationship between beliefs about the importance of a second work experience and extracurricular participation. Column (8) shows that, while 8% of students tell us they participate in activities that are not on their resumes, this behavior is not correlated with their beliefs.

Table 6: Students' beliefs about employer preferences and time use

	(1) Academic hours/week	(2) Self-reported GPA	(3) Hide GPA on resume	(4) Work 1-30 hours/week	(5) Work over 30 hours/week	(6) Spent time on extracurriculars	(7) Self-reported extracurricular	(8) Hide extracurricular on resume
Std. coef. on GPA	-0.484	0.0552***	-0.0908	-0.0283*	-0.0238**	0.0301*	0.00728	-0.00719
	(0.567)	(0.0160)	(0.0952)	(0.0163)	(0.0115)	(0.0153)	(0.0118)	(0.00901)
Std. coef. on second work exp.	-0.191	-0.0165	0.104	0.00504	-0.0213*	-0.0122	0.0257**	-0.00392
	(0.563)	(0.0150)	(0.103)	(0.0168)	(0.0121)	(0.0163)	(0.0130)	(0.0108)
Std. coef. on internship	0.00264	-0.00778	-0.133	0.0331**	-0.0172	-0.0189	0.00800	-0.0103
	(0.576)	(0.0169)	(0.109)	(0.0168)	(0.0136)	(0.0162)	(0.0133)	(0.00945)
Std. coef. on extracurricular	0.585	0.0128	-0.0649	-0.0170	0.00195	0.0180	-0.0141	-0.00149
	(0.533)	(0.0161)	(0.121)	(0.0164)	(0.0130)	(0.0157)	(0.0129)	(0.00842)
Dependent variable mean	34.00	3.520	0.605	0.545	0.176	0.650	0.816	0.0874
Dependent variable SD	16.51	0.450	0.495	0.498	0.381	0.477	0.388	0.283
Observations	961	843	38	961	961	961	973	973

Notes: This table shows the association between students' beliefs about employers' preferences and students' time use. The dependent variable in each regression is noted: the outcome for column (1) the hours per week the students report spending on class or studying, column (2) is the student's self-reported GPA in the survey, column (3) is an indicator for whether the resume a student provided to us omitted their GPA, column (4) is an indicator for whether the student reported working up to 30 hours per week at a job, column (5) is whether the student reported working over 30 hours per week at a job, column (6) is whether the student reported spending time on extracurriculars, column (7) is whether the student reported participating in an extracurricular in the survey, and column (8) is whether the student reported having extracurriculars that were not on their resume. The independent variables are the students' standardized (mean 0, standard deviation 1) coefficients from a regression of interest on each resume characteristic. * $p < .1$, ** $p < .05$, *** $p < .01$

6 Developing a measure of information quality

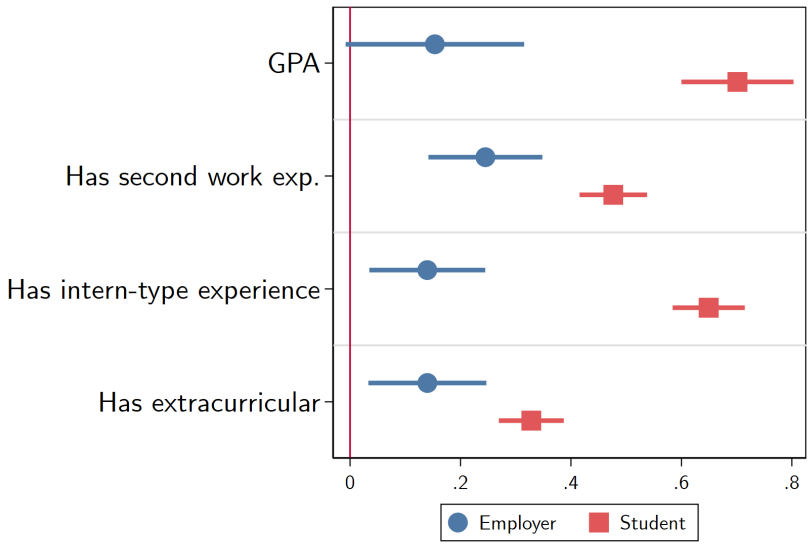
How do students' beliefs correspond with those of employers? In this section, we motivate and describe our primary approach to quantifying the quality of students' information about employers' preferences, based on our experimental results. We also construct a complementary measure from the 100-point allocation exercise completed by both employers and students, which captures stated preferences over a broader set of candidate characteristics including those we could not randomize (e.g., college prestige, culture fit, diversity); this measure and its results are presented in Appendix Section F. We show evidence that students with worse information by our primary measure also have worse job outcomes.

Our measure of students' information quality draws directly from the results of our experimental exercise. Comparing the results from the IRR exercise performed for employers and the exercise completed by students eliciting their beliefs, we find that students' perceptions differ substantially from employer preferences. As shown in Figure 7, across all four main resume features—GPA, second work experience, internship-type experience, and extracurriculars—the estimated coefficients for students are systematically higher than the magnitudes of coefficients from the employer regression. The gaps are especially large for internship experience, where students believe these factors matter far more than the number of work experiences. Notably, while employers place relatively high weight on second work experience (comparable to GPA), students view it as less important than internships or GPA. This mismatch suggests a clear information gap: students hold miscalibrated beliefs about what matters in hiring, particularly overestimating the importance of internship experiences.

To compare these coefficients on the same scale, Figure 8 shows the Shapley decomposition of the coefficients for both employers and students. This figure highlights the differences in relative weights for each. The figures show clearly that students place much more weight on internship-type experiences, with these explaining 44.7% of the regression R^2 for students, while they explain only 18.0% for employers. In contrast, students relatively overvalue the importance of GPA and undervalue the importance of the other elements (second work experience and extracurriculars).

The experimental data forms the basis for our main measure of information quality. For each student, we estimate their regression coefficients and calculate the absolute value of the difference from the employer coefficients in the base model. Given the heterogeneity we have documented in employers' preferences, we compare students' beliefs only to those of employers hiring for the same types of positions for which the student responded. The

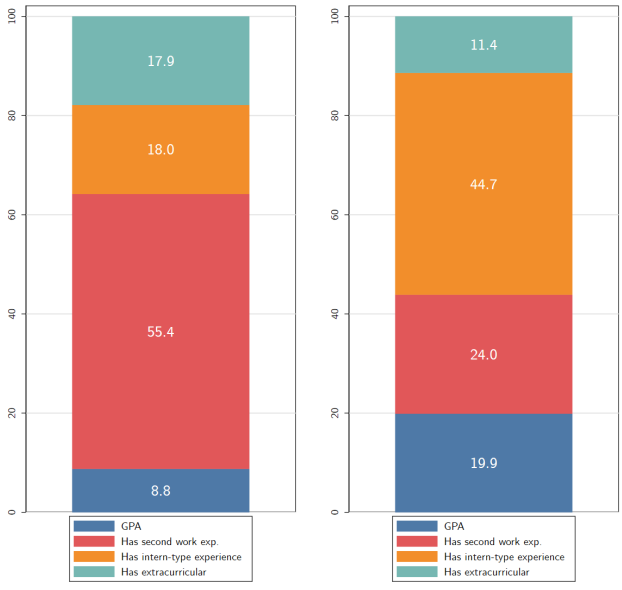
Figure 7: Comparing employer preferences with student perceptions



Notes: This figure plots the coefficients from a regression of interest on resume characteristics. The green circles represent the coefficients using employer responses, while the orange squares represent the coefficients using students' beliefs about employers' responses.

Figure 8: Shapley decomposition of employer and student interest

(a) Employers (b) Students



Notes: This figure shows the results of a Shapley decomposition of the regression of interest on resume characteristics. Panel (a) shows this decomposition for employers, while panel (b) shows it for students' beliefs about employers' interest. Each bar and number represent the percent of the regression R^2 explained by the corresponding resume element.

differences are reported in standard deviation units. We also calculate the Euclidean distance between the coefficients as a summary of the total distance between employer preferences and student beliefs.

In addition to this measure of information quality, we develop a complementary descriptive measure based on employers' and students' responses to the point-allocation exercise, which asked them to directly report the relative importance of different candidate characteristics. This measure offers a richer picture by capturing the importance of elements of candidates' profiles that were not randomized on the resumes, such the importance of diversity, culture fit, college prestige, and standardized test scores. More details on the construction of this measure, and the results corresponding to it, appear in Appendix F.

In our survey, we asked students to evaluate how informed they felt about the job search process, and we find little relationship between this measure and those we derived from comparisons with employers' responses. In Appendix G, we show that our experiment-based measure of information quality correlates only weakly with students' self-reports, suggesting that it captures something beyond what students think they know about the job search process.

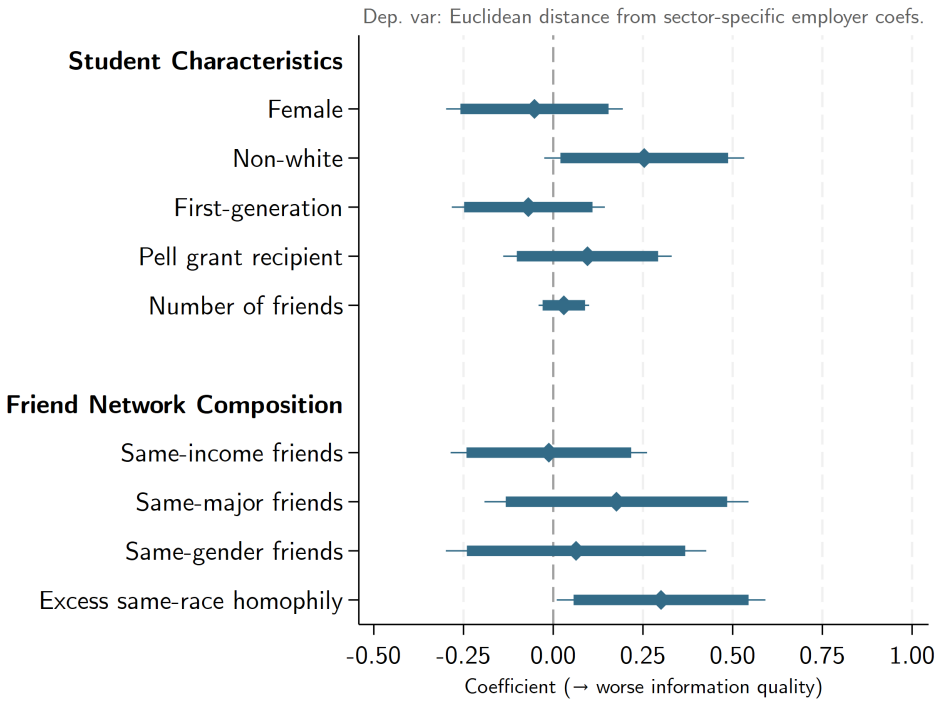
6.1 Patterns of information quality among students

Which students have better and worse information about employer preferences? Information is not uniformly spread between students. Figure 9 plots the predictors of miscalibration from a regression of our experiment-based information quality measure on student demographics and friend network composition. Two variables stand out. Among student characteristics, being non-white is the strongest predictor of worse information quality (larger distance from employers' coefficients), with a coefficient roughly twice the size of the next-largest (Pell grant recipient or first-generation status). Among network variables, excess same-race homophily (i.e., the share of same-race friends above what campus demographics alone would predict) is the clearest predictor of miscalibration, while similarity along gender, major, and income dimensions is not. The racial gaps are especially large in beliefs about how much employers value a second work experience.

That racial network composition is correlated with information but other forms of similarity do not is notable. We find that students whose friend groups are more racially homogeneous hold less accurate beliefs about employers' revealed preferences, a pattern consistent with diverse networks transmitting the kind of tacit information that job postings and career

fairs may not. Appendix Section G.1 presents the full regression results, including robustness to alternative controls and specifications.

Figure 9: Student attributes and Euclidean distance from employer coefficients



Notes: Coefficients from an OLS regression of information quality (Euclidean distance between student IRR coefficients and sector-specific employer coefficients) on student characteristics and friend network composition. Higher values indicate worse information quality. Thick bars show 90% confidence intervals; thin bars show 95% confidence intervals. Sector fixed effects included; standard errors clustered at the student level. N = 373. Excess same-race homophily is defined as the share of same-race friends minus a campus benchmark (75% for white students, 25% for non-white students).

6.2 The relationship between information quality and job search outcomes

Having constructed a measure of students' information quality, in this section, we examine the relationship between information quality and students' job search outcomes. We find that students with worse information have worse job outcomes, even after controlling for academics and demographics. Average results hide substantial heterogeneity in this relationship. Low-GPA students with worse information have a lower probability of getting a position than their peers with similar characteristics and better information. Meanwhile, for

high-GPA students relative to similar peers, worse information is linked to lower wages.

First, students' information quality relates to their job search behaviors, suggesting differentiation in how different types of students target employers. We find some evidence that students with worse information submit fewer applications. Table 7 shows coefficients from a regression of students' job search behaviors and outcomes on the experimentally-derived measure of information quality about each resume element, as well as the summary measure given by the Euclidean distance of students' coefficients from those of employers. Each regression also includes controls for the student's demographics (white, female, first generation student, Pell grant recipient, GPA, and extracurricular participation). The inclusion of controls helps disentangle whether the negative effects of information quality are correlated directly with student job search behavior or via time use and competitiveness of applications.

The results in column (1) highlight that, by these measures, students who are more incorrect in their beliefs about the importance of GPA tend to submit fewer job applications, with a 1 SD decrease in information quality (increase in coefficient distance) associated with 3.74 fewer job applications, over 24% relative to a mean of 15.1 applications per student. The magnitude of this estimate can also be compared to the magnitude of the estimated gender and GPA gaps in our data. In this sense, the relationship is large: a 1 SD decrease in information quality is associated with as many fewer applications as 0.36 GPA points or 51% of the gender gap. To summarize the relationship between information quality and job outcomes, the last panel of Table G.6 shows the association between an overall measure of information quality (the Euclidean distance from the employers' coefficients) and job outcomes. These results show that students with 1 SD worse information submit fewer applications (14%, although insignificant).

Along with this difference in application behavior between students, we study whether information quality correlates with results from job search. Column (2) of Table 7 shows that, overall, there is no significant association with the number of offers received per application, with a precisely estimated null association with the Euclidean distance measure. As such, students who have worse information—particularly, worse information about the importance of internships—tend to receive fewer offers. In particular, 1 SD worse information as measured by the Euclidean distance measure is associated with 6% fewer offers, but this is not significant. However, we note that we also observe no gender or GPA gap in the number of offers. This would be consistent with a story in which students' main differentiation in job outcomes is at the margin of applications rather than offers.

Meanwhile, information about the importance of number of work experiences is associ-

ated with a large reduction in the probability of having accepted a position (column 4) and an internship in particular (column 5). This result may be causally determined in either direction: students who do not understand the importance of a second work experience may be less likely to take summer internships that are not ideal, or they may be less competitive for these roles due to a lack of prior work experience. Appendix Table G.5 contains the results on all job outcomes and shows no evidence of a relationship with the number of interviews per application, full-time offers, accepting a job, or graduate school enrollment. Appendix Table G.6 highlights that these results are qualitatively similar when not including controls.

Having shown that students with worse information tend to submit fewer applications, we next find that they also receive lower wages for the jobs they accept. Table 8 shows evidence of a negative relationship between information quality and the wage offered to and accepted by students. Using the Euclidean distance summary measure of information quality, a 1 SD worsening in total information quality is associated with about a $2202 reduction in accepted annual wages. In our data, we find a gender gap of about 17% in wages, and note that the gap in wages with respect to 1 SD worse information is about 37% the size of this gender gap. The magnitude of this effect is also about as large as the difference associated with 1.3 GPA points, although the estimate for GPA is not significant. We find that, in particular, this negative association is driven by information about GPA and extracurriculars. A 1 SD worsening in information quality (increase in coefficient distance) with respect to GPA is associated with a reduction of $2025 in annual accepted wages, which represents almost a 6% reduction relative to the mean, and similarly for extracurriculars. However, this result is smaller and insignificant when transformed using an inverse hyperbolic sine.

Students with worse information quality also are more likely to have negotiated their offers, again revealing that they may have different job search behaviors. These results have the same sign, although more imprecisely estimated, when not including controls for student characteristics, as in Appendix Table G.7.

Given the stark heterogeneity in both employer preferences and students beliefs, we emphasize the important heterogeneity in the relationships between students' information and their job outcomes.

Using the causal forest approach once more to discover the important dimensions of heterogeneity, we again find that students' GPA is the most important dimension predicting this relationship. Figure 10 plots the estimated relationship between students' information and job outcomes against their GPAs. We find that low-GPA students with worse information are less likely to have accepted a position, with negative coefficients. For the lowest GPA

Table 7: Students' beliefs about employer preferences and job outcomes

	(1) Applications	(2) Offers/app	(3) Offers	(4) Accepted position	(5) Accepted intern.
Std. diff. of coef. on GPA	-3.743**	0.0310	-0.0620	0.0450+	0.00670
	(1.579)	(0.0338)	(0.119)	(0.0281)	(0.0218)
Std. diff. of coef. on second work exp.	1.680	-0.000473	-0.0544	-0.0548**	-0.101***
	(2.470)	(0.0318)	(0.0979)	(0.0265)	(0.0193)
Std. diff. of coef. on internship	-1.578	-0.0357	-0.226**	-0.00323	0.00394
	(1.362)	(0.0363)	(0.0926)	(0.0305)	(0.0262)
Std. diff. of coef. on extracurricular	1.607	0.0167	0.174	0.0135	0.0294
	(2.394)	(0.0398)	(0.159)	(0.0320)	(0.0242)
Female	-7.320*	0.0482	0.179	0.0264	0.0825+
	(3.945)	(0.0968)	(0.284)	(0.0641)	(0.0553)
GPA	-10.37*	-0.143	-0.840**	0.0626	0.0863+
	(5.336)	(0.221)	(0.409)	(0.0768)	(0.0665)
Dependent variable mean	15.10	0.478	2.049	0.561	0.272
Dependent variable SD	29.84	0.901	2.239	0.497	0.446
Observations	283	283	283	287	287

	(1) Applications	(2) Offers/app	(3) Offers	(4) Accepted position	(5) Accepted intern.
Euclidean distance from coefs. (SD)	-1.912	0.00211	-0.130	0.00897	-0.0261
	(1.855)	(0.0314)	(0.143)	(0.0278)	(0.0212)
Female	-5.397+	0.0446	0.186	0.0314	0.0857+
	(3.610)	(0.0966)	(0.278)	(0.0626)	(0.0527)
GPA	-9.611*	-0.131	-0.773*	0.0604	0.0581
	(5.110)	(0.214)	(0.400)	(0.0749)	(0.0638)
Dependent variable mean	14.01	0.478	2.049	0.547	0.256
Dependent variable SD	29.00	0.901	2.239	0.499	0.437
Observations	305	283	283	309	309

Notes: This table shows the association between students' misperceptions about employers' preferences and students' job outcomes. Controls include an indicator for whether the student is white, an indicator for whether the student is a first generation student (no parents completed college education), an indicator for whether the student is female, an indicator for whether the student receives Pell grants, the student's GPA, and an indicator for whether the student participated in an extracurricular activity. The dependent variable in each regression is noted: the outcome for column (1) is the number of applications the student submitted, column (2) is the number of offers received per application, column (3) is the total number of offers, column (4) is an indicator for whether the respondent had accepted any position, and column (5) is whether the respondent had accepted an internship. The independent variables representing information are the standardized (mean 0, standard deviation 1) absolute difference between students' coefficients on each resume characteristic from the corresponding coefficient for employers in the same sector. The Euclidean distance between the students' and employers' coefficients summarizes these. The coefficients on an indicator for a student being female and the student's GPA are presented for comparison. Heteroskedasticity-robust standard errors in parentheses. + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

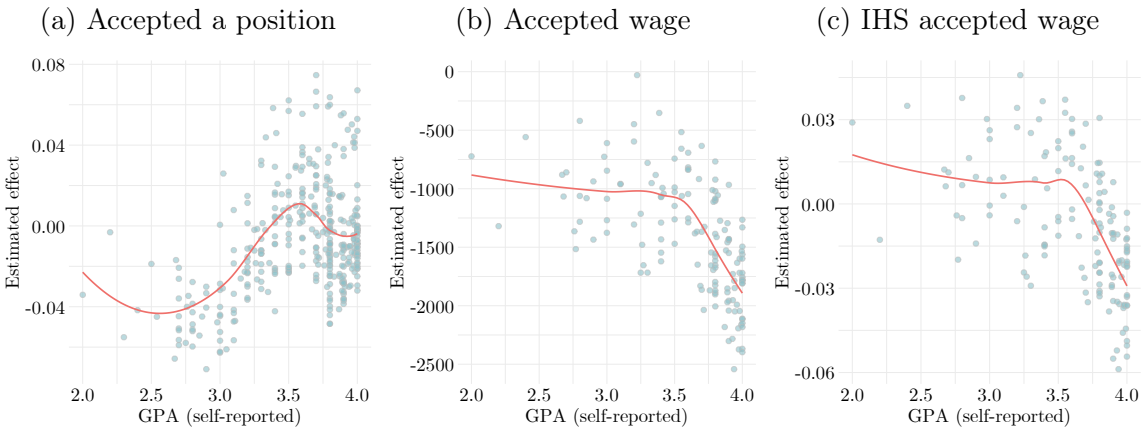
Table 8: Students' beliefs about employer preferences and wage outcomes

	(1) Accepted wage	(2) Avg. offered wage	(3) IHS accepted wage	(4) IHS avg. offered wage	(5) Negotiated
Std. diff. of coef. on GPA	-2024.5+	-883.9	-0.0353	0.139	0.0455+
	(1275.3)	(932.2)	(0.0508)	(0.154)	(0.0280)
Std. diff. of coef. on second work exp.	587.9	1338.9+	0.000655	0.104	0.00389
	(1109.6)	(828.6)	(0.0357)	(0.0945)	(0.0221)
Std. diff. of coef. on internship	1860.4	787.2	0.0447	-0.116	0.0152
	(1515.0)	(1008.8)	(0.0497)	(0.163)	(0.0246)
Std. diff. of coef. on extracurricular	-2340.4**	-2186.3**	-0.0500+	-0.143	-0.00839
	(1020.7)	(939.3)	(0.0373)	(0.166)	(0.0332)
Female	-6006.9*	-3774.2+	-0.175+	0.207	-0.0446
	(3342.3)	(2345.8)	(0.107)	(0.387)	(0.0533)
GPA	890.3	2269.8	0.0103	-0.163	0.0445
	(3480.3)	(2210.5)	(0.114)	(0.353)	(0.0515)
Dependent variable mean	34550.8	29806.2	11.03	10.43	0.150
Dependent variable SD	15855.4	14629.9	0.524	2.343	0.357
Observations	121	201	121	201	234

	(1) Accepted wage	(2) Avg. offered wage	(3) IHS accepted wage	(4) IHS avg. offered wage	(5) Negotiated
Euclidean distance from coefs. (SD)	-2202.4*	-761.0	-0.0413	0.0816	0.0413+
	(1129.3)	(866.6)	(0.0413)	(0.150)	(0.0255)
Female	-5856.0*	-3581.9+	-0.178*	0.182	-0.0499
	(3286.6)	(2334.9)	(0.103)	(0.375)	(0.0528)
GPA	1745.1	2345.0	0.0330	-0.111	0.0399
	(3266.9)	(2142.4)	(0.106)	(0.346)	(0.0504)
Dependent variable mean	34931.3	29806.2	11.04	10.43	0.150
Dependent variable SD	15804.1	14629.9	0.519	2.343	0.357
Observations	126	201	126	201	234

Notes: This table shows the association between students' misperceptions about employers' preferences and students' wage outcomes. Controls include an indicator for whether the student is white, an indicator for whether the student is a first generation student (no parents completed college education), an indicator for whether the student is female, an indicator for whether the student receives Pell grants, the student's GPA, and an indicator for whether the student participated in an extracurricular activity. The dependent variable in each regression is noted: the outcome for column (1) is the wage the student accepted, column (2) is the average wage the student was offered, column (3) the inverse hyperbolic sine of the wage the student accepted, column (4) is the inverse hyperbolic sine of the average wage the student was offered, and column (5) is an indicator for whether the respondent reported having negotiated an offer. The independent variables are the standardized (mean 0, standard deviation 1) absolute difference between students' coefficients on each resume characteristic from the corresponding coefficient for employers in the same sector. The Euclidean distance between the students' and employers' coefficients summarizes these. The coefficients on an indicator for a student being female and the student's GPA are presented for comparison.Heteroskedasticity-robust standard errors in parentheses + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

Figure 10: Heterogeneity in relationship between information and job outcomes



Notes: This figure shows the results of the causal forest analysis described in this section. It plots the estimated relationship between the accuracy of a student's information—estimated based on the distance between her coefficients and employers'—and a given job outcome against student's GPA as self-reported in our survey. Lines in red are fitted via LOESS to highlight potentially nonlinear patterns in the scatterplots. Larger estimated effects indicate a larger correlation between information and job outcomes.

students, 1 SD worse information is associated with a more than 4 percentage point decline in having accepted a position. Meanwhile, there is no correlation for high-GPA students, with coefficients closer to zero.

At the same time, poor information is linked to job outcomes along the intensive margin for high-GPA students. For these students, Figure 10 shows that worse information is associated with decreased wages. For the highest GPA students, 1 SD worse information is correlated with accepting nearly $2000 lower annual wages, or about 5% using the inverse hyperbolic sine. On the other hand, for low-GPA students, although worse information is associated with a lower probability of having accepted a position by the time of the survey, there is less association with wages, with coefficients much closer to zero.

Although GPA is the strongest dimension of heterogeneity in this relationship, we also find that the relationship between information and outcomes appears to be stronger for Pell grant recipients relative to non-Pell grant recipients (Appendix Figure G.2).

How can we make sense of these results? Although we emphasize that these results are not causal, we find that the association between information and outcomes differs strongly according to students' characteristics like GPA. For high-GPA students, who may be competitive for many positions and also targeting competitive employers, having worse information is not associated with the probability of getting a position (perhaps because these students are competitive) but is associated with lower wages. On the other hand, for low-GPA stu-

dents, the association occurs more strongly at the extensive margin. This is consistent with our results from employers showing that employers' willingness-to-pay only reacts to candidate characteristics at the highest-paying jobs, which may be the ones hiring the most competitive candidates.

To obtain a richer picture of students' information, we also examine the relationship between job outcomes and our descriptive point-allocation measure of information quality. The patterns are qualitatively similar—students further from employer rankings submit fewer applications and accept lower wages—but the associations are weaker. We find that information about the importance of culture fit with an employer is as a particularly important dimension, matching a qualitative finding we uncovered in conversations with the career center and which students reported to us in the survey. In this context, employers especially value finding candidates from the local area, who are likely to remain in the area in the future. For example, as one student reflected on their job search, they noted, "Every hiring manager was looking for someone who would 'be in the area consistently' and would end my interview early upon finding out I was only in town for the summer as I am a full time student." Thus, although it is difficult to signal fit or diversity on a resume, understanding these elements, too, may be important in shaping students' outcomes. The full results appear in Appendix Section F.

Our results show that employers' preferences are highly heterogeneous, but students anticipate little heterogeneity between types of employers. If students target different employers according to their GPAs or other qualifications, this would mean that students may leave potentially useful opportunities on the table due to their miscalibration. Our results corroborate this story by showing that students with worse information have worse job outcomes, with the margin at which this occurs depending on the students' characteristics.

7 Conclusion

In this paper, we study employer preferences and job seeker beliefs about those preferences by surveying both recruiters and job seeking students at a large, mid-tier public university, with the goal of understanding the extent, heterogeneity, and implications of (in)accurate beliefs among job seekers.

We contribute to previous work on employer preferences by building on existing incentivized resume rating approaches to shed additional light on employers' preferences in this

context. Unlike in prior work focusing on elite or highly selective universities, our work in the context of large, public university finds that employers place a high value on prior non-professional work experience. We show that employers place a meaningful value on extracurriculars, especially when those activities involve sports or volunteering, and that they may use these to understand candidates' non-cognitive skills. These preferences are highly heterogeneous across employers, including on the basis of sector and salary amount.

We extend this incentivized resume rating approach to students and elicit their beliefs about employers' preferences. Using this method, we find that students believe employers place a high value on GPA, number of work experiences, internship-type experiences, and extracurriculars. These beliefs are correlated with some parts of students' behavior: students who place more weight on GPA have higher GPAs themselves, but student beliefs about the importance of other activities are not strongly correlated with their time use.

How do students' beliefs compare to employers' preferences? We measure the accuracy of students' beliefs relative to what employers actually value and show that information quality is correlated with students' job search behavior and outcomes. Miscalibrated beliefs are more common among disadvantaged students such as non-white students. Overall, students with worse information also accept lower wages. The results are robust even when controlling for student characteristics, including demographics and GPA, pointing to job seekers' information accuracy as a meaningful mechanism underlying differences in job market outcomes across students.

This work offers new insights on the extent, nature, and correlates of information quality in the job search process. Since large public universities have been shown to drive economic mobility (see Chetty et al. (2020)), our study setting gives us a unique opportunity to study the experiences, obstacles, and outcomes of students from disadvantaged backgrounds. In this respect, this paper contributes to current discourse around higher education and economic mobility, and motivates future work on how to improve the outcomes of students in this context.

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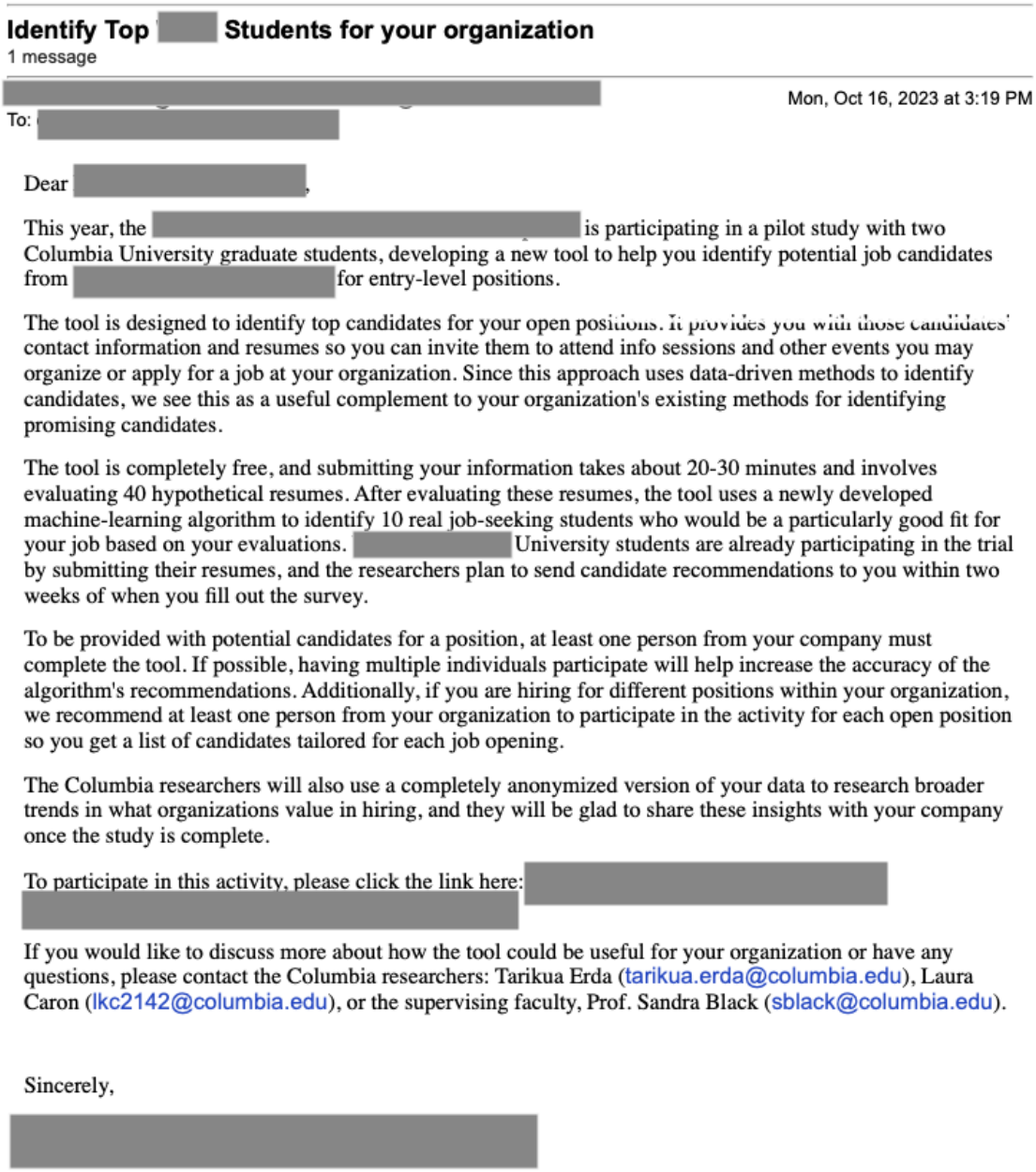
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Appendix

A Participant recruitment

A.1 Employer recruitment

Figure A.1: Invitation email sent to employers



Identify Top [redacted] Students for your organization

1 message

[redacted] Mon, Oct 16, 2023 at 3:19 PM

To: [redacted]

Dear [redacted],

This year, the [redacted] is participating in a pilot study with two Columbia University graduate students, developing a new tool to help you identify potential job candidates from [redacted] for entry-level positions.

The tool is designed to identify top candidates for your open positions. It provides you with those candidates' contact information and resumes so you can invite them to attend info sessions and other events you may organize or apply for a job at your organization. Since this approach uses data-driven methods to identify candidates, we see this as a useful complement to your organization's existing methods for identifying promising candidates.

The tool is completely free, and submitting your information takes about 20-30 minutes and involves evaluating 40 hypothetical resumes. After evaluating these resumes, the tool uses a newly developed machine-learning algorithm to identify 10 real job-seeking students who would be a particularly good fit for your job based on your evaluations. [redacted] University students are already participating in the trial by submitting their resumes, and the researchers plan to send candidate recommendations to you within two weeks of when you fill out the survey.

To be provided with potential candidates for a position, at least one person from your company must complete the tool. If possible, having multiple individuals participate will help increase the accuracy of the algorithm's recommendations. Additionally, if you are hiring for different positions within your organization, we recommend at least one person from your organization to participate in the activity for each open position so you get a list of candidates tailored for each job opening.

The Columbia researchers will also use a completely anonymized version of your data to research broader trends in what organizations value in hiring, and they will be glad to share these insights with your company once the study is complete.

To participate in this activity, please click the link here: [redacted]

If you would like to discuss more about how the tool could be useful for your organization or have any questions, please contact the Columbia researchers: Tarikua Erda (tarikua.erda@columbia.edu), Laura Caron (lkc2142@columbia.edu), or the supervising faculty, Prof. Sandra Black (sblack@columbia.edu).

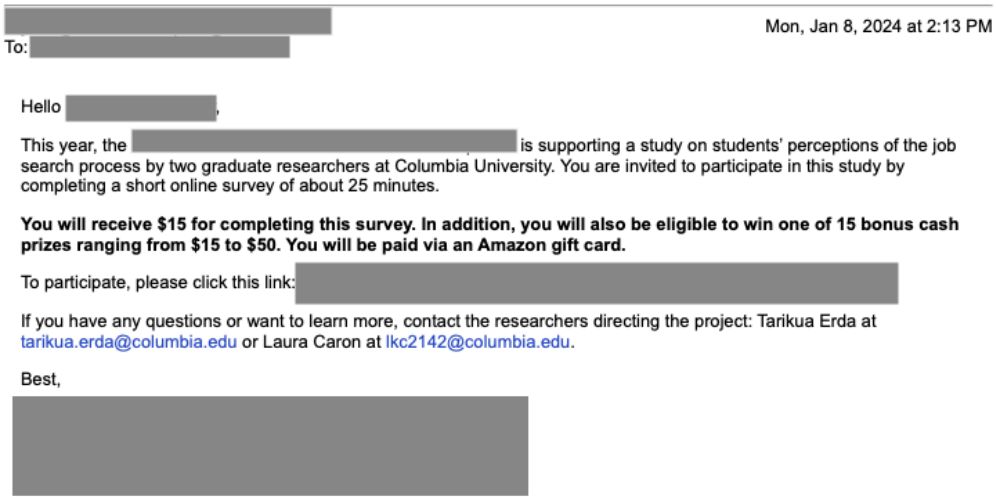
Sincerely,

[redacted]

A.2 Student recruitment

Paid Survey on Job Search Process

Figure A.2: Invitation email sent to students


[redacted]
Mon, Jan 8, 2024 at 2:13 PM
To: [redacted]

Hello [redacted],

This year, the [redacted] is supporting a study on students' perceptions of the job search process by two graduate researchers at Columbia University. You are invited to participate in this study by completing a short online survey of about 25 minutes.

You will receive $15 for completing this survey. In addition, you will also be eligible to win one of 15 bonus cash prizes ranging from $15 to $50. You will be paid via an Amazon gift card.

To participate, please click this link: [redacted]

If you have any questions or want to learn more, contact the researchers directing the project: Tarikua Erda at tarikua.erda@columbia.edu or Laura Caron at lkc2142@columbia.edu.

Best,

[redacted]

B Design of hypothetical resumes

1. **First and last names** Names were used to indicate the gender and race of a job applicant. First names come from a database of baby names published by the New York Times covering babies born in New York City from 1990-2008. In order to match the target sample of college students ages 18-26 at the time of the first survey in 2023, we restricted this to babies born between 1997 and 2005. To avoid additional religious connotations, as in Kessler, Low, and Sullivan (2019), we removed religious names such as Mohammed and Moshe.

   Next, we followed the approach used by Kessler, Low, and Sullivan (2019) to construct an index indicating how distinctively associated with each race a given first name was. Specifically, we constructed a race name index as follows:

$$RNI_{\text{white vs. R}} = \frac{\Pr(\text{name} \mid \text{R})}{\Pr(\text{name} \mid \text{R}) + \Pr(\text{name} \mid \text{White})}$$

   For example, if a name is exclusively given to white children relative to Black children, then the RNI_white vs. Black would be 0. If a name is equally likely to be given to a white child and a Black child, it would receive an RNI_white vs. Black of 0.5.

Using this index, we construct a list of racially ambiguous names by taking the most popular baby names that have an RNI_white vs. non-white between 0.4 and 0.6 and that have at least one of RNI_white vs. Black, RNI_white vs. Asian, or RNI_white vs. Hispanic between 0.4 and 0.6. This ensures that racially ambiguous names are both (1) overall, not strongly associated with being white or non-white, and (2) specifically, not indicative of race between whiteness and another race. For example, the ambiguous first name "Natalie" was given to white children as often as to Asian children, (.74/.26 =) 2.8 times as often as Black children, and (0.40/0.60 =) = 1.5 times as often as Hispanic children.

Next, we constructed last names using a database of the most common 1000 names in the 2010 Census and their associated race. Our methodology for last names differed from that for first names because last names tended to be less mixed across races. For example, while the racially ambiguous first names "Erica" and "Anthony" were all three white-Black, white-Hispanic, and white-Asian ambiguous, this case was extraordinarily uncommon for last names. Further, because of the nature of the association between last names and race, applying similar criteria to the above would result in a list of last names that were almost exclusively white-Black ambiguous, but not white-Hispanic or white-Asian ambiguous. Because of this, racially ambiguous last names were those that had an RNI_white vs. non-white between 0.4 and 0.6 and all RNI_white vs. Black, RNI_white vs. Asian, and RNI_white vs. Hispanic between 0.1 and 0.9.

Finally, ambiguous first and last names were randomly combined. The final list of female and male racially ambiguous names appears in Table B.1. Racially indicative names were taken from Kessler, Low, and Sullivan (2019), who used a similar dataset and methodology in the generation of their names.

2. **Taglines**: To vary the amount of information each resume contained about a candidate's personality, we added a tagline to the top of the resume, which appeared underneath the candidate's name. Each tagline started with an adjective, which was either personality-indicative, or the neutral descriptor "Graduating". Personality-indicative words were taken from a list of descriptors associated with each Big-5 personality trait, as prepared by John and Srivastava (1999). A list of the taglines appears in Table B.2.

3. **Education**: All resumes were fixed to be those of seniors graduating in the winter semester (to align with fall recruitment cycles). In the first round of the survey, this was December 2023. Accordingly, high school graduation dates were fixed to be 4.5 years

prior; in the first round of the survey, May 2019. All resumes reviewed by employers listed University as the undergraduate institution. Next, majors and associated degree and sub-schools were randomized according to the list in Table B.3. These majors and proportions were chosen to roughly reflect the percentages of each major reflected in the number of work experiences drawn from resumes of each major in the first round. These majors represent a variety offered by the university, and are also broadly in line with frequency of the majors in the overall student body. For example, the top three most common majors frequented by the student body are also the top three most common ones we shows to employers in the resume rating exercise.

Next, we randomized the name of the high school a student attended to include variation in indicators for socioeconomic status. Resumes are considered to have an ambiguous-SES high school if their resume lists only "High School Diploma" in place of the name of a school. Low-SES high schools were those with names that had an "obviously public school" construction (such as the name of the county), while high-SES high schools were those with names that had an "obviously private school" construction.

Given that the vast majority of the university students come from the state, low-SES high school names were derived by selecting the counties there with the lowest median income, choosing counties with at least 50 students in the that university's class of 2022-2023, and limiting to high schools in those counties with an "obviously public" construction. To confirm the realistic low-SES association with these high schools, we note that several of them appear on the list of high schools that partner with the university in an initiative to recruit low-income and first-generation college students.

High-SES high schools came from the US News listing of private high schools in the region. Religious and language immersion schools were removed, and only schools with tuition of at least $10,000 per year were included. Since the university is not a highly selective university, to ensure realism and when such information was available, an effort was made to limit the list to private schools which had at least one member of a recent graduating class planned to attend or was accepted to the university.

The list of low-SES and high-SES high schools appears in Table B.4.

4. **Work experience** Work experiences and associated descriptions were drawn from resume data collected from students in the first round. They were divided into Science vs. Social Science and humanities experiences. All resumes showed at least one work experience, which took place in the summer before the candidate's graduating year. For

50% of resumes, this first work experience was a non-professional "work for money"-type experience, such as a server or barista, while for 50% of resumes, this was a professional-type experience, such as an internship or research assistantship. Next, 65% of resumes had a second work experience; of these, 100% were non-professional "work for money". This "second work experience" took place the summer prior. The work experiences were randomized independently.

5. **Extracurriculars** Extracurricular activities were also drawn from real student resumes and supplemented with real extracurriculars available at the university. 45% of hypothetical resumes had no extracurricular activities, 12.5% had academic activities (separated by Science/Social science and humanities) such as the Biology Club or the Chemistry Club, 12.5% had volunteer/service activities such as The American Red Cross, 15% had sports thought to be expensive and exclusive (country club sports) like lacrosse and equestrian sports, and 15% had sports thought to be affordable and accessible (backyard sports) like basketball and track and field. Dates associated with the extracurricular activities were randomized. The list of extracurricular activities appears in Table B.5.

6. **Skills and interests** To increase realism and relevance of the resumes, we attached a list of skills and interests. These followed the student's major to ensure that they were relevant.

Table B.1: Racially ambiguous names by implied gender

Male	**Female**
Alex Sampson	Bianca Clay
Devin Clay	Brianna Moses
Oscar Robinson	Deborah Daniels
Jeremy Bernard	Mikayla Daniel
Antonio Monroe	Sonia Ware
Allen Alexander	Monica Moran
Gabriel Dixon	Naomi Sampson
Anthony Ware	Alexis Coleman
Julian Clarke	Maria Robinson
Bradley Moses	Michelle Williams
Tyler Douglas	Savannah Clarke
Nathaniel Benjamin	Leila Franklin
Caleb Solomon	Camille Houston
Tristan Grant	Ciara Thomas
Damian Jordan	Natalie Bernard
Kai Williams	Serena Anthony
Aiden Daniels	Ariana James
Edward Houston	Nadia Grant
Ali David	Sasha David
Dennis James	Natalia Alexander

Table B.2: Tagline construction

Personality-indicative descriptors	**Base construction**
Enthusiastic	Student Majoring in [Major]
Highly Organized	Student Seeking Opportunities
Creative	Young Professional Seeking Entry-Level Positions
Energetic	Undergrad Seeking Open Positions
Outgoing	[Major] Major Seeking Open Positions
Assertive	Student Interested in [Major]
Disciplined	Student with Experience in [Major]
Responsible	Student Talented in [Major]
Conscientious	Undergrad Focused on [Major]
Curious	Young Professional Talented in [Major]
Cooperative	Student with Skills in [Major]
Extroverted	Student Studying [Major]
Introverted	Undergrad Majoring in [Major]
Imaginative	Undergrad with Coursework in [Major]
Reliable	Student Looking for New Roles
Adventurous	Undergrad Ready to Contribute
Gritty	Future Colleague
Resourceful	Undergrad Student in [Major]
Sociable	Undergrad Interested in [Major]
Ambitious	Student with Undergraduate Preparation in [Major]

Table B.3: List of majors

Sciences	**Social science and humanities**
BS in Biology (Pre-Med) (1/40)	BA in Finance (1/40)
BS in Biology (2/40)	BSBA in Business Administration & Law (10/40)
BS in Computer Science (4/40)	BA in Communication Sciences and Disorders (1/40)
BS in Electrical Engineering (4/40)	BA in Crisis/Emergency/Disaster Management (2/40)
BS in Forensic Science and BS in Nursing (1/40)	BS in Criminal Justice (3/40)
BS in Forensic Science (1/40)	BS in Psychology (4/40)
BS in Integrated Health Sciences (10/40)	BS in Emergency and Disaster Management (2/40)
BS in Nursing (4/40)	BA in Health Management (1/40)
BS in Traditional Mathematics (1/40)	BA in Interior Design (1/40)
BS in Mathematics (1/40)	BFA in Entertainment Design and Technology (1/40)
BS in Computer Science and Mathematics (2/40)	BS in Inclusive Education (4/40)
BSE in Mechanical Engineering (5/40)	BS in Anthropology (1/40)
BSBA in Computer Information Systems (4/40)	BS in Birth-Kindergarten Studies (1/40)
	BS in Education (2/40)
	BA in Political Science (1/40)
	BS in Management (2/40)
	BS in Marketing and Finance (1/40)
	BS in Political Science (1/40)
	BSBA in Management & Marketing (1/40)

Table B.4: High school names

Low-SES	**High-SES**
Wilkes Central High School	Odyssey School
McDowell County High School	Carolina Day School
Swain County High School	Asheville School
Hayesville High School	The Oakwood School
R-S Central High School	Providence Day School
East Burke County High School	Ravenscroft School
South Caldwell County High School	Cannon College Preparatory School
Surry County Central High School	Cape Fear Academy
North Surry County High School	Thales Academy
Murphy High School	Gaston Day School

Table B.5: Extracurriculars

Academic (Science)	**Academic (Social Science and Humanities)**
Member, Biology Club	Member, Finance Club
Member, Critical Care Club	Student Senator, University Student Government Association
Member, Chemistry Club	Student Senator, Student Government Association
Member, Integrated Health Science Student Organization	Member, Interior Design Club
Member, Wildlife & Forestry Club	Member, International Studies Club
Sports (country-club)	**Sports (backyard)**
Goalie, Club Lacrosse	Center, Basketball Team
Foil, Fencing Club	Distance, Track and Field Team
Member, Ski Team	Goalie, Club Soccer
Rower, Crew Team	Member, Cycling Team
Member, Equestrian Sports Society	Member, Cross Country Team
Member, Sailing Team	Member, Ultimate Frisbee Team
Volunteer/service	
Volunteer educator, Comprehensive Nursing School Project	
Member, Miracle at [University]	
Volunteer coordinator, Cabarrus County Group Homes	
Crew member, Love Your Melons Campus Crew	
Blood Ambassador, Volunteer, The American Red Cross	

C Attrition and response rates

In this section, we study attrition and response rates during and between survey rounds both for employers and students. High rates of attrition during the exercise are most concerning if they are correlated with the treatment or outcomes studied. While we find some evidence of patterns according to employers' sector and openness to hiring from different majors, this is to be expected given that we target employers interested in hiring from multiple majors. Comfortingly, we find no evidence that attrition during the resume rating exercise is predicted by employer sector or the characteristics of the resumes shown. While participation in follow-up surveys is limited, we find no evidence of attrition in reporting job outcomes correlated with students' characteristics.

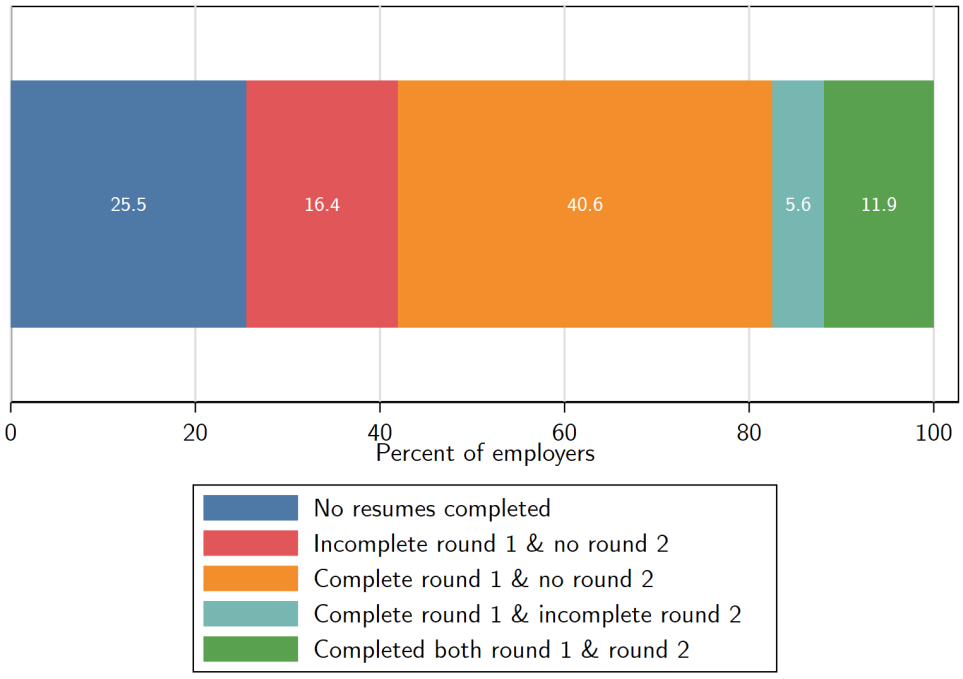
C.1 Employer attrition and response rates

Overall, 58% of employers who began the first survey completed it in full (Figure C.1.)

Figure C.1 shows the share of employers according to completion of the surveys and highlights that, for employers, there are three major points of the experiment at which attrition may occur. The first is when employers who are eligible to participate and have consented to the study reach the screen asking them to confirm that they understand that the resume matching, and, thus, the incentive to participate in the survey, will only work well for employers interested in hiring from multiple majors. These employers drop out without completing the rating of any resumes and constitute 25% of employers who began the first survey. The second occurs over the course of the resume rating exercise, as employers may get tired or frustrated while rating the resumes. These employers leave the first round of the survey incomplete and constitute 16% of employers who began the first survey. The final important point of attrition occurs at the follow-up employer survey, where we elicit employers' feedback about the resume matches they received.

At first point of attrition, at the point of targeting towards employers willing to hire from multiple majors, we find little evidence of systematic attrition. Figure C.2 plots the coefficients of a regression predicting completion of the survey using characteristics collected before this point. The first panel plots the coefficients from a regression predicting the probability of having rated no resumes (i.e., of having quit the survey following this question). This panel shows that the probability of quitting at this point in the survey is not strongly predicted by employer sector or years of hiring experience. The figure indicates that em-

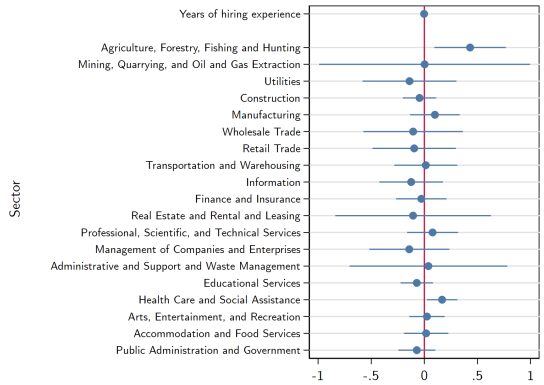
Figure C.1: Employer attrition by survey round



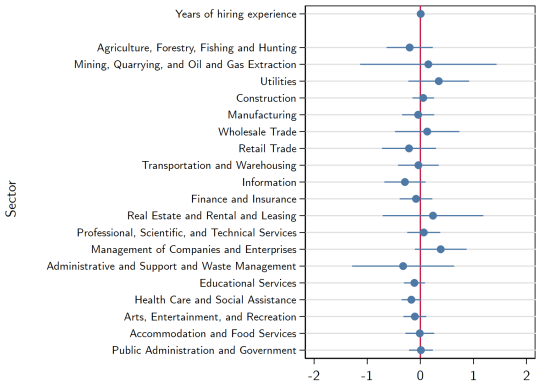
Notes: This figure plots the share of all employers who participated in our study according to their completion of the surveys.

Figure C.2: Employer attrition during resume rating

(a) Probability of rating no resumes



(b) Probability of completing survey



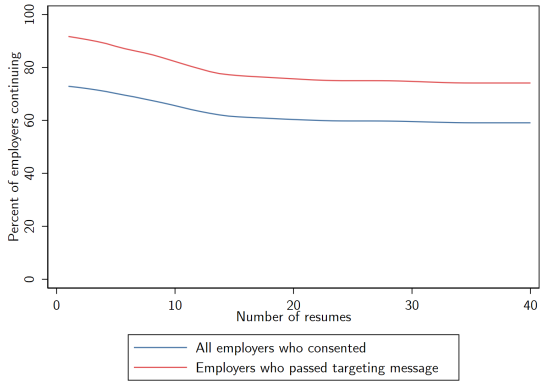
Notes: This figure shows the relationship between employer attrition and employer characteristics. Panel (a) plots coefficients from a regression where the outcome is whether the employer exited the survey without rating any resumes. Panel (b) plots coefficients from a regression where the outcome is the probability that the employer completed the entire first round survey. 95% confidence intervals are shown.

ployers in the agriculture and healthcare industries are somewhat more likely to quit at this point, which makes sense if these employers are more likely to search for specific majors. The second panel plots the coefficients from a regression predicting completion of the entire survey according to the same characteristics. Here, there are no significant patterns.

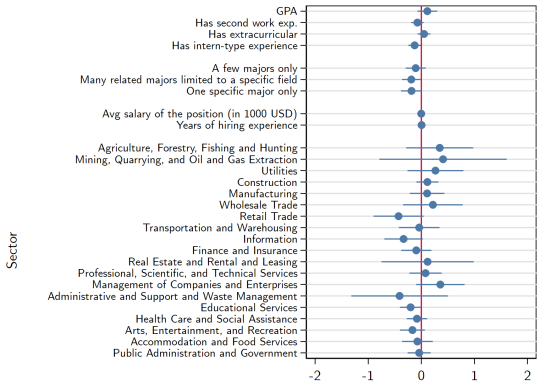
Over the course of the resume rating exercise, we observe little attrition, which is concentrated early in the exercise, not predicted by the characteristics of the resumes shown, and likely driven by employers screening based on major. Panel (a) of Figure C.3 shows that, of employers who consented to the survey, 59% rated all 40 resumes they were shown. Conditioning on having passed the targeting screen, 93% of employers rated at least one resume and 74% rated all the resumes they were shown. The second panel shows that, conditioning on having completed at least one resume, there is not strong evidence that the characteristics seen on the first resume affect probability of completing the survey. Coefficients for characteristics of the first resume are generally insignificant, except for a negative coefficient on having an internship-type experience. Relative to employers who are open to considering all majors, employers who are willing to consider fewer majors are slightly less likely to complete the survey, with those who are considering only one specific major being 18 percentage points less likely to complete the survey in full. Considering all resumes viewed, none of the main resume characteristics (GPA, second work experience, internship-type experience,

Figure C.3: Employer attrition at the point of targeting

(a) Share of employers rating each resume



(b) Probability of completing survey

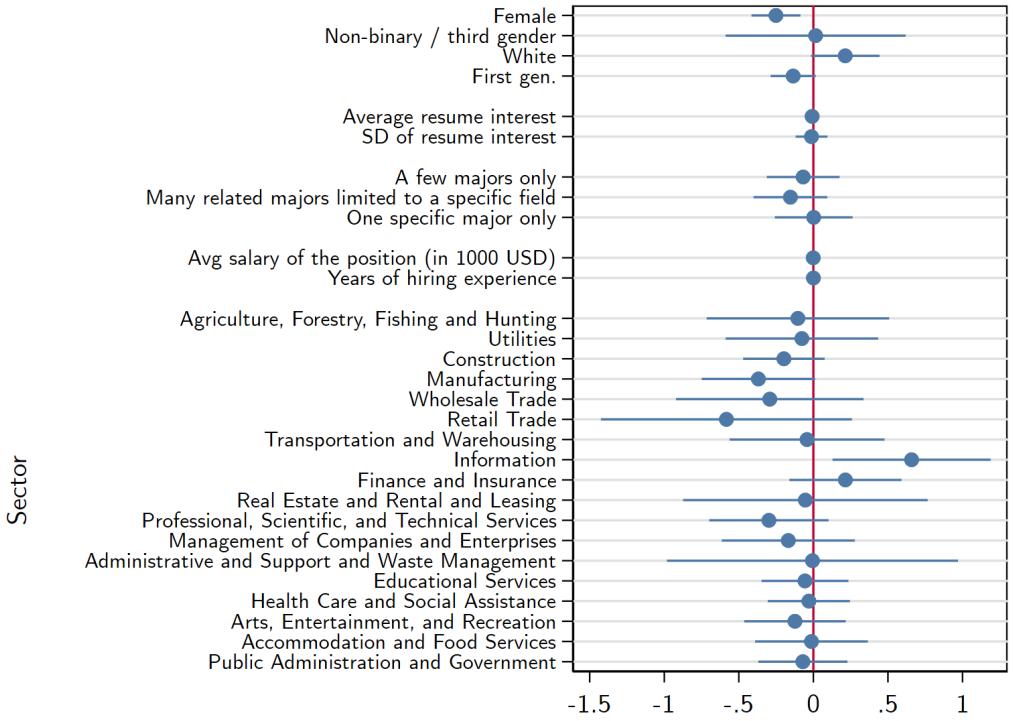


Notes: This figure shows employer attrition during the first survey. Panel (a) plots the share of employers remaining in the survey after rating each number of resumes. Panel (b) plots coefficients from a regression where the outcome is the probability that the employer completed the entire first round survey. 95% confidence intervals are shown.

extracurriculars) predict the probability of dropping out of the survey.

Finally, response rates for the follow-up survey for employers were low, but not predicted by employer characteristics. Conditioning on having completed the first survey in full, Figure C.4 shows the coefficients in a regression predicting the probability of completing the follow-up survey. Employers who are white and male are somewhat more likely to have completed the follow-up survey, but completion of the follow up is not predicted by employers' average or variation in interest in the first survey, their sector, years of experience, or the average salary for the position for which they were hiring.

Figure C.4: Attrition in employer follow-up survey



Notes: This figure shows employer attrition in the follow-up survey. It plots coefficients from a regression where the outcome is the probability that the employer completed the follow-up survey. 95% confidence intervals are shown.

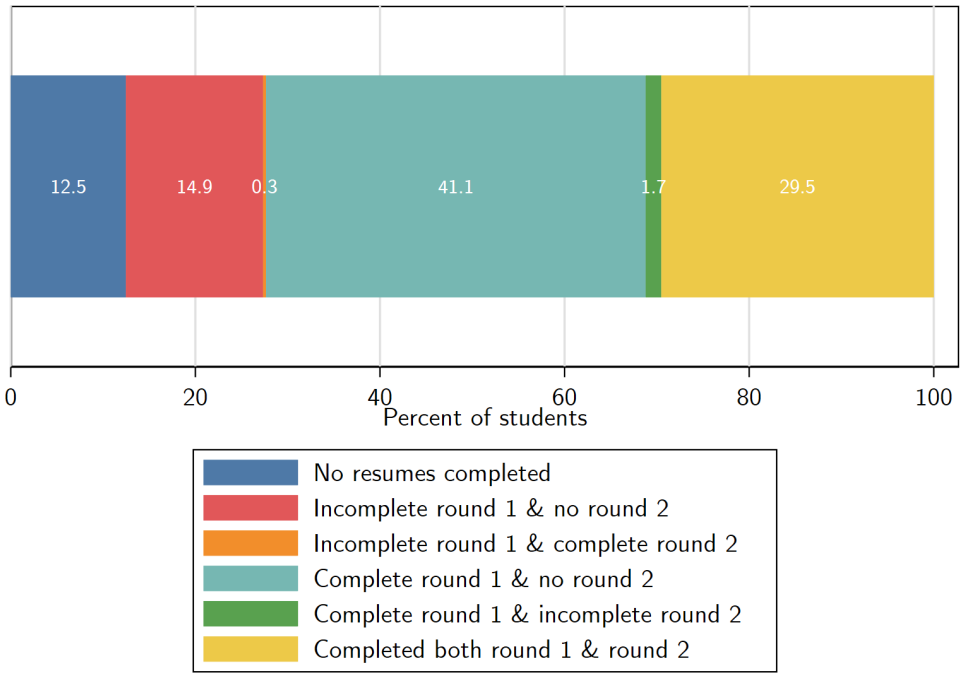
C.2 Student attrition

For students, Figure C.5 highlights two important points of attrition. In contrast to employers, many fewer students exited the resume rating exercise without rating any resumes, reflecting the fact that students were not targeted in the same way as employers. While 25% of employers exited before rating any resumes, only about 12.5% of eligible student participants did the same. Instead, students either tend to exit before completing the resume ratings and demographic questions or attrit before the final follow-up survey.

Figure C.6 shows that students' patterns of attrition when rating resumes mirror those of employers, with no strong patterns by sector or resume characteristics. Probability of exiting the survey without having rated any resumes is not strongly predicted by characteristics collected before resume rating began. Of students who rated at least one resume, 88% completed all 20 ratings, with attrition occurring mainly in the first few resumes. Conditioning on having rated at least one resume, completion of the first survey is not strongly predicted by sector or by resume characteristics. Students in their junior year (rather than senior year) were more likely to complete the survey by about 4 percentage points.

As for employers, the response rate for the follow-up survey for students was low, but not predicted by student characteristics or by interest ratings during the rating exercise.

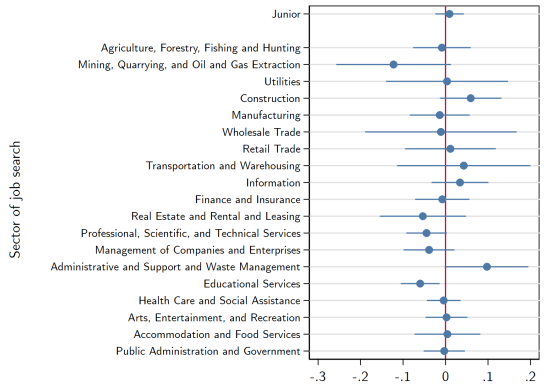
Figure C.5: Student attrition by survey round



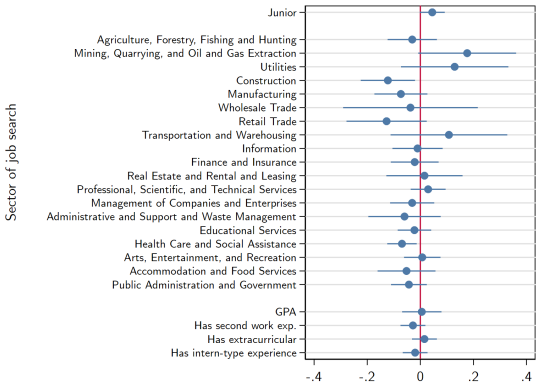
Notes: This figure plots the share of all students who participated in our study according to their completion of the surveys.

Figure C.6: Student attrition during resume rating

(a) Probability of student rating no resumes

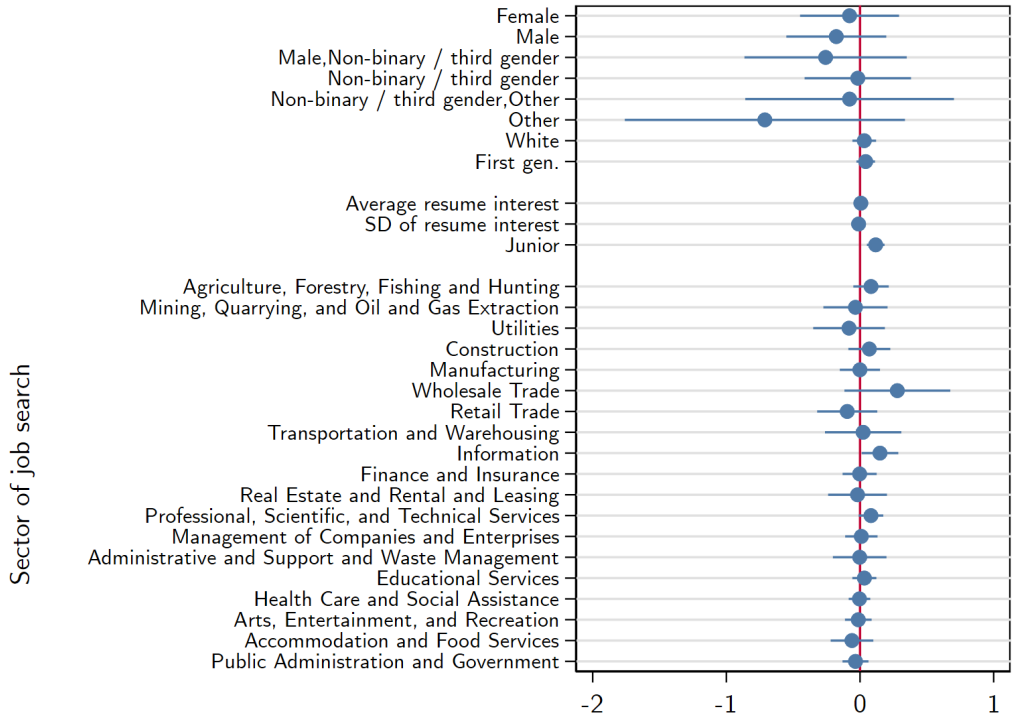


(b) Probability of completing survey



Notes: This figure shows student attrition during the resume rating survey. Panel (a) plots coefficients from a regression where the outcome is the probability that the student exited the survey without rating any resumes. Panel (b) plots coefficients from a regression where the outcome is the probability that the student completed the entire survey. 95% confidence intervals are shown.

Figure C.7: Attrition in student follow-up survey



Notes: This figure shows student attrition in the follow-up survey. It plots coefficients from a regression where the outcome is the probability that the student completed the follow-up survey. 95% confidence intervals are shown.

D Additional results on employer preferences

Table D.1: Robustness of employer hiring interest to regression specification

	(1)	(2)	(3)	(4)	(5)	(6)
	Interest	Interest	Interest	Interest	Interest	Interest
GPA	0.154*	0.166**	0.268**	0.162*	0.145*	0.152*
	(0.0820)	(0.0818)	(0.117)	(0.0895)	(0.0868)	(0.0826)
Has second work exp.	0.245***	0.251***	0.263***	0.268***	0.243***	0.249***
	(0.0524)	(0.0525)	(0.0530)	(0.0572)	(0.0551)	(0.0528)
Has intern-type experience	0.140***	0.140**	0.131**	0.152***	0.132**	0.136**
	(0.0532)	(0.0539)	(0.0554)	(0.0582)	(0.0567)	(0.0535)
Has extracurricular	0.140**	0.141***	0.150***	0.155***	0.132**	0.142***
	(0.0542)	(0.0539)	(0.0546)	(0.0592)	(0.0574)	(0.0545)
Dependent variable mean	4.184	4.184	4.183	4.299	4.176	4.179
Dependent variable SD	2.938	2.938	2.937	2.836	2.923	2.937
Employer FE	Yes	Yes	No	Yes	Yes	Yes
Resume order FE	Yes	No	No	Yes	Yes	Yes
Sample	Full sample	Full sample	Full sample	Not low variance	Complete responses	Not too fast
Observations	7158	7158	7162	6535	6560	7083

Notes: This table shows the association between resume characteristics and employer responses under different regression specifications. The dependent variable is the employer's interest in hiring the candidate on a scale of 1-10. Employer FE represents employer fixed effects and resume order FE represents fixed effects for the number of resumes the employer rated before this one. Sample restrictions are noted, with not low variance representing employers whose within-respondent variance was greater than 1/4 the median, complete responses representing employers who finished rating all 40 resumes, and not too fast representing employers who spent greater than 1/4 the median time on the survey. Standard errors clustered at the respondent level in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

Table D.2: Heterogeneity in employer preferences based on job characteristics

	(1)	(2)	(3)	(4)	(5)	(6)
	High salary	Science	Client meetings	Client sports	Firm sports	Give presentations
GPA	-0.0470	0.134	0.254	0.232**	0.244***	0.265*
	(0.112)	(0.109)	(0.155)	(0.0926)	(0.0929)	(0.147)
Has second work exp.	0.396***	0.392***	0.220*	0.285***	0.262***	0.256**
	(0.0803)	(0.0746)	(0.116)	(0.0686)	(0.0635)	(0.116)
Has intern-type experience	0.0273	0.139*	-0.0819	0.118*	0.133**	-0.0384
	(0.0793)	(0.0769)	(0.0989)	(0.0670)	(0.0624)	(0.101)
Has extracurricular	0.274***	0.270***	0.321**	0.132*	0.113	0.0634
	(0.0776)	(0.0703)	(0.123)	(0.0753)	(0.0690)	(0.104)
Interaction with each characteristic:						
GPA × Char.	0.416**	0.0550	-0.0328	0.00423	-0.0903	-0.0407
	(0.161)	(0.165)	(0.186)	(0.216)	(0.197)	(0.177)
Has second work exp. × Char.	-0.300***	-0.318***	0.0320	-0.192*	-0.131	-0.0139
	(0.101)	(0.102)	(0.133)	(0.111)	(0.136)	(0.135)
Has intern-type experience × Char.	0.233**	0.00196	0.309**	0.0708	-0.00183	0.231*
	(0.103)	(0.106)	(0.122)	(0.138)	(0.185)	(0.124)
Has extracurricular × Char.	-0.270**	-0.281***	-0.286**	-0.0463	0.0658	0.0776
	(0.107)	(0.107)	(0.142)	(0.136)	(0.189)	(0.130)
Dependent variable mean	4.184	4.184	3.998	3.998	3.998	3.998
Dependent variable SD	2.938	2.938	2.897	2.897	2.897	2.897
Observations	7158	7158	5520	5520	5520	5520

Notes: This table shows heterogeneity in employers' preferences according to characteristics of the position for which they are hiring. The dependent variable is the employer's interest in hiring the candidate on a scale of 1-10. Each column contains an interaction term with a different job characteristic. High salary represents an indicator for a position with an annual salary higher than the average in our sample, Science indicates those reviewing science resumes, Client meetings indicates those who have frequent meetings with clients, Client sports indicates those who participate in sports activities with clients, Firm sports indicates those who participate in sports activities with other firms, and Give presentation indicates those who have entry-level employees give presentations. Standard errors clustered at the respondent level in parentheses * $p < .1$, ** $p < .05$, *** $p < .01$

Table D.3: Heterogeneity in employer preferences for extracurriculars

	(1) Involved in screening	(2) Above avg. exp.	(3) Race matches candidate	(4) Alum	(5) Same race/gender
GPA	0.223*	0.0728	0.201	0.197**	0.153
	(0.125)	(0.106)	(0.192)	(0.0960)	(0.230)
Has second work exp.	0.243***	0.214***	0.329***	0.299***	0.0876
	(0.0914)	(0.0708)	(0.111)	(0.0653)	(0.134)
Has intern-type experience	0.216**	0.164**	0.0675	0.114*	-0.0163
	(0.0971)	(0.0823)	(0.118)	(0.0658)	(0.135)
Has extracurricular	0.0700	0.266***	-0.163	0.0743	0.163
	(0.0978)	(0.0787)	(0.142)	(0.0723)	(0.135)
Interaction with each characteristic:					
GPA × Char.	-0.0984	0.160	0.0734	-0.125	0.0347
	(0.161)	(0.161)	(0.219)	(0.286)	(0.255)
Has second work exp. × Char.	0.00120	0.0630	0.0845	-0.122	0.364**
	(0.111)	(0.106)	(0.141)	(0.197)	(0.159)
Has intern-type experience × Char.	-0.107	-0.0447	0.117	0.175	0.212
	(0.116)	(0.106)	(0.150)	(0.133)	(0.160)
Has extracurricular × Char.	0.0984	-0.254**	0.282*	0.420**	-0.137
	(0.116)	(0.106)	(0.168)	(0.170)	(0.153)
Dependent variable mean	4.184	4.184	4.148	4.192	4.192
Dependent variable SD	2.938	2.938	2.887	2.872	2.940
Observations	7158	7158	2938	5280	3330

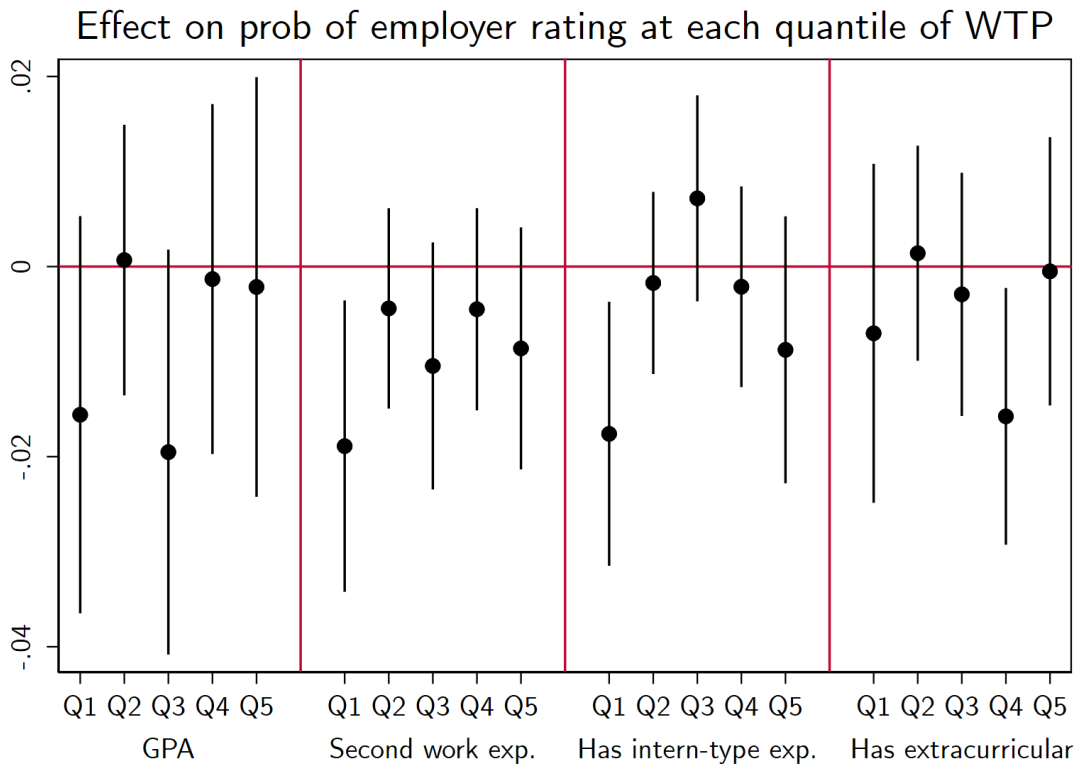
Notes: This table shows heterogeneity in employers' preferences according to their personal characteristics. The dependent variable is the employer's interest in hiring the candidate on a scale of 1-10. Each column contains an interaction term with a different characteristic. Involved in screening indicates those who report being typically involved in screening resumes at the first step of hiring, Above avg. exp. indicates employers with more years of hiring experience than the average in our sample, Alum indicates employers who graduated from the university, and Same race/gender indicators employers whose race and gender match those indicated by the resume. Resumes with racially ambiguous names are dropped from the analyses using same race/gender. Standard errors clustered at the respondent level in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

Figure D.1: Likelihood of employer interest at each level and resume characteristics



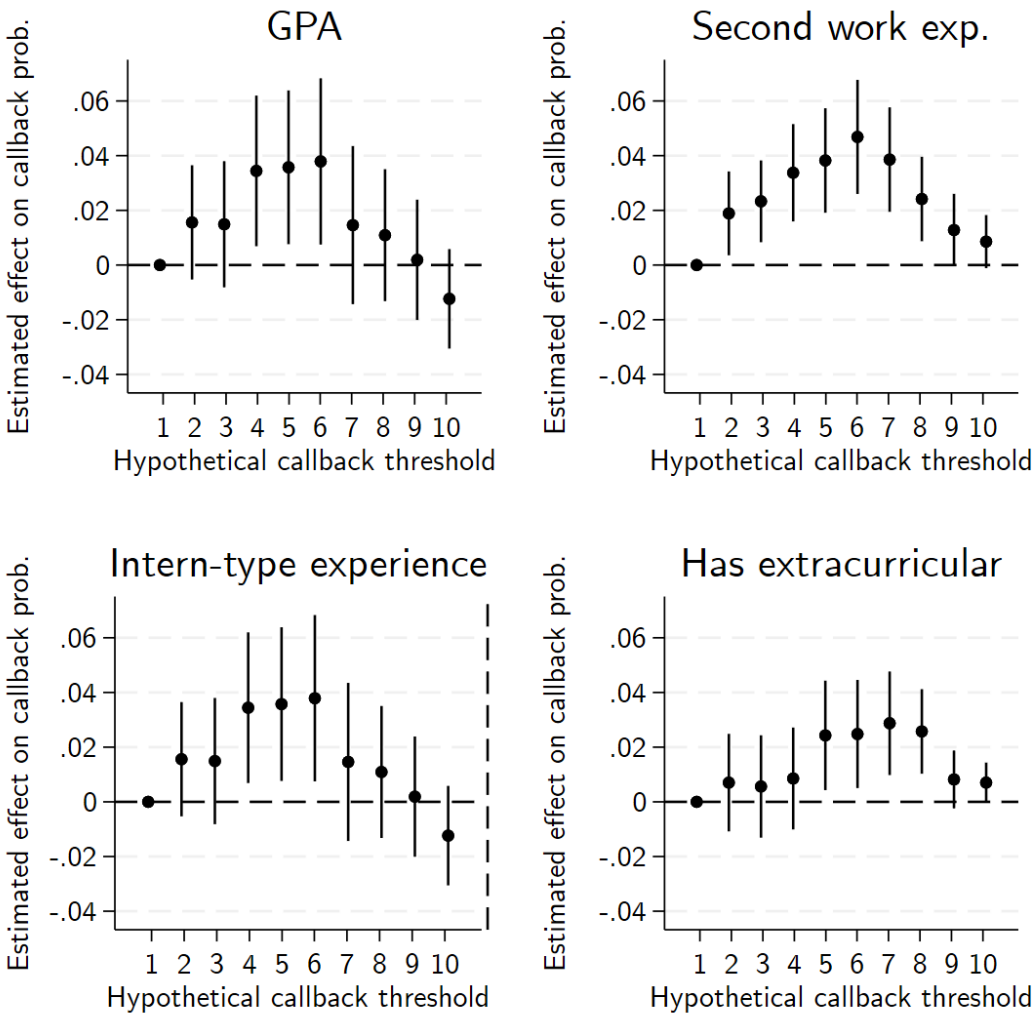
Notes: This figure plots the coefficients of a regression of an indicator for an employer's interest being at each level (e.g., an indicator for an interest level of 1) on GPA, second work experience, internship-type experience, and extracurricular. 95% confidence intervals are shown, standard errors clustered at the respondent level.

Figure D.2: Likelihood of employer WTP at each quintile and resume characteristics



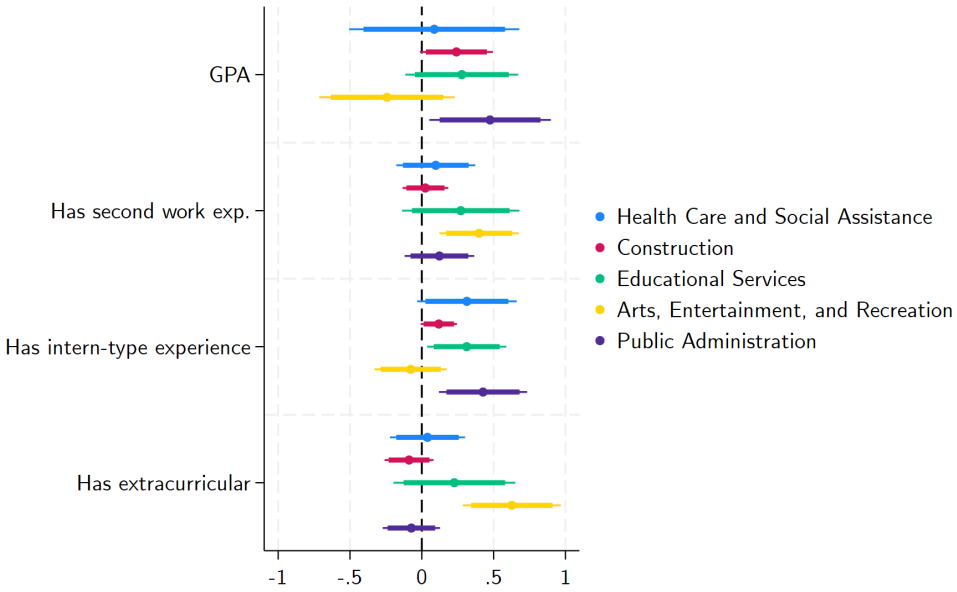
Notes: This figure plots the coefficients of a regression of an indicator for an employer's willingness to pay being at each quintile (e.g., an indicator for being in the first quintile, Q1) on GPA, second work experience, internship-type experience, and extracurricular. 95% confidence intervals are shown, standard errors clustered at the respondent level.

Figure D.3: Likelihood of employer WTP at each quintile and resume characteristics



Notes: This figure plots the coefficients of a regression of an indicator for an employer's interest being greater than or equal to the threshold on GPA, second work experience, internship-type experience, and extracurricular. 95% confidence intervals are shown, standard errors clustered at the respondent level.

Figure D.4: Employer interest by sector, top 5 sectors shown



Notes: This figure plots the coefficients of a regression of employer's interest on GPA, second work experience, internship-type experience, and extracurricular for the most common 5 sectors in our sample. Each color represents a subsample according to the employer's sector. 95% confidence intervals are shown, standard errors clustered at the respondent level.

E Heterogeneity and resume signals in employer preferences for extracurriculars

In this section, we further unpack employers' preferences for extracurriculars. Extracurriculars make up an important part of students' time use and college experience, but they also comprise a diverse group of activities that may offer very different value to employers. For example, some activities, like academic activities, might signal a candidate's technical skills or passion for their topic of interest, while others, like sports, might signal non-cognitive skills like teamwork. Others might signal elements of a candidates' demographics or personality. We find that employers value non-academic activities more highly than academic ones, and that those who report using extracurriculars to evaluate non-cognitive skills place a particularly strong emphasis on sports. However, we find weak evidence that employers with higher levels of client or cross-firm contact place more value on extracurriculars. Finally, we find little evidence that extracurriculars are used as signals of demographics or personality in the absence of other indicators about these on a resume.

First, we use our rich data on employers and students to highlight the importance of a previously-understudied element of the job search process: students' extracurricular activities. Given little prior quantitative evidence on students' extracurricular participation and employers' use of these activities in evaluating candidates, especially in our context, we provide descriptive evidence that students spend a significant amount of time on these activities and examine the reasons why they may matter to employers.

Using self-reported time use data from our student sample, we show that students' participation in extracurriculars is a large and important element of their undergraduate experience. Figure E.1a plots the hours that students reporting spending on academic activities, extracurriculars, and work. It shows that students spend an average of 6.5 hours per week on extracurricular activities, which includes organized group activities (e.g., volunteering, student organizations, and Greek life), organized college-level athletics, and amateur and intramural sports. In comparison, students spend on average 34.0 hours per week on class and studying and 16.4 hours per week on working at a job. A number of students report participating in extracurriculars more than 20 hours per week.

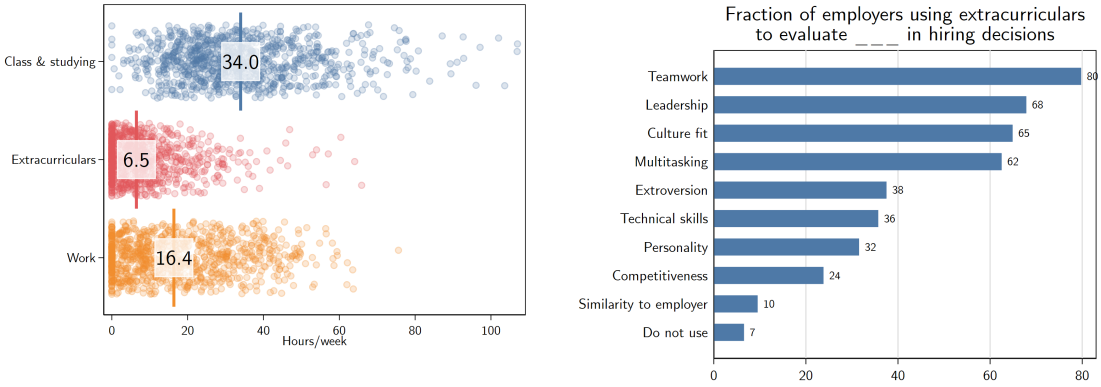
At the same time, we find self-reported evidence that employers in our sample rely on extracurricular information and state that they do so to infer candidates' non-cognitive skills and cultural fit. Figure E.1b shows that, among all employers in our sample, only 7% report

that they do not use extracurriculars to evaluate candidate characteristics at all. Among the rest of the 93% that do, the top purposes reported by the majority of employers as why they rely on extracurricular activities is to infer the candidate's non-cognitive skills like teamwork (80%) and leadership (68%). The next most common purpose is culture fit (65%). Less than half of employers report that they use extracurriculars to infer the candidate's extroversion (38%), technical skills (36%), personality (32%), and competitiveness (24%). A small minority, 10%, of employers report they use extracurriculars to identify candidates who share their own hobbies and interests. Appendix Figure E.2 shows the share of employers citing each purpose for evaluating candidates' extracurricular activities, by sector. Teamwork is the most commonly cited purpose in every sector. Finance/Insurance/Business employers are distinctively likely to evaluate competitiveness (79%). Youth camp employers universally cite culture fit (10o%) and are most likely to evaluate extroversion (81%). Healthcare employers are least likely to cite competitiveness (8%).

Figure E.1: Descriptive evidence on the importance of extracurriculars

(a) Average number of hours students spend on academics, extracurriculars, and work

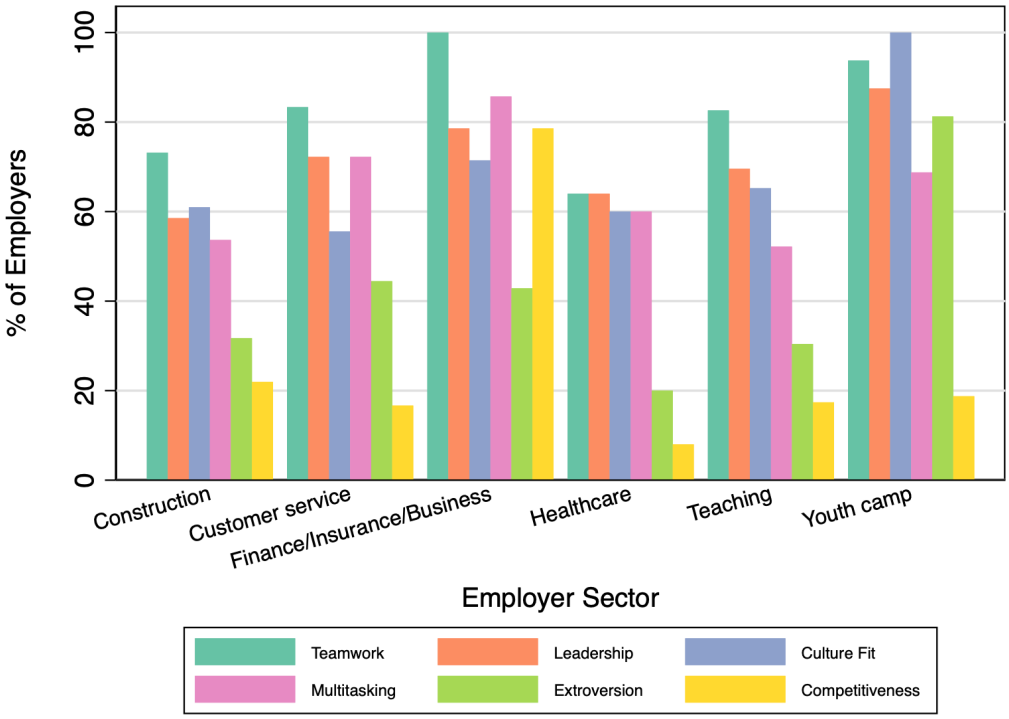
(b) Employers' self-reported reasons for using extracurriculars



Notes: This figure presents descriptive evidence on the importance of extracurriculars to students and employers in our sample. Panel (a) presents a jittered scatterplot showing the distribution of students' time use (hours per week) on class and studying, extracurriculars, and work. The average hours per week for each activity is highlighted. Panel (b) shows the share of employers who report using extracurriculars to evaluate each characteristic, with multiple responses allowed.

However, we have little rigorous evidence on how employers use resume elements like extracurriculars as they screen resumes. To unpack this, we next explore experimental evidence on employer preferences and explore whether these preferences vary with the characteristics of the job or employer, intensity of client and coworker interactions, employers' similarity to candidates, and the amount of information employers have about candidate personality,

Figure E.2: Employers' reasons for relying on extracurriculars, common sectors shown



Notes: This figure shows the share of employers citing each purpose for evaluating candidates' extracurricular activities, by sector. Sample restricted to employers who consider extracurriculars (N = 137 across 6 sectors).

race, and socioeconomic background.

Having shown that extracurriculars likely play an important role for both students and employers, we next unpack employers' preferences in more detail. Using our experimental technique as in Section 4.2, we find that employers value certain types of extracurriculars more than others, placing more value on volunteering activities and sports and placing little value on academic activities. Table E.1 presents results on how employers value the four different types of extracurriculars we randomized—namely, academic extracurriculars, volunteering activities, "backyard" sports (e.g., basketball), and "country-club" sports (e.g., lacrosse), with the omitted reference group consisting of candidates who list no extracurricular activities. Compared to this base group, both types of sport-based extracurriculars are significantly associated with greater employer interest (increasing interest by 0.155 and 0.202, respectively). Volunteer & service activities also significantly increase interest, while academic extracurriculars show no discernible effect. As above, despite their positive association with employer interest, none of the extracurricular categories significantly increase employers' willingness to pay.

Why do employers emphasize sports and volunteer activities? One motivation for employers placing value on extracurriculars might be that they signal certain non-cognitive skills that might be useful in client interactions.

To further understand the mechanism for how and why extracurriculars matter to employers and the role of different types of activities, we test how employers' preferences vary according to whether they report using extracurriculars to evaluate non-cognitive skills. Given that sports often involve close coordination with a team, this type of extracurricular may be particularly important for employers evaluating certain social attributes. To test this, we examine interacted models where the broad extracurricular category–sport-based vs. non-sport (i.e., academic or volunteer activity)–is interacted with the reasons employers give as to why they rely on extracurriculars in their self-reports. Although this analysis was not pre-specified, we performed it in order to test whether employers' valuations relate to their self-reports. In these regressions, whose results are presented in Table E.2, the common excluded (base) group is the average rating by employers who claim not to use extracurriculars for a certain purpose and their rating on resumes with no extracurriculars.

Table E.2 reveals that extracurriculars, and sports in particular, increase hiring interest for employers who use extracurriculars to assess candidate's social skills and fit with their workplace culture. In particular, in column (2), employers who use extracurriculars to infer "fit" place more weight on sports activities than employers who do not use them for this

Table E.1: Employer ratings particularly favor non-academic extracurriculars, primarily sports

	(1)	(2)	(3)	(4)
	Interest	Likelihood to accept	Willingness to pay	IHS(WTP)
GPA	0.154*	0.0671	0.541	0.0346
	(0.0822)	(0.0738)	(0.421)	(0.0339)
Has second work exp.	0.246***	0.202***	0.290	0.0189
	(0.0523)	(0.0489)	(0.287)	(0.0246)
Has intern-type experience	0.138**	0.0224	0.719***	0.0499**
	(0.0533)	(0.0511)	(0.252)	(0.0214)
Academic	0.0140	-0.0268	0.284	0.0122
	(0.0704)	(0.0696)	(0.428)	(0.0362)
Volunteer & service	0.168**	0.102	-0.272	-0.0252
	(0.0723)	(0.0720)	(0.385)	(0.0331)
Country club sport	0.159*	0.134*	-0.719	-0.0681*
	(0.0817)	(0.0733)	(0.444)	(0.0376)
Backyard sport	0.202**	0.0878	-0.335	-0.0567
	(0.0783)	(0.0731)	(0.495)	(0.0412)
Dependent variable mean				
Dependent variable SD				
Employer FE				
Resume order FE				
Observations	7158	7158	7158	7158

Notes: This table shows employers' preferences across different types of extracurricular activities. The dependent variable in each regression is noted: interest represents the employer's interest in hiring the candidate on a scale of 1-10, likelihood to accept represents the employer's belief about a candidate's likelihood of accepting their position on a scale of 1-10, willingness to pay represents the highest annual salary the employer would be willing to pay this candidate in thousands of dollars, and IHS(WTP) is the inverse hyperbolic sine of this. * $p < .1$, ** $p < .05$, *** $p < .01$

Table E.2: Sport-based extracurriculars are most relevant for employers who use extracurriculars to infer candidate extroversion and culture fit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GPA	0.142*	0.140	0.135	0.142*	0.141*	0.142*	0.143*	0.139	0.143*
	(0.0849)	(0.0851)	(0.0853)	(0.0850)	(0.0845)	(0.0846)	(0.0848)	(0.0852)	(0.0849)
Has second work exp.	0.241***	0.242***	0.243***	0.241***	0.241***	0.241***	0.242***	0.240***	0.240***
	(0.0539)	(0.0537)	(0.0537)	(0.0538)	(0.0537)	(0.0540)	(0.0536)	(0.0538)	(0.0536)
Has intern-type experience	0.125**	0.124**	0.128**	0.125**	0.126**	0.125**	0.124**	0.125**	0.126**
	(0.0554)	(0.0554)	(0.0554)	(0.0556)	(0.0554)	(0.0554)	(0.0554)	(0.0554)	(0.0553)
Non-sport	0.0976	0.158	0.0727	0.0667	0.00440	0.119	0.103	0.0568	0.0612
	(0.0756)	(0.102)	(0.0636)	(0.0764)	(0.122)	(0.118)	(0.0797)	(0.0931)	(0.0669)
Sport	0.167**	-0.00359	0.122*	0.154*	0.0340	0.205	0.0751	0.246**	0.121
	(0.0784)	(0.115)	(0.0720)	(0.0803)	(0.123)	(0.203)	(0.0848)	(0.124)	(0.0828)
Non-sport × To infer personality traits	-0.0439								
	(0.119)								
Sport × To infer personality traits	0.00887								
	(0.168)								
Non-sport × To get a sense of fit in our workplace culture		-0.114							
		(0.123)							
Sport × To get a sense of fit in our workplace culture		0.267*							
		(0.144)							
Non-sport × To select candidates who share my hobbies and interests			0.117						
			(0.153)						
Sport × To select candidates who share my hobbies and interests			0.508*						
			(0.283)						
Non-sport × To evaluate applicants' technical skills				0.0474					
				(0.119)					
Sport × To evaluate applicants' technical skills				0.0444					
				(0.160)					
Non-sport × To evaluate leadership experience					0.117				
					(0.136)				
Sport × To evaluate leadership experience					0.200				
					(0.150)				
Non-sport × To evaluate teamwork or collaboration skills						-0.0440			
						(0.135)			
Sport × To evaluate teamwork or collaboration skills						-0.0435			
						(0.216)			
Non-sport × To evaluate extroversion or sociability							-0.0518		
							(0.116)		
Sport × To evaluate extroversion or sociability							0.253*		
							(0.147)		
Non-sport × To evaluate multi-tasking or time management skills								0.0432	
								(0.119)	
Sport × To evaluate multi-tasking or time management skills								-0.122	
								(0.149)	
Non-sport × To evaluate competitiveness									0.0938
									(0.144)
Sport × To evaluate competitiveness									0.203
									(0.164)
Coef, sport-non-sport	0.0528	0.382	0.391	-0.00295	0.0833	0.000517	0.305	-0.165	0.109
SE, sport-non-sport	0.156	0.142	0.283	0.153	0.154	0.222	0.147	0.154	0.167
p-value, sport-non-sport	0.735	0.00811	0.169	0.985	0.589	0.998	0.0394	0.286	0.515
Observations	6720	6720	6720	6720	6720	6720	6720	6720	6720

Notes: This table shows heterogeneity in employers' preferences according to the reasons they report using extracurriculars. The dependent variable is the employer's interest in hiring the candidate on a scale of 1-10. Each column contains an interaction term with a reason employers reported using extracurriculars. Standard errors clustered at the respondent level in parentheses * $p < .1$, ** $p < .05$, *** $p < .01$

purpose. The results also show that sports increase employer interest by significantly more than non-sport ones. A similar finding in column (3) highlights that extracurriculars, and sports in particular, are more important to employers who use extracurriculars to identify candidates who share their hobbies and interests. At the same time, in column (8), for employers who use activities to infer extroversion, resumes with sports activities again receive an additional 0.3 point increase in interest ratings. The sports coefficient is not just statistically different but also substantively larger, suggesting that these activities matter more to employers who value sociability and shared identity. In contrast, for traits like leadership, teamwork, or multitasking, there is no significant interaction between these and employers' preferences for either sports or non-sports, and the differences between sport and non-sport extracurriculars are small and statistically insignificant.

These non-cognitive skills might be particularly important for employers with high levels of interactions with clients or other firms. However, Table E.3 shows little evidence to support this hypothesis. The table shows results split by whether employers report having frequent client meetings, playing sports with clients, playing sports with other firms, or having entry-level employees given presentations. We find that, in fact, the value placed on extracurriculars is higher for employers who report that they do not have frequent client meetings and do not play sports with clients. There is no substantial difference between employers who report playing sports with teams from other firms.

Table E.3: Heterogeneity in employer interest by workplace environment

	(1) Client meetings	(2) No client meetings	(3) Client sports	(4) No client sports	(5) Firm sports	(6) No firm sports	(7) Give presentations	(8) Don't give presentations
GPA	0.227**	0.249	0.217	0.232**	0.142	0.242**	0.225**	0.268*
	(0.103)	(0.164)	(0.193)	(0.0929)	(0.167)	(0.0929)	(0.101)	(0.149)
Has second work exp.	0.255***	0.195	0.0631	0.285***	0.0875	0.262***	0.241***	0.228*
	(0.0651)	(0.116)	(0.0929)	(0.0691)	(0.135)	(0.0637)	(0.0667)	(0.115)
Has intern-type experience	0.230***	-0.0567	0.195	0.118*	0.145	0.133**	0.187***	-0.0445
	(0.0713)	(0.0981)	(0.118)	(0.0666)	(0.171)	(0.0621)	(0.0712)	(0.0966)
Has extracurricular	0.0325	0.323**	0.0969	0.137*	0.152	0.113	0.141*	0.0654
	(0.0733)	(0.124)	(0.113)	(0.0752)	(0.177)	(0.0690)	(0.0786)	(0.105)
Dependent variable mean	3.723	4.627	3.312	4.181	5.089	3.824	4.080	3.757
Dependent variable SD	2.892	2.809	2.679	2.926	3.312	2.786	2.917	2.825
Observations	3840	1680	1160	4360	760	4760	4120	1400

Notes: This table shows heterogeneity in employers' preferences according to the characteristics of their workplace. The dependent variable is the employer's interest in hiring the candidate on a scale of 1-10. Each column represents a subsample of observations. Column (1) contains those who report having frequent meetings with clients, column (2) the inverse, column (3) those who report playing sports with clients, column (4) the inverse, column (5) those who report playing sports with other firms, column (6) the inverse, column (7) those who report having entry-level employees give presentations, and column (8) the inverse. Standard errors clustered at the respondent level in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

In line with employers using extracurriculars as a signal of candidates' non-cognitive skills, we also test whether employers use them as signals when other characteristics are un-

observed. To do this, we study employer preferences in the presence of resumes that are relatively more or less informative about candidates' socioeconomic background, personality, and race. Some randomly-generated resumes included personality-indicative candidate taglines (e.g., "Extroverted Student") while others included generic ones (e.g., "Graduating Student"). Some resumes included high school names that indicated high or low socioeconomic status, while others replaced high school names with an ambiguous "High School Diploma". Finally, some resumes included racially ambiguous names, while others included racially indicative names. To the extent that employer preferences differ depending on the presence of information about these characteristics, this allows us to further probe into whether employers rely on extracurriculars as signals of candidate personality, socioeconomic status, and/or race.

There is little evidence that employers' preferences for extracurriculars differ when provided with more information about candidates' socioeconomic background or personality. Appendix Table E.4 shows that there is no significant difference in the value placed on extracurriculars when employers are given more information about candidates' personality or socioeconomic background. Employers do not prefer candidates with personality-indicative taglines, and the interaction between the tagline and extracurricular is small and not significant. Employers do seem to value extracurriculars less when given more information about a candidate's high school, whether it indicates a high or low SES background, but the results are not significant.

There is suggestive evidence that employers evaluate extracurriculars differently depending on the signals of race available on the resume. Appendix Table E.4 shows that, when employers view a name likely belonging to a Black person on a resume, relative to a name of ambiguous race, they value extracurriculars less. Although the results are not significant, they also appear to place less value on extracurriculars for candidates with Hispanic names, while placing more value for candidates with White and Asian names. The magnitudes are large and qualitatively important, although noisily estimated: although employers place a positive value on extracurriculars for resumes with white and Asian names, they place negative value on these for Black and Hispanic individuals, with magnitudes larger than the value of internship-type experiences.

Table E.4: Resume information and employer preferences

	(1)	(2)	(3)
	Interest	Interest	Interest
GPA	0.154*	0.154*	0.151*
	(0.0820)	(0.0821)	(0.0822)
Has second work exp.	0.244***	0.245***	0.243***
	(0.0521)	(0.0524)	(0.0523)
Has intern-type experience	0.140***	0.140***	0.140***
	(0.0531)	(0.0534)	(0.0533)
Has extracurricular	0.106	0.127*	0.135*
	(0.0650)	(0.0730)	(0.0782)
Personality-indicative tagline	0.0203		
	(0.0610)		
Has extracurricular × Personality-indicative tagline	0.0673		
	(0.0876)		
High SES HS		0.00700	
		(0.0897)	
Has extracurricular × High SES HS		0.0117	
		(0.123)	
Low SES HS		-0.00214	
		(0.0751)	
Has extracurricular × Low SES HS		0.0421	
		(0.107)	
White			0.0355
			(0.0768)
Black			0.299**
			(0.142)
Asian			-0.0337
			(0.215)
Hispanic			0.256
			(0.168)
Has extracurricular × White			0.00678
			(0.108)
Has extracurricular × Black			-0.366*
			(0.210)
Has extracurricular × Asian			0.0856
			(0.313)
Has extracurricular × Hispanic			-0.287
			(0.209)
Female			-0.0976
			(0.0670)
Has extracurricular × Female			0.0955
			(0.0866)
Constant	3.371***	3.382***	3.391***
	(0.285)	(0.290)	(0.290)
Dependent variable mean			
Dependent variable SD			
Observations	7158	7158	7158

Notes: This table shows heterogeneity in employers' preferences according to the information available on the resume. The dependent variable is the employer's interest in hiring the candidate on a scale of 1-10. Each column contains an interaction term with a resume characteristic. Personality-indicative tagline indicates whether the resume contained a tagline with a personality-indicative descriptor, high and low SES HS indicate whether the resume contained a high school associated with a high or low socioeconomic status, and White, Black, Asian, Hispanic, and Female indicate whether the name on the resume signalled those demographics. Standard errors clustered at the respondent level in parentheses * $p < .1$, ** $p < .05$, *** $p < .01$

F Alternative measure of information quality based on the 100-point allocation exercise

In addition to the experimentally-derived measure presented in the main text, in this appendix, we examine a complementary measure based on employers' and students' self-reported relative weights on different resume elements. This measure allows us to obtain a richer picture of the divergence between employers' and students' beliefs and to capture elements that do not appear directly on resumes.

F.1 Developing the measure of information accuracy using the 100-point allocation exercise

Our second measure of students' information quality is based on self-reported employers' self-reported preferences and students' beliefs about these based on the 100-point allocation exercise that both employers and students completed, assigning commensurate (hypothetical) points to resume elements based on how important they were in hiring considerations.

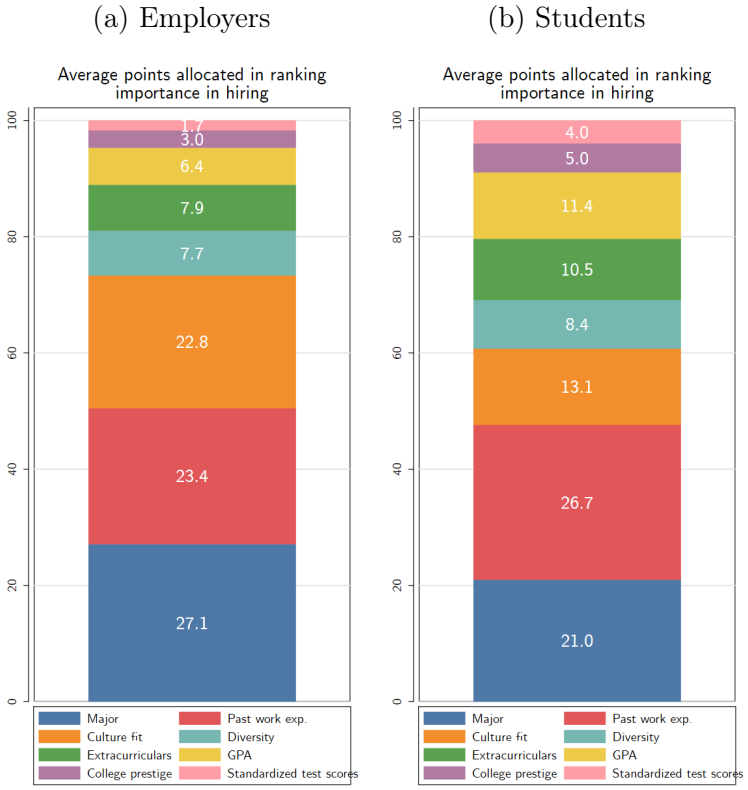
Figure F.3 shows that employers place most value on major and past work experience, and students also place these as very important. However, students underestimate the importance of culture fit and overestimate the importance of GPA and extracurriculars. These descriptives motivate further study of students' information quality.

To construct a measure of how accurate each student's beliefs are, for each student, we deduct from the point(s) they allocated to a certain resume element the average (and median) score allocated by employers for that same element. Each students' responses are compared to those for employers hiring for a position similar to that for which the student responded. As in the main measure of information quality, we calculate the Euclidean distance between student and employer rankings as a summary of the total difference between them.

F.2 Patterns in students' information quality

We find that first generation students seem to have worse information than their peers, while students with more friends tend to have better information. Notably, all groups studied have negative coefficients on the ranking of past work experience, with especially large gaps for first-gen, female, and non-white students. This suggests a spread in misunderstanding about how much employers value practical work history. These patterns still persist, but

Figure F.3: Average points allocated to various candidate characteristics in 100-point allocation exercise completed by employers and students

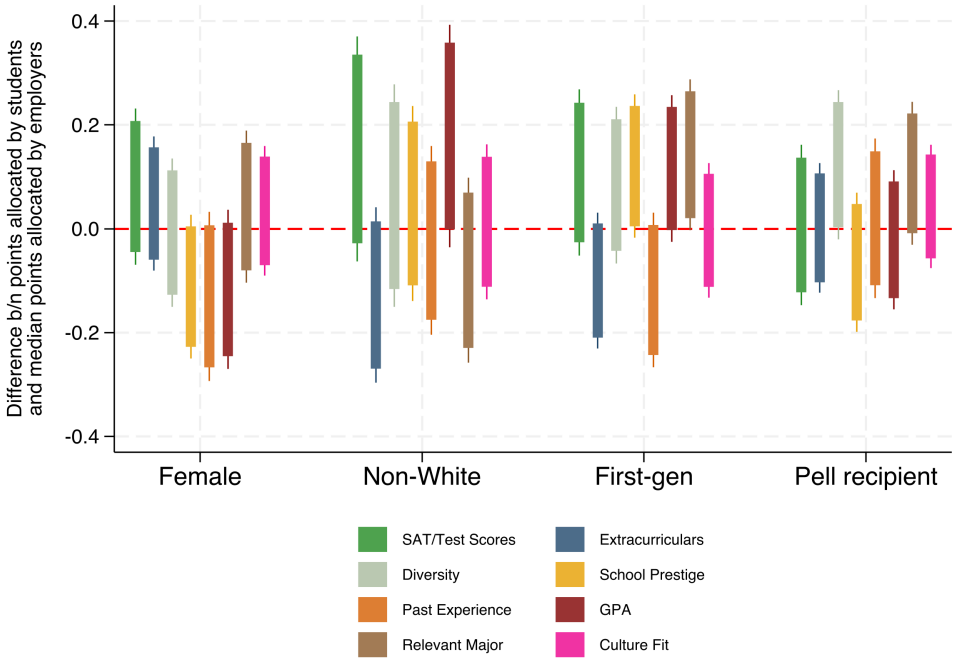


Notes: This figure compares employer and student responses on an exercise asking each to allocate 100 points between the resume elements they believed to be most important. The size of each bar and number represent the average number of points allocated to the corresponding element. Panel (a) contains the results for employers and panel (b) contains students' beliefs about employers' responses.

in a muted manner, when we include additional controls, particularly GPA, suggesting that students with lower GPAs may have a systematically distorted understanding of employer preferences that is related to their own academic performance. See Figure F.4.

When we study homophily and its relationship with information accuracy using the measure derived from the 100-point allocation exercise (Table F.5), the results are markedly different: the coefficients are neither economically nor statistically significant, but their signs are opposite to what we find above. Students with more homophilous friend-groups are actually more likely to have more accurate information about employers' 100-point allocation responses (though imprecisely estimated). This contrast is instructive: the 100-point allocation exercise captures employers' *stated* preferences—the kind of information that they are aware of and may readily reveal during the job search process. The coefficient-based measure, by contrast, reflects *revealed* preferences estimated from actual hiring decisions, which may diverge from what employers say they value. That racial homophily predicts miscalibration about the latter but not the former suggests that diverse social networks matter most for the kind of tacit, harder-to-observe information that does not travel through formal channels.

Figure F.4: Heterogeneity in patterns of information quality



Notes: this figure plots the coefficients from a regression of a student's difference from employers in ranking on each resume element on an indicator for a student being female, non-white, first generation, and a Pell grant recipient. 90% and 95% confidence intervals are shown.

Table F.5: Homophily and information quality, as measured from the 100-point allocation exercise

	(1)	(2)	(3)	(4)	(5)	(6)
	All dims	Aggregate	Excess (campus)	Excess (75/25)	Binary (75/25)	Interact. x NW
Num. of close friends	-0.0313	-0.0350	-0.0316	-0.0313	-0.0296	-0.0310
	(0.0297)	(0.0296)	(0.0297)	(0.0297)	(0.0298)	(0.0298)
Female	-0.0828	-0.117	-0.0824	-0.0828	-0.0840	-0.0907
	(0.101)	(0.104)	(0.101)	(0.101)	(0.101)	(0.104)
Non-White	0.0918	0.144	0.155	0.165^{+}	0.131	0.153
	(0.142)	(0.124)	(0.124)	(0.122)	(0.122)	(0.125)
First-gen	0.116	0.112	0.116	0.116	0.112	0.120
	(0.0999)	(0.0991)	(0.0999)	(0.0999)	(0.100)	(0.0998)
Pell recipient	0.0552	0.0629	0.0550	0.0552	0.0486	0.0553
	(0.0967)	(0.0970)	(0.0968)	(0.0967)	(0.0976)	(0.0968)
Self-reported GPA	-0.0394	-0.0245	-0.0385	-0.0394	-0.0392	-0.0341
	(0.115)	(0.115)	(0.115)	(0.115)	(0.115)	(0.113)
Has extracurricular	-0.0902	-0.0899	-0.0981	-0.0902	-0.0866	-0.0921
	(0.131)	(0.129)	(0.131)	(0.131)	(0.131)	(0.131)
Same race share	-0.146					
	(0.166)					
Same gender share	-0.214		-0.218^{+}	-0.214	-0.213	-0.211
	(0.167)		(0.167)	(0.167)	(0.167)	(0.166)
Similar major share	0.299*		0.296*	0.299*	0.298*	0.296*
	(0.163)		(0.164)	(0.163)	(0.162)	(0.162)
Similar income share	-0.0244		-0.0477	-0.0244	-0.0237	-0.0216
	(0.146)		(0.146)	(0.146)	(0.141)	(0.146)
Avg. homophily (all dimensions)		-0.117				
		(0.264)				
Excess same-race (campus shares)			-0.0460			
			(0.157)			
Excess same-race (75/25)				-0.146		-0.180
				(0.166)		(0.192)
Excess same-race = 1 (75/25)					-0.136	
					(0.107)	
Non-White						0
						(.)
Excess (75/25) x Non-White						0.148
						(0.336)
Dependent variable mean	-0.0821	-0.0821	-0.0821	-0.0821	-0.0821	-0.0821
Dependent variable SD	0.970	0.970	0.970	0.970	0.970	0.970
Observations	376	376	376	376	376	376

Notes: The dependent variable is the Euclidean distance between a student's 100-point allocation across hiring attributes and the average employer allocation, computed within each secto r. Higher values indicate worse calibration. All other variables and specifications mirror those in Table G.3. Standard errors clustered at the student level in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

F.3 Relationship between beliefs and job outcomes

Using this measure, we find a qualitatively similar pattern in the relationship between information and job outcomes as when using the experimentally-derived measure. The results in Table F.6 show the association between these outcomes and the various dimensions of information quality by this measure. In line with the results above, students who are further from employers' rankings about the importance of different resume elements submit fewer applications, and this is especially true of students who are more incorrect about the importance of GPA and diversity. Students who are more incorrect about culture fit and diversity also receive fewer total offers, and are somewhat less likely to have accepted a position.

Turning to wages, as with the other measure of information quality, we find suggestive evidence that students with worse information accept lower wages. Table F.7 shows that students who are more incorrect about the importance of culture fit and diversity, in particular, tend to accept lower wages, with 1 SD worse information about culture fit associated with nearly a 14% lower accepted wage.

Table F.6: Information quality and employment outcomes, full set of outcomes

	(1) Applications	(2) R1/app	(3) Offers/app	(4) Offers	(5) Offers, full time	(6) Accepted position	(7) Accepted intern.	(8) Accepted job	(9) Grad school
Raw diff. wrt major	-2.052	-0.00797	0.109	0.211	-0.0262	0.00129	0.0111	-0.0165	0.00779
	(1.724)	(0.0269)	(0.108)	(0.179)	(0.124)	(0.0342)	(0.0296)	(0.0306)	(0.0166)
Raw diff. wrt past experience	-1.726	0.0188	0.0763+	0.0470	0.0834	-0.0244	-0.0233	-0.0246	-0.00459
	(1.427)	(0.0241)	(0.0496)	(0.141)	(0.0798)	(0.0301)	(0.0269)	(0.0300)	(0.0146)
Raw diff. wrt culture fit	-1.294	0.0392	-0.0570	-0.401*	-0.217+	-0.00926	0.0158	-0.0344	0.0270
	(2.070)	(0.0332)	(0.116)	(0.238)	(0.147)	(0.0420)	(0.0366)	(0.0355)	(0.0292)
Raw diff. wrt diversity	-2.764*	0.0258	-0.0730	-0.252*	-0.130+	-0.0471+	-0.00771	-0.0665**	-0.000286
	(1.444)	(0.0293)	(0.0771)	(0.144)	(0.0880)	(0.0360)	(0.0315)	(0.0336)	(0.0176)
Raw diff. wrt extracurricular	-1.434+	-0.0104	-0.0670+	-0.00359	-0.120*	0.0115	0.0177	0.0343	0.0126
	(1.012)	(0.0276)	(0.0497)	(0.132)	(0.0721)	(0.0325)	(0.0291)	(0.0348)	(0.0153)
Raw diff. wrt GPA	-2.884**	-0.0326	-0.00200	0.0299	0.0734	-0.0185	-0.0511*	0.00821	0.00458
	(1.383)	(0.0276)	(0.0417)	(0.155)	(0.0941)	(0.0345)	(0.0275)	(0.0332)	(0.0178)
Raw diff. wrt prestige	0.0479	0.00340	-0.0810	0.0659	-0.199**	-0.0334	-0.00451	-0.0345	0.0181
	(2.044)	(0.0312)	(0.0746)	(0.178)	(0.0973)	(0.0417)	(0.0372)	(0.0388)	(0.0230)
Raw diff. wrt SAT scores	-0.287	0.0220	0.0247	0.203	0.115+	0.0360	0.0242	0.0330	-0.0220*
	(1.391)	(0.0257)	(0.0460)	(0.218)	(0.0806)	(0.0331)	(0.0271)	(0.0315)	(0.0127)
Female	-5.275+	0.0714+	0.0490	0.133	-0.0519	0.0201	0.0839+	-0.0241	0.0269
	(3.603)	(0.0493)	(0.101)	(0.280)	(0.156)	(0.0637)	(0.0532)	(0.0624)	(0.0292)
GPA	-8.868*	0.0571	-0.123	-0.732*	-0.452*	0.0694	0.0773	-0.0152	0.0348
	(5.064)	(0.0585)	(0.202)	(0.398)	(0.257)	(0.0734)	(0.0642)	(0.0702)	(0.0294)
Dependent variable mean	14.01	0.417	0.478	2.049	0.558	0.547	0.256	0.388	0.0647
Dependent variable SD	29.00	0.346	0.901	2.239	1.323	0.499	0.437	0.488	0.246
Observations	305	252	283	283	283	309	309	309	309

	(1) Applications	(2) R1/app	(3) Offers/app	(4) Offers	(5) Offers, full time	(6) Accepted position	(7) Accepted intern.	(8) Accepted job	(9) Grad school
Euclidean distance from avg. rankings (SD)	-5.177**	0.0240	0.0752+	0.0235	-0.0867	-0.0438+	-0.0193	-0.0566*	0.0247
	(2.102)	(0.0285)	(0.0471)	(0.230)	(0.122)	(0.0340)	(0.0297)	(0.0312)	(0.0220)
Female	-5.559+	0.0652+	0.0460	0.183	-0.0653	0.0295	0.0860+	-0.00996	0.0280
	(3.622)	(0.0485)	(0.0962)	(0.277)	(0.153)	(0.0625)	(0.0527)	(0.0617)	(0.0283)
GPA	-9.063*	0.0524	-0.135	-0.771*	-0.409+	0.0615	0.0622	-0.0184	0.0340
	(4.968)	(0.0580)	(0.214)	(0.395)	(0.262)	(0.0734)	(0.0639)	(0.0697)	(0.0286)
Dependent variable mean	14.01	0.417	0.478	2.049	0.558	0.547	0.256	0.388	0.0647
Dependent variable SD	29.00	0.346	0.901	2.239	1.323	0.499	0.437	0.488	0.246
Observations	305	252	283	283	283	309	309	309	309

Notes: This table shows the association between students' misperceptions about employers' preferences and students' job outcomes. The dependent variable in each regression is noted: the outcome for column (1) is the number of applications the student submitted, column (2) is the number of round 1 interviews per application, column (3) is the number of offers received per application, column (4) is the total number of offers, column (5) is the total number of full-time offers, column (6) is an indicator for whether the respondent had accepted any position, column (7) is whether the respondent had accepted an internship, column (8) is whether the respondent had accepted a job, and column (9) is whether the respondent planned to attend graduate school. Each independent variable represents the raw difference between the points the student respondent allocated with respect to the referenced resume element (e.g., major) and the average points allocated by employers in the sector corresponding to that students' target sector in their job search. The Euclidean distance between the students' and employers' rankings summarizes these. Heteroskedasticity-robust standard errors in parentheses + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

Table F.7: Information quality and wage outcomes

	(1) Accepted wage	(2) Avg. offered wage	(3) IHS accepted wage	(4) IHS avg. offered wage	(5) Negotiated
Raw diff. wrt major	2155.5	-1950.5+	0.0346	-0.387+	-0.0407+
	(2186.2)	(1274.3)	(0.0551)	(0.265)	(0.0277)
Raw diff. wrt past experience	-249.7	1466.9+	0.00572	0.281**	0.0141
	(1868.4)	(1079.2)	(0.0522)	(0.137)	(0.0263)
Raw diff. wrt culture fit	-5010.3***	-3028.8**	-0.151***	-0.219	-0.0541*
	(1766.3)	(1399.7)	(0.0527)	(0.231)	(0.0319)
Raw diff. wrt diversity	-2476.6+	-121.3	-0.0629+	0.379	0.0234
	(1603.3)	(1399.5)	(0.0487)	(0.304)	(0.0353)
Raw diff. wrt extracurricular	2622.5+	379.8	0.0685	0.282*	0.00931
	(1970.9)	(1134.3)	(0.0722)	(0.165)	(0.0256)
Raw diff. wrt GPA	-615.0	-1044.4	0.00897	0.178	0.0599*
	(1780.3)	(1064.8)	(0.0563)	(0.174)	(0.0334)
Raw diff. wrt prestige	-2655.5+	318.3	-0.166*	-0.224	-0.0569**
	(1965.9)	(1810.5)	(0.0972)	(0.290)	(0.0271)
Raw diff. wrt SAT scores	97.05	-1071.5	0.0228	0.0389	0.0341
	(1213.7)	(929.6)	(0.0425)	(0.140)	(0.0292)
Female	-6142.7*	-3814.4+	-0.184*	0.121	-0.0542
	(3311.7)	(2333.9)	(0.104)	(0.360)	(0.0519)
GPA	2850.5	2287.0	0.0684	-0.185	0.0132
	(3280.2)	(2261.2)	(0.107)	(0.358)	(0.0552)
Dependent variable mean	34931.3	29806.2	11.04	10.43	0.150
Dependent variable SD	15804.1	14629.9	0.519	2.343	0.357
Observations	126	201	126	201	234

	(1) Accepted wage	(2) Avg. offered wage	(3) IHS accepted wage	(4) IHS avg. offered wage	(5) Negotiated
Euclidean distance from avg. rankings (SD)	-1774.0	-1478.9	-0.0609	-0.0275	-0.0112
	(1898.6)	(1374.8)	(0.0623)	(0.180)	(0.0262)
Female	-6294.1*	-3691.4+	-0.190*	0.176	-0.0467
	(3377.9)	(2348.0)	(0.106)	(0.374)	(0.0531)
GPA	1760.7	2505.9	0.0345	-0.123	0.0338
	(3212.4)	(2147.1)	(0.105)	(0.339)	(0.0530)
Dependent variable mean	34931.3	29806.2	11.04	10.43	0.150
Dependent variable SD	15804.1	14629.9	0.519	2.343	0.357
Observations	126	201	126	201	234

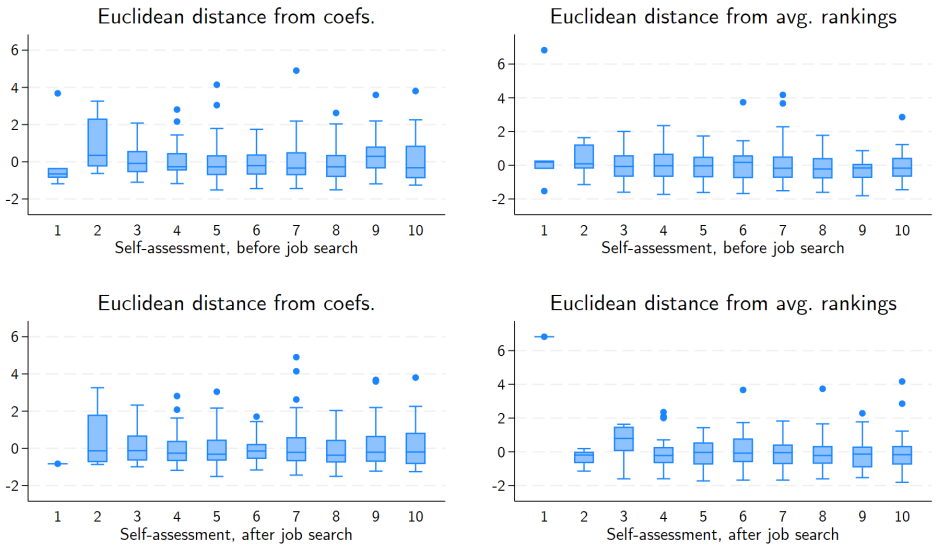
Notes: This table shows the association between students' misperceptions about employers' preferences and students' wage outcomes. The dependent variable in each regression is noted: the outcome for column (1) is the wage the student accepted, column (2) is the average wage the student was offered, column (3) the inverse hyperbolic sine of the wage the student accepted, column (4) is the inverse hyperbolic sine of the average wage the student was offered, and column (5) is an indicator for whether the respondent reported having negotiated an offer. Each independent variable represents the raw difference between the points the student respondent allocated with respect to the referenced resume element (e.g., major) and the average points allocated by employers in the sector corresponding to that students' target sector in their job search. The Euclidean distance between the students' and employers' rankings summarizes these. The coefficients on an indicator for a student being female and the student's GPA are presented for comparison. The coefficients on an indicator for a student being female and the student's GPA are presented for comparison. Heteroskedasticity-robust standard errors in parentheses + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

G Additional results on patterns of information quality

In this section, we show that our measure of information quality is generally unrelated to students' self-reported information about the job search process, but correlate with their job outcomes. We argue that this provides evidence that this measure captures a meaningful element of the job search process not captured by self-reported measures.

These measures of information quality capture an element of students' experiences beyond that which is captured by their self-assessments. Figure G.1 shows that our aggregate measures of information quality correlate only weakly with students' self reports. Students' information quality in the points allocation exercise is somewhat more closely related to their self-assessments, while their information as measured by the IRR exercise is almost unrelated with their self reports. Further, the two measures of information quality are weakly correlated with each other (correlation of 0.06). This highlights that the experiment captures an element of information that is not captured by self-reported measures.

Figure G.1: Information quality and student self-reported understanding of job search



Notes: This figure contains box plots showing the relationship between measures of information quality and students' self-assessments of their understanding of the job search process on a scale from 1 to 10. The shaded areas represent the interquartile range (25th-75th percentile) of the measure of information quality for each level of self-assessed understanding, and the horizontal bar represents the median. Dots represent outliers.

G.1 Heterogeneity and patterns of information quality

Given that students' information quality may be informed by their demographics, life experiences, background, and networks, we study patterns of heterogeneity in information quality according on various dimensions. Tables G.1 studies evidence of heterogeneity in the quality of students' information using each measure of information quality (see Appendix F for details on the measure of information quality based on the 100-point allocation exercise rather than the IRR design).

Overall, non-white students have worse information than their white counterparts. Table G.1 shows suggestive evidence that the Euclidean distance of their coefficients from the employers' is higher. In particular, we find that non-white students are more incorrect in their beliefs about the importance of extracurriculars (by 0.2 SD). Table G.2 confirms this result, showing that non-white students have more incorrect about the points employers allocate to GPA.

To probe the mechanisms behind these demographic gaps—particularly the racial gap—we examine whether the composition of students' social networks helps explain variation in information quality. Using students' self-reported data on trait similarity for up to five close friends, we compute, for each student, the fraction of friends sharing each trait (same race, same gender, similar major, similar income). Overall, about two-thirds of students report having close friends of similar race and gender, but friend similarities among major and income groups are relatively less common, at 28% and 45% respectively.

In Table G.3, we regress our coefficient-based information quality measure on these network composition shares with controls for demographics, GPA, extracurricular participation, and sector fixed effects. A higher same-race friend share predicts worse calibration about employer preferences: a student whose friends are all the same race scores 0.384 points higher on our miscalibration index than a student with no same-race friends at all (Column 1), roughly 0.29 standard deviations of the outcome. The other dimensions—gender, major, income—are not significant in any specification, pointing to a particular role of racial network composition rather than network homogeneity in general. Because high same-race shares could be mechanical on a predominantly white campus, we also construct excess homophily: the gap between a student's observed same-race share and a baseline expectation of 75% for white students and 25% for non-white students. Columns 4 and 5 show that even after netting out what campus demographics alone would predict, excess same-race homophily remains significant both as a continuous variable and as a binary indicator for

whether a student exceeds the threshold. When we interact excess homophily with being non-white (Column 6), the interaction is negative, suggesting that the relationship between racial homophily and miscalibration is weaker for non-white students—but it does not flip sign, so the basic pattern holds for both groups.[15]

[15]These results are robust to restricting the sample to students who have 2 or more friends, suggesting that the pattern is not an artifact of small friend groups.

Table G.1: Heterogeneity in information quality: based on experimental resume ratings

	(1) Std. diff. of coef. on GPA	(2) Std. diff. of coef. on second work exp.	(3) Std. diff. of coef. on internship	(4) Std. diff. of coef. on extracurricular	(5) Euclidean distance from coefs. (SD)
Female	-0.0257	-0.0136	0.0517	-0.0285	-0.0286
	(0.0924)	(0.0849)	(0.0830)	(0.0864)	(0.0907)
Non-White	0.114	-0.0518	0.136	0.219*	0.202*
	(0.118)	(0.112)	(0.113)	(0.119)	(0.116)
First-gen	0.0165	-0.0522	-0.0305	0.0384	0.00831
	(0.0859)	(0.0796)	(0.0847)	(0.0856)	(0.0834)
Pell recipient	0.0435	0.0946	-0.0686	-0.00828	0.0423
	(0.0867)	(0.0838)	(0.0818)	(0.0778)	(0.0857)
GPA	0.103	0.0434	-0.196**	-0.00991	0.0409
	(0.0915)	(0.0889)	(0.0864)	(0.0935)	(0.0890)
Has extracurricular	0.133+	0.0139	0.000980	-0.0438	0.0755
	(0.102)	(0.102)	(0.116)	(0.102)	(0.103)
Num. of close friends	0.00847	0.0251	0.00556	-0.00395	0.0141
	(0.0227)	(0.0261)	(0.0243)	(0.0258)	(0.0236)
Dependent variable mean	0.0637	0.0317	0.0124	0.0317	0.0654
Dependent variable SD	1.049	1.049	1.004	1.014	1.047
Observations	692	692	692	692	692

Notes: This table shows the association between students' misperceptions about employers' preferences and students' wage outcomes. The dependent variable in each regression is noted, corresponding to the standardized (mean 0, standard deviation 1) absolute difference between students' coefficients on each resume characteristic from the corresponding coefficient for employers in the same sector. The Euclidean distance between the students' and employers' coefficients summarizes these. Heteroskedasticity-robust standard errors in parentheses. + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

Table G.2: Heterogeneity in information quality: based on 100-point allocation exercise

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Raw diff. wrt SAT scores	Raw diff. wrt past experience	Raw diff. wrt extracurricular	Raw diff. wrt GPA	Raw diff. wrt diversity	Raw diff. wrt major	Raw diff. wrt prestige	Raw diff. wrt culture fit	Euclidean distance from avg. rankings (SD)
Female	0.0766	-0.152*	0.0661	-0.142*	0.0107	0.0812	-0.109*	0.0425	-0.0847
	(0.0753)	(0.0825)	(0.0648)	(0.0847)	(0.0706)	(0.0758)	(0.0597)	(0.0568)	(0.0730)
Non-White	0.150+	-0.0410	-0.0779	0.251**	0.0946	-0.0526	0.0372	-0.0121	0.0473
	(0.115)	(0.0946)	(0.0831)	(0.115)	(0.108)	(0.0921)	(0.0770)	(0.0682)	(0.0833)
First-gen	0.0488	-0.0806	-0.0621	0.116+	0.0845	0.138*	0.113*	-0.00578	0.0761
	(0.0825)	(0.0752)	(0.0653)	(0.0767)	(0.0768)	(0.0764)	(0.0612)	(0.0586)	(0.0696)
Pell recipient	-0.00888	0.0209	0.000797	-0.0287	0.0694	0.0950+	-0.0113	0.0378	0.0708
	(0.0794)	(0.0781)	(0.0638)	(0.0723)	(0.0730)	(0.0710)	(0.0572)	(0.0539)	(0.0688)
GPA	0.0609	-0.0776	-0.0202	0.285***	-0.00465	-0.0783	0.0505	-0.00278	0.0101
	(0.0764)	(0.0928)	(0.0675)	(0.0817)	(0.0864)	(0.0736)	(0.0578)	(0.0670)	(0.0807)
Has extracurricular	-0.216**	-0.0684	0.0180	-0.00307	-0.0184	-0.0942	-0.0508	-0.0442	-0.112+
	(0.105)	(0.0969)	(0.0883)	(0.0939)	(0.0900)	(0.0974)	(0.0676)	(0.0704)	(0.0862)
Num. of close friends	-0.00704	-0.0140	-0.00364	-0.0405**	0.0156	-0.00944	0.00604	-0.0289+	-0.0335+
	(0.0209)	(0.0231)	(0.0187)	(0.0198)	(0.0197)	(0.0206)	(0.0155)	(0.0188)	(0.0214)
Dependent variable mean	-0.0168	-0.0313	-0.0327	0.0104	-0.0779	-0.0498	-0.0167	-0.0347	-0.0726
Dependent variable SD	0.994	0.978	0.840	0.995	0.874	0.965	0.909	0.992	0.936
Observations	695	695	695	695	695	695	695	695	695

Notes: This table shows the association between students' misperceptions about employers' preferences and students' wage outcomes. The dependent variable in each regression is noted, corresponding to the raw difference between the points the student respondent allocated with respect to the referenced resume element (e.g., major) and the average appoints allocated by employers in the sector corresponding to that students' target sector in their job search. The Euclidean distance between the students' and employers' rankings summarizes these. Heteroskedasticity-robust standard errors in parentheses. + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

Table G.3: Homophily and information quality, as measured by the IRR exercise

	(1)	(2)	(3)	(4)	(5)	(6)
	All dims	Aggregate	Excess (campus)	Excess (75/25)	Binary (75/25)	Interact. x NW
Num. of close friends	0.0296	0.0267	0.0307	0.0296	0.0269	0.0285
	(0.0358)	(0.0348)	(0.0358)	(0.0358)	(0.0356)	(0.0356)
Female	-0.0523	-0.0581	-0.0522	-0.0523	-0.0513	-0.0177
	(0.125)	(0.126)	(0.125)	(0.125)	(0.125)	(0.127)
Non-White	0.404***	0.344**	0.253*	0.254*	0.309**	0.305**
	(0.154)	(0.147)	(0.141)	(0.142)	(0.141)	(0.144)
First-gen	-0.0694	-0.0785	-0.0657	-0.0694	-0.0651	-0.0866
	(0.108)	(0.108)	(0.109)	(0.108)	(0.108)	(0.109)
Pell recipient	0.0954	0.0968	0.0952	0.0954	0.104	0.0961
	(0.119)	(0.120)	(0.119)	(0.119)	(0.120)	(0.119)
Self-reported GPA	0.160+	0.163+	0.159+	0.160+	0.158+	0.137
	(0.107)	(0.107)	(0.108)	(0.107)	(0.108)	(0.109)
Has extracurricular	0.0359	0.0561	0.0397	0.0359	0.0368	0.0461
	(0.151)	(0.147)	(0.151)	(0.151)	(0.152)	(0.149)
Same race share	0.301**					
	(0.148)					
Same gender share	0.0636		0.0666	0.0636	0.0681	0.0524
	(0.184)		(0.184)	(0.184)	(0.183)	(0.183)
Similar major share	0.176		0.184	0.176	0.180	0.191
	(0.187)		(0.186)	(0.187)	(0.186)	(0.187)
Similar income share	-0.0122		-0.00772	-0.0122	0.0101	-0.0235
	(0.139)		(0.142)	(0.139)	(0.139)	(0.139)
Avg. homophily (all dimensions)		0.506*				
		(0.300)				
Excess same-race (campus shares)			0.276**			
			(0.137)			
Excess same-race (75/25)				0.301**		0.453***
				(0.148)		(0.164)
Excess same-race = 1 (75/25)					0.184*	
					(0.110)	
Non-White						0
						(.)
Excess (75/25) x Non-White						-0.649*
						(0.344)
Dependent variable mean	0.0433	0.0433	0.0433	0.0433	0.0433	0.0433
Dependent variable SD	1.026	1.026	1.026	1.026	1.026	1.026
Observations	373	373	373	373	373	373

Notes: The dependent variable is the Euclidean distance between a student's beliefs about employer hiring preferences and the actual coefficients from employer hiring models, averaged across sectors. Higher values indicate worse calibration. Homophily measures are the fraction of a student's close friends (up to five) who share a given trait, based on student self-reports. "Excess" measures subtract an expected same-race baseline: Column 3 uses detailed campus racial shares (e.g., 79% white); Columns 4–6 use a simplified threshold of 75% for white students and 25% for non-white students. Column 5 replaces the continuous excess with a binary indicator equal to one if the student's same-race share strictly exceeds the threshold. Column 6 interacts excess homophily with a non-white indicator; the non-white main effect is absorbed by the control already included in all specifications. All regressions include sector fixed effects and control for number of close friends, gender, race, first-generation status, Pell eligibility, self-reported GPA, and extracurricular participation. Standard errors clustered at the respondent level in parentheses * $p < .1$, ** $p < .05$, *** $p < .01$

G.2 Additional results on student beliefs and information quality

Table G.4: Robustness of student beliefs about employer preferences

	(1)	(2)	(3)	(4)	(5)	(6)
	Interest	Interest	Interest	Interest	Interest	Interest
GPA	0.702***	0.632***	0.702***	0.704***	0.748***	0.727***
	(0.0517)	(0.0574)	(0.0517)	(0.0519)	(0.0545)	(0.0725)
Has second work exp.	0.477***	0.472***	0.477***	0.479***	0.481***	0.492***
	(0.0312)	(0.0312)	(0.0312)	(0.0313)	(0.0326)	(0.0467)
Has intern-type experience	0.649***	0.648***	0.649***	0.652***	0.638***	0.673***
	(0.0333)	(0.0334)	(0.0333)	(0.0334)	(0.0347)	(0.0478)
Has extracurricular	0.328***	0.325***	0.328***	0.330***	0.338***	0.389***
	(0.0300)	(0.0301)	(0.0300)	(0.0301)	(0.0313)	(0.0446)
Dependent variable mean	4.905	4.904	4.905	4.910	4.928	4.897
Dependent variable SD	2.459	2.460	2.459	2.456	2.456	2.457
Student FE	Yes	No	Yes	Yes	Yes	Yes
Resume order FE	Yes	No	No	Yes	Yes	Yes
Sample	Full sample	Full sample	Full sample	Not low variance	Complete responses	Not too fast
Observations	20772	20790	20772	20688	19020	9648

Notes: This table shows the association between students' beliefs about employers' preferences and resume characteristics. The dependent variable in each regression is noted: interest represents the student's belief about the employer's interest in hiring the candidate on a scale of 1-10, willingness to pay represents the student's belief about the highest annual salary the employer would be willing to pay this candidate in thousands of dollars, and IHS(WTP) is the inverse hyperbolic sine of this. Student FE represents student fixed effects and resume order FE represents fixed effects for the number of resumes the student rated before this one. Sample restrictions are noted, with not low variance representing students whose within-respondent variance was greater than 1/4 the median, complete responses representing students who finished rating all 20 resumes, and not too fast representing student who spent greater than 1/4 the median time on the survey. Standard errors clustered at the respondent level in parentheses * $p < .1$, ** $p < .05$, *** $p < .01$

Table G.5: Students' beliefs about employer preferences and job outcomes, full set of outcomes

	(1) Applications	(2) R1/app	(3) Offers/app	(4) Offers	(5) Offers, full time	(6) Accepted position	(7) Accepted intern.	(8) Accepted job	(9) Grad school
Std. diff. of coef. on GPA	-3.743**	0.0280	0.0310	-0.0620	-0.0530	0.0450+	0.00670	0.0457*	-0.00771
	(1.579)	(0.0237)	(0.0338)	(0.119)	(0.0533)	(0.0281)	(0.0218)	(0.0275)	(0.0117)
Std. diff. of coef. on second work exp.	1.680	-0.0263	-0.000473	-0.0544	0.112**	-0.0548**	-0.101***	-0.00312	-0.00947
	(2.470)	(0.0214)	(0.0318)	(0.0979)	(0.0568)	(0.0265)	(0.0193)	(0.0264)	(0.0140)
Std. diff. of coef. on internship	-1.578	0.00681	-0.0357	-0.226**	-0.0960+	-0.00323	0.00394	0.0188	0.00381
	(1.362)	(0.0234)	(0.0363)	(0.0926)	(0.0582)	(0.0305)	(0.0262)	(0.0305)	(0.0150)
Std. diff. of coef. on extracurricular	1.607	-0.000169	0.0167	0.174	0.0244	0.0135	0.0294	-0.0228	0.0376+
	(2.394)	(0.0237)	(0.0398)	(0.159)	(0.118)	(0.0320)	(0.0242)	(0.0326)	(0.0234)
Female	-7.320*	0.0694+	0.0482	0.179	-0.0726	0.0264	0.0825+	-0.0105	0.0216
	(3.945)	(0.0477)	(0.0968)	(0.284)	(0.155)	(0.0641)	(0.0553)	(0.0648)	(0.0275)
GPA	-10.37*	0.0584	-0.143	-0.840**	-0.458*	0.0626	0.0863+	-0.0276	0.0137
	(5.336)	(0.0585)	(0.221)	(0.409)	(0.267)	(0.0768)	(0.0665)	(0.0745)	(0.0285)
Dependent variable mean	15.10	0.417	0.478	2.049	0.558	0.561	0.272	0.390	0.0557
Dependent variable SD	29.84	0.346	0.901	2.239	1.323	0.497	0.446	0.489	0.230
Observations	283	252	283	283	283	287	287	287	287

	(1) Applications	(2) R1/app	(3) Offers/app	(4) Offers	(5) Offers, full time	(6) Accepted position	(7) Accepted intern.	(8) Accepted job	(9) Grad school
Euclidean distance from coefs. (SD)	-1.912	0.0163	0.00211	-0.130	-0.0424	0.00897	-0.0261	0.0269	0.00993
	(1.855)	(0.0216)	(0.0314)	(0.143)	(0.0814)	(0.0278)	(0.0212)	(0.0263)	(0.0154)
Female	-5.397+	0.0659+	0.0446	0.186	-0.0624	0.0314	0.0857+	-0.00690	0.0275
	(3.610)	(0.0480)	(0.0966)	(0.278)	(0.154)	(0.0626)	(0.0527)	(0.0617)	(0.0283)
GPA	-9.611*	0.0552	-0.131	-0.773*	-0.415+	0.0604	0.0581	-0.0179	0.0364
	(5.110)	(0.0581)	(0.214)	(0.400)	(0.263)	(0.0749)	(0.0638)	(0.0721)	(0.0292)
Dependent variable mean	14.01	0.417	0.478	2.049	0.558	0.547	0.256	0.388	0.0647
Dependent variable SD	29.00	0.346	0.901	2.239	1.323	0.499	0.437	0.488	0.246
Observations	305	252	283	283	283	309	309	309	309

Notes: This table shows the association between students' misperceptions about employers' preferences and students' job outcomes. Controls include an indicator for whether the student is white, an indicator for whether the student is a first generation student (no parents completed college education), an indicator for whether the student is female, an indicator for whether the student receives Pell grants, the student's GPA, and an indicator for whether the student participated in an extracurricular activity. The dependent variable in each regression is noted: the outcome for column (1) is the number of applications the student submitted, column (2) is the number of round 1 interviews per application, column (3) is the number of offers received per application, column (4) is the total number of offers, column (5) is the total number of full-time offers, column (6) is an indicator for whether the respondent had accepted any position, column (7) is whether the respondent had accepted an internship, column (8) is whether the respondent had accepted a job, and column (9) is whether the respondent planned to attend graduate school. The independent variables are the standardized (mean 0, standard deviation 1) absolute difference between students' coefficients on each resume characteristic from the corresponding coefficient for employers in the same sector. The Euclidean distance between the students' and employers' coefficients summarizes these. The coefficients on an indicator for a student being female and the student's GPA are presented for comparison. Heteroskedasticity-robust standard errors in parentheses. + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

Table G.6: Information quality and employment outcomes, without controls

	(1) Applications	(2) R1/app	(3) Offers/app	(4) Offers	(5) Offers, full time	(6) Accepted position	(7) Accepted intern.	(8) Accepted job	(9) Grad school
Std. diff. of coef. on GPA	-2.899**	0.0268+	0.0486+	-0.0863	-0.0887*	0.0347+	0.000607	0.0310	-0.0139+
	(1.264)	(0.0202)	(0.0363)	(0.104)	(0.0523)	(0.0244)	(0.0212)	(0.0247)	(0.0102)
Std. diff. of coef. on second work exp.	1.591	-0.0126	-0.0109	-0.0722	0.0925*	-0.0342+	-0.0807***	0.00269	-0.0111
	(1.885)	(0.0212)	(0.0264)	(0.0885)	(0.0527)	(0.0255)	(0.0183)	(0.0255)	(0.0118)
Std. diff. of coef. on internship	-0.506	-0.0102	-0.00214	-0.0612	-0.0163	-0.0315	-0.0117	-0.00986	-0.00327
	(1.116)	(0.0207)	(0.0320)	(0.124)	(0.0734)	(0.0264)	(0.0232)	(0.0262)	(0.0115)
Std. diff. of coef. on extracurricular	1.342	-0.0115	0.00958	0.0295	-0.0252	-0.00362	0.0290+	-0.0351	0.0325+
	(1.733)	(0.0191)	(0.0323)	(0.142)	(0.106)	(0.0278)	(0.0219)	(0.0292)	(0.0204)
Dependent variable mean	13.93	0.420	0.493	2.090	0.616	0.553	0.270	0.396	0.0588
Dependent variable SD	27.13	0.355	0.865	2.536	1.543	0.498	0.445	0.490	0.236
Observations	368	319	367	367	367	374	374	374	374

	(1) Applications	(2) R1/app	(3) Offers/app	(4) Offers	(5) Offers, full time	(6) Accepted position	(7) Accepted intern.	(8) Accepted job	(9) Grad school
Euclidean distance from coefs. (SD)	-0.940	0.00817	0.0246	-0.165	-0.0724	-0.00885	-0.0240	-0.00138	-0.00194
	(1.319)	(0.0193)	(0.0353)	(0.129)	(0.0820)	(0.0242)	(0.0190)	(0.0244)	(0.0131)
Dependent variable mean	12.69	0.420	0.493	2.090	0.616	0.539	0.254	0.390	0.0634
Dependent variable SD	26.20	0.355	0.865	2.536	1.543	0.499	0.436	0.488	0.244
Observations	404	319	367	367	367	410	410	410	410

Notes: This table shows the association between students' misperceptions about employers' preferences and students' job outcomes. The dependent variable in each regression is noted: the outcome for column (1) is the number of applications the student submitted, column (2) is the number of round 1 interviews per application, column (3) is the number of offers received per application, column (4) is the total number of offers, column (5) is the total number of full-time offers, column (6) is an indicator for whether the respondent had accepted any position, column (7) is whether the respondent had accepted an internship, column (8) is whether the respondent had accepted a job, and column (9) is whether the respondent planned to attend graduate school. The independent variables are the standardized (mean 0, standard deviation 1) absolute difference between students' coefficients on each resume characteristic from the corresponding coefficient for employers in the same sector. The Euclidean distance between the students' and employers' coefficients summarizes these. Heteroskedasticity-robust standard errors in parentheses. + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

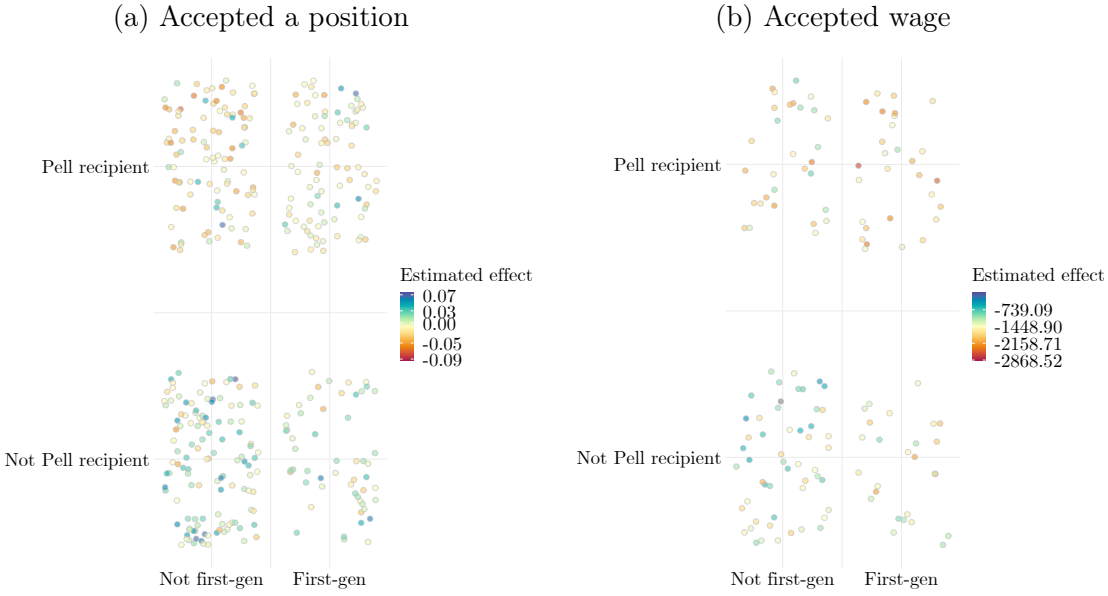
Table G.7: Information quality and wage outcomes, without controls

	(1) Accepted wage	(2) Avg. offered wage	(3) IHS accepted wage	(4) IHS avg. offered wage	(5) Negotiated
Std. diff. of coef. on GPA	-1684.5*	-804.6	-0.0156	0.123	0.0215
	(998.1)	(890.7)	(0.0471)	(0.121)	(0.0246)
Std. diff. of coef. on second work exp.	809.1	1864.4**	0.0154	0.179**	0.00173
	(976.2)	(756.8)	(0.0295)	(0.0752)	(0.0203)
Std. diff. of coef. on internship	2247.3+	1420.1+	0.0624+	-0.0270	-0.00234
	(1362.9)	(872.0)	(0.0474)	(0.121)	(0.0197)
Std. diff. of coef. on extracurricular	-2213.7**	-2010.5**	-0.0480+	-0.0491	-0.0158
	(957.0)	(814.9)	(0.0338)	(0.127)	(0.0284)
Dependent variable mean	35249.7	30019.7	11.04	10.46	0.167
Dependent variable SD	16158.2	14865.2	0.603	2.253	0.373
Observations	151	253	151	253	306

	(1) Accepted wage	(2) Avg. offered wage	(3) IHS accepted wage	(4) IHS avg. offered wage	(5) Negotiated
Euclidean distance from coefs. (SD)	-1289.8+	-42.79	-0.00525	0.172+	0.0104
	(946.7)	(814.3)	(0.0415)	(0.113)	(0.0239)
Dependent variable mean	35608.8	30019.7	11.05	10.46	0.167
Dependent variable SD	15966.0	14865.2	0.592	2.253	0.373
Observations	160	253	160	253	306

Notes: This table shows the association between students' misperceptions about employers' preferences and students' wage outcomes. The dependent variable in each regression is noted: the outcome for column (1) is the wage the student accepted, column (2) is the average wage the student was offered, column (3) the inverse hyperbolic sine of the wage the student accepted, column (4) is the inverse hyperbolic sine of the average wage the student was offered, and column (5) is an indicator for whether the respondent reported having negotiated an offer. The independent variables are the standardized (mean 0, standard deviation 1) absolute difference between students' coefficients on each resume characteristic from the corresponding coefficient for employers in the same sector. The Euclidean distance between the students' and employers' coefficients summarizes these. Heteroskedasticity-robust standard errors in parentheses. + $p < .2$ * $p < .1$, ** $p < .05$, *** $p < .01$

Figure G.2: Heterogeneity in relationship between information and job outcomes



Notes: This figure shows the results of the causal forest analysis performed for students. It plots the estimated relationship between the accuracy of a student's information—estimated based on the distance between her coefficients and employers'—and a given job outcome against student's status as Pell recipients and first generation students. Larger estimated effects indicate a larger correlation between information and job outcomes. Points are jittered for visual clarity.